Directions: Choose the best answer

680. If a patient has thunderclap headache and CT scan shows blood in the left sylvian fissure, the next diagnostic study would be:
A. EEG
B. MRI
C. LP
D. Left carotid angiogram
E. Four-vessel cerebral angiogram

681. Proper patient positioning for a subarachnoid phenol block is:
A. Painful side up with no tilt
B. Painful side down with no tilt
C. Painful side up with the patient tilted anteriorly 45°.
D. Painful side down with the patient tilted posteriorly 45°.
E. Painful side down with the patient tilted anteriorly 45°.

682. The following is characteristic of “cluster-type” headache:
A. Pupillary dilatation.
B. Relieved by sleep.
C. Long duration of pain episodes.
D. Prominent automatic discharge during headache.
E. Diplopia during attack.

683. A 39-year-old female patient presents with a 4-month history of sharp right lateral elbow pain after she suffered a fall to the outstreached hand at work. She complains of an intense sharp pain with use of right elbow during work activities. Upon examining the patient, you find she had a (+) lateral pivot shift test. There was no evidence of fracture. The likely diagnosis is:
A. Tendopathy of the extensor carpi radialis brevis
B. Lateral ulnar collateral ligament instability
C. Humeralradial joint degeneration
D. Posterior interosseus nerve entrapment
E. Laterl Epicondylitis

684. The central anticholinergic syndrome is LEAST likely to occur after administration of
A. Atropine
B. Chlorpromazine
C. Diphenhydramine
D. Glycopyrrolate
E. Scopolamine

685. Which of the following nerves is most likely to be injured by fracture of the shaft of the humerus?
A. Axillary
B. Median
C. Musculocutaneous
D. Radial
E. Ulnar

686. Traditional psychotherapy emphasizes all of the following EXCEPT:
A. Formation of defense mechanisms
B. Psychosexual development
C. The role of environmental reinforcement
D. The therapeutic process of transference
E. The relationship between conscious and unconscious processes

687. A middle aged man is administered morphine via patient-controlled analgesia (PCA) pump after a left total hip arthroplasty. The pump is programmed to deliver a maximum dose of 2 mg every 15 minutes (lockout time) as needed for patient comfort. The total maximum dose that can be delivered in 4 hours is 30 mg. On the first day the patient receives 15 doses every 4 hours by pressing the delivery button every 15 to 18 minutes. How should his pain control be further managed?
A. Discontinue the PCA pump and administer intramuscular morphine
B. Increase the lockout time from 15 to 25 minutes
C. Change the analgesic from morphine to fentanyl
D. Increase the dose to 3 mg every 15 minutes as needed up to a total maximum dose of 40 mg every 4 hours
E. Make no changes
688. What is the neurotransmitter involved in migraine?
A. Dopamine  
B. Acetylcholine  
C. Serotonin  
D. GABA  
E. Noradrenaline

689. Diplopia following lumbar puncture with a 25-gauge, 3½-inch needle is the result of
A. Stretching the abducens nerve  
B. Pressure on the optic nerve  
C. Distortion of the oculomotor nucleus from collapse of the wall of the third ventricle  
D. The severity of the accompanying headache  
E. Compensatory cerebral swelling

690. What is true about Tuffier’s line?
A. It represents a horizontal line connecting the superior-most aspects of the palpable iliac crests  
B. It can be identified by using the inferior poles of the scapulae as landmarks  
C. It can be helpful in performing cervical epidural anesthesia  
D. It is an imaginary line connecting the C7 and L5 spinous processes  
E. It represents needle trajectory during the performance of a spinal anesthetic

691. What is true about Tuffier’s line?
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692. All of the following neurosurgical procedures for pain relief have historically been used for the treatment of psychiatric conditions except:
A. Cingulotomy  
B. Anterior capsulotomy  
C. Leucotomy  
D. Hypothalamotomy  
E. Subtemporal sensory rhizotomy

693. When present, which of the following reflexes or signs best localizes an upper motor lesion to a level above the cervical spinal cord? Choose one:
A. Brisk jaw jerk  
B. Babinski sign (upgoing toe)  
C. Hoffman sign  
D. Loss of the superficial abdominal reflexes  
E. Clonus of one or both ankles

694. Which of the following is true with respect to carpal tunnel syndrome?
A. Patients develop nocturnal pain and burning in their radial three fingers and wrist  
B. Phalen’s test is not often used in clinical practice  
C. Reverse Phalen’s test, unlike the Phalen’s test, alleviates pressure from the wrist  
D. Hypoesthesia is present in the 5th digit  
E. Hypothenar muscle atrophy may be present

695. Which of the following is the most appropriate pharmacologic therapy for trigeminal neuralgia?
A. Buprenorphine  
B. Carbamazepine  
C. Chlorpromazine  
D. Pentazocine  
E. Phenelzine

696. A 19-year-old female whose roommate is being treated for depression decides that she is also depressed and secretly takes her roommate’s pills “as directed on the bottle” for several days. One night, she makes herself a snack of chicken liver pate and bleu cheese, accompanied by a glass of red wine. She soon develops headache, nausea, and palpitations. She goes to the ED, where her blood pressure is found to be 200/110mmHg. What antidepressant did she take?
A. Sertraline  
B. Phenelzine  
C. Nortriptyline  
D. Trazodone  
E. Fluoxetine

697. In which of the following types of patients would you expect the best results following a surgical sympathectomy?
A. Failure of response to sympathetic blocks  
B. Raynaud’s syndrome  
C. Diabetic peripheral neuropathy  
D. Phantom limb pain  
E. Spinal cord injury end zone pain

698. To evaluate warm temperature sensation, the stimulus should be in which of the following temperature ranges?
A. 25 to 29°C  
B. 30 to 35°C  
C. 36 to 39°C  
D. 40 to 45°C  
E. 46 to 50°C

699. A patient with lumbar disk disease requires lumbar epidural injection of a corticosteroid for control of low back pain. Which of the following statements concerning this treatment is true?
A. Maximum effect occurs one hour after injection  
B. Maximum effect occurs when drug concentration peaks in cerebrospinal fluid  
C. Maximum effect occurs during the acute phase of the disease  
D. The beneficial effect results primarily from sympathetic neurolysis  
E. It is contraindicated the patient has had prior surgical procedures on the lumbar disks
700. Which of the following words is defined as a chronic preoccupation with obtaining the substance of choice and misuse or overuse of the substance despite negative consequences?
A. Tolerance
B. Physical dependence
C. Pseudo addiction
D. Psychological dependence
E. Addict

701. True statements regarding Sacroiliac joint dysfunction include all of the following except:
A. Pain radiating to hip, back, and thigh
B. Pain worsened by twisting movements
C. Straight leg raising may be positive
D. Pain worsened by sitting on the contralateral ischial tuberosity
E. Pain radiating to the groin

702. Which of the following is true with regards to phantom limb sensation?
A. It is strongest in above elbow amputations
B. More frequent in the non-dominant limb in double amputees
C. Described as an unpleasant, burning sensation
D. Requires aggressive treatment with medication and interventional therapy
E. It is weakest in above knee amputations

703. For brachial plexus avulsion pain, the long-term outcomes of DREZ lesioning are approximately:
A. 60-65%
B. 10-15%
C. 1-2%
D. 40-50%
E. 15-25%

704. A 30-year-old man develops “the first and worst headache of his life” after 5 min of weight lifting. The headache is throbbing in quality. It causes him to stop lifting. The headache disappears in 10 min. When he goes to the emergency department (ED), he is asymptomatic and the exam is entirely normal. What is the most likely diagnosis?
A. Subarachnoid hemorrhage.
B. Bacterial meningitis.
C. Benign exertional headache.
D. Intracranial hypertension.
E. Hypertensive encephalopathy.

705. Which of the following is the most important disadvantage of interscalene brachial plexus block compared with other approaches?
A. Frequent sparing of the musculocutaneous nerve
B. High incidence of pneumothorax
C. Not suitable for operations on the shoulder
D. Large volumes of local anesthetics required
E. Frequent sparing of the ulnar nerve

706. What percentage of patients is afflicted by glossopharyngeal neuralgia compared to trigeminal neuralgia?
A. 0.1-0.5%
B. 1-2%
C. 10-15%
D. 30-40%
E. 10-20%

707. Rotator cuff tear is diagnosed by:
A. Plain radiographs
B. MRI
C. MR arthrography
D. CT
E. Sonography

708. Injection of local anesthetic into the interspace between the 3rd and 4th toes may provide relief of which condition?
A. Morton’s neuroma
B. Metatarsalgia
C. Plantar Fasciitis
D. Painful heel spur
E. Tarsal Tunnel Syndrome

709. Regarding meningitis, which of the following best suggests meningeal irritation? Choose one:
A. Bilateral Horner’s syndrome
B. Inability to stay awake
C. A stiff neck coupled with Kernig’s and Brudzinski’s signs
D. Inability to fall asleep because of headache-induced nausea
E. Opisthotonus

710. Which of the following statements concerning interscalene brachial plexus block is true?
A. The three trunks of the plexus are in the same fascial plane as the internal jugular vein
B. Distal spread of anesthetic past the humeral head is accelerated by adduction of the arm
C. Anesthetic solution can spread up the fascial sheaths to involve the stellate ganglion
D. Ipsilateral diaphragmatic paralysis results from epidural spread
E. Rich vascularity in the sheaths promotes rapid vascular uptake of anesthetic

711. For a patient presenting with a left facial droop and right upper extremity paresis, the most likely site of the lesion is:
A. Brainstem
B. Right parietal lobe
C. Origin of the left facial nerve and left motor cortex
D. Anterior bundle of the corpus colossum
E. Left frontal lobe
712. Which of the following is a true statement regarding a thoracic sympathetic block?
A. Can only be performed with the patient in the prone position.
B. Can be performed bilaterally at the same visit.
C. Pneumothorax is not a concern.
D. Blocks Kuntz’s fibers
E. Not effective for treating thoracic visceral pain.

713. Intermittent Horner syndrome may be seen in this headache disorder:
A. Migraine with aura.
B. Migraine without aura.
C. Temporal arteritis.
D. Benign intracranial hypertension.
E. Cluster

714. The following is characteristic of migraine with aura:
A. Fortification spectra.
B. Headache preceding motor weakness.
C. Headache preceding aphasia.
D. Amaurosis fugax and scintillating scotoma.
E. Headache precipitated by emotional stress.

715. Clinical features of carpal tunnel syndrome (CTS) include:
A. Pain in the forearm
B. Positive Phalen sign
C. Weakness of thumb flexion
D. Normal triceps reflex
E. All of the above

716. The following are characteristic of migraine without aura:
A. Bilateral location of pain
B. Thunderclap quality to pain onset.
C. Shock or jolt quality of pain
D. Photopsia and scintillating scotoma.
E. Headache associated with nasal congestion, lacrimation, and Horner syndrome.

717. In normal tissue, which property of drugs has the greatest effect on the speed on onset of a local anesthetic?
A. Amide structure
B. Degree of protein binding
C. Intrinsic vasoconstrictor activity
D. pKa
E. Potency

718. Subarachnoid hemorrhage is best diagnosed by what test?
A. Enhanced CT
B. Unenhanced CT
C. Enhanced MRI
D. Unenhanced MRI
E. Skull radiographs

719. Which of the following opioids should be avoided in a patient with renal disease?
A. Meperidine
B. Sufentanil
C. Morphine
D. Hydrocodone
E. Hydromorphone

720. The pathophysiological mechanism which initiate disk herniation include:
A. Radial tear of annulus fibrosis
B. Prolapse of disk
C. Extrusion of disk
D. Biochemical changes within disk
E. All of the above

721. Which of the following statements concerning postspinal headache is true?
A. Cerebrospinal fluid leucocytosis occurs
B. Intravenous caffeine therapy is more effective than epidural blood patch
C. The incidence decreases with age
D. The incidence is higher in males than in females of all ages
E. The incidence is the same after single or multiple dural punctures

722. Choose the accurate statement about Visual Analogue Scale.
A. A Visual Analogue Scale consists of a list of adjectives describing different levels of pain intensity.
B. A Visual Analogue Scale consists of a line, usually 10 cm long, whose ends are labeled as the extremes of pain (no pain to pain as bad as it could be).
C. A Visual Analogue Scale involves asking patients to rate their pain from 0 to 10 on an 11 point scale.
D. A Visual Analogue Scale employs pain intensity which is determined by photographs or line drawings that illustrate facial expressions of persons.
E. A Visual Analogue Scale consists of pain intensity which describes from faint to very intense.

723. The term spinal shock refers to:
A. Depression of spinal reflex activity below the level of injury
B. Blood loss and hypovolemia following systemic injury
C. Loss of motor function following spinal injury
D. Loss of bladder function following spinal injury
E. All of the above

724. The following cranial structures are pain sensitive:
A. Venous sinuses.
B. Meningeal arteries.
C. Head and neck muscles.
D. Large cranial arteries.
E. All of the above

725. In patients with cauda equina compression, clinical features usually include:
A. Asymmetric leg weakness
B. Absent ankle and knee reflexes
C. Bladder dysfunction
D. All of the above
E. None of the above
726. The spinal cord region responsible for reflexogenic penile erection is the:
A. Parasympathetic center at S-2 to S-4
B. Sympathetic center at S-2 to S-4
C. Sympathetic center at T-10 to L-2
D. Somatic motor fibers at S-2 to S-4
E. Hypothalamus

727. While performing a right lumbar sympathetic radiofrequency lesioning, at L3, the patient complains of pain in the right groin. What is the likely etiology of this pain?
A. Lesioning of the ilioinguinal nerve
B. Psoas spasm
C. Lesioning of the iliohypogastric nerve
D. Lesioning of the genitofemoral nerve
E. Quadratus spasm

728. Self-efficacy is synonymous with:
A. Exclusive reliance on pain interventions
B. External locus of control
C. Internal locus of control
D. Social support
E. Euthymia

729. Some physiological consequences of epidural blockade may include:
A. Increased peristalsis
B. Interference with satiety
C. Impaired respiratory function, by modifying respiratory drive, reducing diaphragmatic contractility, permitting increased airway hyperactivity, and impairing V/Q mismatch
D. Hypertension
E. Degree of sympathetic blockade that correlates with the degree of sensory blockade

730. Bupivacaine is more likely than lidocaine to cause refractory cardiac arrest because bupivacaine:
A. Has a lower rate of plasma clearance
B. Has a secondary blocking effect on cardiac beta1-adrenergic receptors
C. Dissociates more slowly from sodium channels in cardiac muscle
D. Inhibits spontaneous space 4 decolorization in pacemaker cells
E. Preferentially blocks calcium channels in Purkinje fibers

731. After heat radiofrequency lesioning of the right sphenopalatine ganglion, the patient complains of right upper tooth numbness. What is the likely explanation?
A. The greater palatine nerve was lesioned as well
B. The lesser palatine nerve was lesioned as well
C. The Vidian nerve was lesioned as well
D. The maxillary nerve was lesioned as well
E. The mandibular nerve was lesioned as well

732. Proposed mechanisms of action for spinal cord stimulation include all of the following except:
A. Segmental antidromic inhibition of A-beta afferents
B. Blocking of transmission in the spinothalamic tract
C. Supraspinal pain inhibition
D. Activation of central inhibition of sympathetic efferent neurons
E. Antidromic activation of C nociceptive afferents

733. Sexual dysfunction occurs in these condition:
A. Depressive illness
B. Diabetes mellitus
C. Multiple sclerosis
D. Lumbar sympathectomy
E. All of the above

734. The plasma concentration of equal doses of a local anesthetic is highest when the site of administration is:
A. Axillary brachial plexus
B. Caudal
C. Intercostal
D. Lumbar epidural
E. Subcutaneous

735. Neurolytic blockade is most appropriate for:
A. Abdominal pain secondary to hepatic carcinoma
B. Abdominal pain secondary to pancreatitis
C. Persistent chest wall pain secondary to intercostal neuralgia following a thoracotomy for trauma.
D. Reflex sympathetic dystrophy of the upper extremity with an excellent but transient response to a series of stellate ganglion blocks with local anesthetic
E. A diabetic patient scheduled for surgical sympathectomy to relieve unilateral lower extremity pain secondary to severe peripheral vascular disease.

736. Which of the following is true about the stellate ganglion?
A. Everybody has one
B. It is located at C6
C. It is formed by the fusion of the inferior cervical and first thoracic ganglion.
D. It is bordered anteriorly by the vertebral artery.
E. Blockade of the ganglion reliably causes a sympathectomy of the ipsilateral upper extremity.

737. Malingering involves production of false or exaggerated symptoms that are:
A. Intentionally produced
B. Unconsciously motivated
C. Symptomatic of a psychotic process
D. Easily detectable on exam
E. Associated with family history of depression

738. A conversion disorder is:
A. Intentionally produced or feigned
B. Limited to pain
C. Suggestive of a neurological or general medical condition
D. Explainable by the effects of a substance.
E. Unrelated to functional impairment
739. In taking the pain history, what factors are critical to assess?
A. Temporal features
B. Expectational values of the patient
C. Educational features of the patient
D. All of the above
E. None of the above

740. Which statement regarding occipital nerve stimulation is true:
A. The electrode is placed transversely in the subcutaneous tissue plane overlying C1-2.
B. The technique is contra-indicated in patients who have undergone posterior cervical spine surgery.
C. Paresthesias are typically felt in the ipsilateral occiput and down the ipsilateral arm
D. Bilateral occipital leads are contraindicated
E. A stimulation trial is not necessary prior to implant

741. A far left lateral disc bulge at the L4-5 level will likely affect which nerve root?
A. The left L5 nerve root
B. The left L4 nerve root
C. The left L4 and L5 nerve roots
D. The bilateral L4 nerve roots
E. The bilateral L4 nerve roots

742. The following are necessary of successful spinal cord stimulation implant except:
A. Paresthesia sensation that overlaps region of pain
B. Comfortable paresthesia
C. Pain relief at low amplitudes
D. Intact cognitive abilities of the patient recipient
E. Absence of stimulation in nonpainful targets

743. Current Perception Threshold testing:
A. Can evaluate small nerve fibers impossible to assess on standard EMG/NCS's
B. Is of minimal value in the blind because visual perception of stimuli is key to accuracy
C. Is very expensive to perform and therefore not widely available
D. Is of little value in assessing pain and temperature thresholds because the nerve fibers are too small
E. Is of greatest value where axonal versus demyelinating neuropathies need clarification

744. Somatization disorder criteria include all of the following EXCEPT:
A. A history of many physical complaints
B. Onset after age 30
C. Four pain symptoms
D. Two gastrointestinal symptoms
E. One sexual symptom

745. Nociception of the pancreas is mediated through sympathetic nerves originating at which levels?
A. T5-9
B. T10-11
C. T12
D. T8-11
E. T10-12

746. Exclusion criteria for group therapy include all of the following EXCEPT:
A. Severe depression
B. Pain behavior
C. Significant personality disorders
D. Capacity for violence
E. Significant history of noncompliance

747. A 40-year old construction worker presents with pain over the dorsal aspect of the forearm and inability to fully extend the arm at the elbow. Physical examination reveals diminished sensation over the dorsal aspect of the index and middle fingers as well as an absent triceps reflex. The most likely diagnosis:
A. C5
B. C6
C. C7
D. C8
E. T1

748. Spinal cord stimulation in treatment of CRPS:
A. Inhibits sympathetic outflow
B. Should be preceded by psychological assessment
C. Should be first tested by trial stimulation
D. Double electrodes need to be close to the “sweet spot”
E. All of the above

749. Muscle contractions from poorly treated CRPS:
A. Can be surgically corrected by muscle lengthening
B. Should be manually stretched by a strong physical therapist
C. Botox injections are ineffective
D. Acupuncture, but only on Yang points are completely curative
E. None of the above

750. When performing a sphenopalatine ganglion block, the final needle tip position should be adjacent to what structure on the anteroposterior fluoroscopic image?
A. Inferior turbinate
B. Nasal septum
C. Superior turbinate
D. Orbit
E. Middle turbinate

751. CRPS diagnostic absolute “gold standard”:
A. Bone scan
B. 3-phase bone scan
C. Osteoporosis
D. Overactive sympathetic nervous system
E. None of the above
752. A patient presents with an acute onset of pain in the upper extremity. His physical examination showed weakness of wrist extension. The sensory examination showed hypoesthesia in the lateral forearm. What is the most likely involvement of disc herniation and nerve root in this patient?
   A. C6/7 disc herniation with C7 nerve root involvement
   B. C7/T1 disc herniation with C8 nerve root involvement
   C. T1/T2 disc herniation with T1 nerve root involvement
   D. C4/5 disc herniation with C5 nerve root involvement
   E. C5/6 disc herniation with C6 nerve root involvement

753. Early medical treatment of CRPS includes:
   A. Anti-inflammatories
   B. Steroids
   C. Antidepressants
   D. Anti-seizure medications
   E. Any of the above

754. A type I diabetic patient has been treated with relaxation techniques daily for one month. This treatment is likely to affect the management of her diabetes by
   A. Increased levels of plasma cortisol
   B. Increased sensitivity to insulin
   C. Increased glucose-stimulated secretion of insulin
   D. Significant improvement in glucose tolerance
   E. No significant change in requirements for exogenous insulin

755. A 31-year-old female has been treated with fluoxetine for two months with no improvement in her depression. You decide to switch antidepressant therapy to phenelzine and instruct her to wait one week after stopping fluoxetine to start taking the new pills. She begins therapy immediately with phenyline without discontinuing fluoxetine. Two days later, she is brought to the ED with unstable vital signs, muscle rigidity, myoclonus, and hyperthermia. What caused these findings?
   A. Increased serotonin (5-HT) in synapses
   B. Increased norepinephrine in synapses
   C. Increased acetylcholine in synapses
   D. Increased dopamine in synapses
   E. Decreased norepinephrine in synapses

756. These drugs are effective in acute migraine management:
   A. Isometheptene, dichloralphenazone.
   B. Ergotamine
   C. Caffeine
   D. Imitrex
   E. All of the above

757. Münchhausen syndrome is a type of:
   A. Somatization disorder
   B. Factitious disorder
   C. Conversion disorder
   D. Hypochondriacal presentation
   E. Personality disorder

758. Phalen's test involves
   A. Tapping on the volar wrist with a reflex hammer to see if paresthesias could be elicited.
   B. Using the tips of an unwound paper clip to evaluate areas of suspected sensory loss
   C. Actively flexing the wrist for 30-60 seconds to see if pain is reproduced
   D. Putting both hands in a prayer position for 30-60 seconds
   E. Having the patient bring the thumb perpendicular to the palm against resistance

759. If nystagmus is a prominent symptom of a cerebellar lesion, the lesion is within
   A. The dentate nucleus
   B. The flocculonodular lobe
   C. The lateral cerebellum
   D. The cerebrocerebellar cortex
   E. The superior cerebellar peduncle

760. A patient presents with onset of upper extremity pain. The physical examination revealed weakness of elbow extension and loss of sensation of the middle finger. The correct diagnosis in this patient is:
   A. C4 nerve root involvement
   B. C5 nerve root involvement
   C. C6 nerve root involvement
   D. C7 nerve root involvement
   E. C8 nerve root involvement

761. Finger flexion best tests for what nerve root?
   A. C5
   B. C6
   C. C7
   D. All of the above
   E. None of the above

762. A 22-year old woman goes on a date. Following dinner, her date tries to be affectionate. She becomes anxious and develops weakness with inability to walk. Previous history includes sexual abuse at age of 16, with hospitalization and psychotherapy. She has improved with treatment and diazepam. The most likely diagnosis is
   A. Conversion reaction
   B. Somatoform disorder
   C. Psychoaffective disorder
   D. Fictitious disorder
   E. Malingering

763. Intrathecal baclofen is indicated for:
   A. Peripheral neuropathy
   B. Spasticity from cerebral palsy
   C. Post-laminectomy syndrome
   D. Spasticity from fibromyalgia
   E. Central thalamic pain

764. Intrathecal clonidine may be indicated for all conditions, EXCEPT:
   A. Neuropathic pain
   B. Failed laminectomy syndrome
C. Complex regional pain syndrome
D. Cancer pain
E. Lumbar disc herniation

765. When using intrathecal opioids, speed of onset of analgesia is:
A. Directly related to lipid solubility
B. Inversely related to lipid solubility
C. Indirectly related to lipid solubility
D. Unrelated to lipid solubility
E. Speed and duration are directly related to lipid solubility

766. If the recurrent laryngeal nerve were transected bilaterally, the vocal cords would
A. Be paralyzed in the open position
B. Be paralyzed in the closed position
C. Be paralyzed in the intermediate position
D. Not be affected unless the superior laryngeal nerve were also injured
E. Appear exactly the same as if an intubating dose of succinylcholine were given

767. The somatoform condition with the lowest incidence is:
A. Malingering
B. Somatization disorder
C. Factitious disorder
D. Conversion disorder
E. Hypochondriasis

768. The block that could be performed to confirm the results of the differential epidural block in evaluation of pelvic pain would be
A. Splanchnic block
B. Lumbar sympathetic block
C. Hypogastric plexus block
D. Celiac plexus block
E. Sciatic nerve block

769. Which of the following is not an indication for stretching?
A. Prolonged immobilization
B. Restricted mobility
C. Connective tissue diseases
D. Adhesive capsulitis
E. Recent compression fracture fracture

770. Munchhausen syndrome is an type of:
A. Hypochondriacal presentation
B. Conversion disorder
C. Somatization disorder
D. Personality disorder
E. Factitious disorder

771. Which of the following carries the lowest risk of complications?
A. Microvascular decompression
B. Subtemporal sensory rhizotomy
C. Selective trigeminal rhizotomy
D. Open trigeminal (nucleus caudalis) tractotomy
E. Stereotactic trigeminal tractotomy

772. Which of the following is true?
A. Paraffin is a good heating method in patients with rheumatoid arthritis
B. Whirlpool therapy is useful to patients with metastatic bone disease
C. Patients with diabetic foot neuropathy should use heat lamps for pain relief
D. Hot packs may be routinely applied for over an hour
E. Skin temperatures of 50 degrees C pose no risk of burn injury

773. The most common cause of peripheral neuropathy is:
A. Idiopathic
B. Diabetes Mellitus
C. Nutritional Deficiencies
D. ETOH
E. None of the above

774. In the clinical assessment of neuropathic pain, which procedure(s) should be included in the diagnostic workup?
A. EMG and/or NCV
B. Laboratory evaluations
C. Imaging studies
D. All of the above
E. None of the above

775. Which of the following carries the lowest risk of complications?
A. Microvascular decompression
B. Subtemporal sensory rhizotomy
C. Selective trigeminal rhizotomy
D. Open trigeminal (nucleus caudalis) tractotomy
E. Stereotactic trigeminal tractotomy

776. Which of the following is an type of:
A. Hypochondriacal presentation
B. Conversion disorder
C. Somatization disorder
D. Personality disorder
E. Factitious disorder

777. When evaluating peripheral neuropathy, the most informative nerve to test during nerve conduction studies would be:
A. Median nerve
B. Sural nerve
C. Ulnar nerve
D. Plantar tibial nerve
E. Axillary nerve

778. Which of the following is an type of:
A. Hostility
B. Competitiveness
C. Time Urgency

779. The dorsal columns of the spinal cord primarily carry:
A. Pain sensation
B. Temperature sensation
C. Spinothalamic tracts
D. All of the above
E. None of the above
779. The H reflex is commonly recorded from which muscle(s):
A. Gastrocnemius  
B. Biceps brachii  
C. Temporalis  
D. Soleus  
E. All of the above

780. Although a patient was instructed not to use alcohol because of a medication he was taking, he did not listen to advice and decided to have a drink of alcohol. Within minutes, he developed flushing, a throbbing headache, nausea and vomiting. Which of the following medications was he taking?
A. Naltrexone  
B. Diazepam  
C. Disulfiram  
D. Phenobarbital  
E. Tranylcypromine

781. Each of the following is a potential complication of lumbar sympathetic blocks EXCEPT
A. Puncture of the renal pelvis  
B. Intravascular injection  
C. Seizure  
D. S1 nerve block  
E. Accidental Subarachnoid injection

782. Which of the following agents is useful in the treatment of malignant hyperthermia?
A. Baclofen  
B. Diazepam  
C. Cyclobenzaprine  
D. Dantrolene  
E. Halothane

783. Spasticity can be caused by sectioning
A. The corticospinal fibers  
B. The vestibulospinal fibers  
C. The afferent fibers  
D. The corticoreticular fibers  
E. The reticulospinal fibers

784. Which of the following appears to have the best outcomes in terms of preventing low back injury at the worksite
A. Back School  
B. Ergonomic adaptations according to NIOSH  
C. Pre-employment physical examination  
D. Prophylactic back belts  
E. Pre-employment X-ray screening

785. A patient who presents with an intention tremor, “past-pointing,” and a “drunken” gait might be expected to have a lesion involving the
A. Cerebellum  
B. Medulla  
C. Cortical motor strip  
D. Basal ganglia  
E. Eighth cranial nerve

786. The most common complication of a celiac plexus block is
A. Hypotension  
B. Subarachnoid injection  
C. Seizure  
D. Retroperitoneal hematoma  
E. Constipation

787. A 31-year-old female is treated with an antipsychotic agent because of a recent history of spontaneously removing her clothing in public places and claiming that she hears voices telling her to do so. Her blood pressure is normally 130/70 mmHg. Since being treated with a drug, she has had several bouts of syncope. Orthostatic hypotension was noted on physical examination. Which drug most likely caused this?
A. Haloperidol  
B. Olanzapine  
C. Fluphenazine  
D. Chlorpromazine  
E. Sertindole

788. The presence of pain behavior in chronic pain presentations:
A. Indicates that pain is “all in the patient’s head”  
B. Is a normal adaptation to an abnormal set of circumstances  
C. Is an indication of psychopathology  
D. Is abnormal in chronic pain populations  
E. Indicates the absence of true pathophysiology

789. Spinal Shock:
A. Occurs weeks to months after initial injury  
B. Is frequently associated with autonomic dysfunction  
C. Will usually result in full recovery of function  
D. All of the above  
E. None of the above

790. Increased activity on bone scintigraphy may be from all except:
A. Healing fracture  
B. Prostate metastases  
C. Stress fracture  
D. Interrupted sympathetic nerve supply  
E. Old orthopedic hardware

791. Which represents an important diagnostic “red flag” in the patient with headache?
A. Abrupt onset with progressively increasing severity  
B. Distinct temporal pulse  
C. Retro-orbital pain with lacrimation lasting 5-10 minutes  
D. Pain worse with extension  
E. Normal bladder function

792. What is the most frequent initial site of metastatic tumor spread to the spine?
A. Bone marrow  
B. Vertebral pedicle  
C. Nucleus pulposus
793. Which of the following is the most appropriate initial examination to evaluate for disc herniation?
A. Enhanced MR
B. Unenhanced MR
C. Enhanced CT
D. Unenhanced CT
E. CT Myelogram

794. A L4-5 left paracentral disc protrusion will likely affect which nerve root?
A. The left L5 nerve root
B. The left L4 nerve root
C. The left L4 and L5 nerve roots
D. The bilateral L5 nerve roots
E. The bilateral L4 nerve roots

795. A “fake bad” profile can be estimated by using the:
A. Medical Outcomes Survey (MOS)
B. Sickness Impact Profile (SIP)
C. Minnesota Multiphasic Personality Inventory (MMPI)
D. Coping Strategies Questionnaire
E. Spielberger State-Trait Anxiety Inventory (STAI)

796. Personality disorders can be readily assessed by:
A. Clinical interview
B. Careful history-taking
C. Utilizing the Symptom Checklist - 90
D. Observing waiting room behavior
E. MMPI or MCMI

797. Which of the following medications does not potentiate opioid respiratory depression?
A. Dexmetetomidine
B. Methohexital
C. Etomidate
D. Diazepan
E. Propofol

798. Positive reinforcement refers to:
A. A stimulus that increases the likelihood that a certain behavior will be maintained or repeated
B. A consequence that decreases the likelihood that a certain behavior will be maintained or repeated
C. A consequence that increases the likelihood that a certain behavior will be maintained or repeated
D. A stimulus that decreases the likelihood that a certain behavior will be maintained or repeated
E. A consequence that does not influence the likelihood that a certain behavior will be maintained or repeated

799. Thalamic lesioning is usually used to treat:
A. Shooting, allodynic pain
B. Deafferentation pain
C. Burning, dysesthetic pain
D. Peripheral nociceptive pain
E. Radicular pain

800. The initial imaging modality recommended for evaluation of traumatic odontoid (dens) fracture is?
A. X-ray tomograms of the odontoid process
B. Plain radiographs with lateral and open mouth views
C. CT scan with axial and coronal reconstructions
D. T1-weighted MRI sagittal and coronal views
E. Triple phase bone scan to identify fracture line

801. What percentage of community-dwelling elderly suffer from chronic pain?
A. 10-20%
B. 20-25%
C. 25-50%
D. 50-60%
E. > 60%

802. The best definition for a vertebral disc bulge is which of the following?
A. An intraverterbral disk herniation (Schmorl’s node)
B. Disruption of concentric fibers of the annulus fibrosis
C. Generalized extension of disc material beyond the edge of the vertebra involving 180°
D. Localized displacement (< 50% of circumference) beyond the vertebral edge
E. Disc material effacing epidural fat in the neural foramen

803. Vertebral discitis and osteomyelitis are best imaged by
A. MRI
B. Bone scan
C. CT-myelogram
D. Plain radiographs
E. Duplex ultrasound

804. Back pain developing after spine surgery is best imaged by
A. Unenhanced MR
B. Contrast Enhanced MR
C. Unenhanced CT
D. Enhanced CT
E. Myelography

805. Tissues that appear denser on plain radiographs have:
A. More electron density
B. Less electron density
C. More neutron density
D. Less neutron density
E. None of the above

806. Tissues that are more echogenic on sonography:
A. Appear darker
B. Include cysts
C. Have more reflective surfaces
D. Do not include fat
E. Include moving blood

807. Hounsfield units on CT:
A. Are a measure of enhancement
B. Water=200 HU
C. Acute hemorrhage = -100 HU
Section 4 • Diagnosis & Therapy

809. Which of the following is most appropriate for a patient with end-stage rectal cancer?
A. Lissauer tractotomy
B. Cingulotomy
C. Hypophysectomy
D. Commissural myelotomy
E. Percutaneous C1-2 cordotomy

810. Deep brain stimulation to treat primarily nociceptive pain would most likely target the:
A. Periaqueductal grey
B. Ventroposterolateral or Ventroposteromedial thalamus
C. Caudalis subnucleus
D. Nucleus gracilis
E. Reticular formation

811. Aortic dissection is best diagnosed by what test?
A. Unenhanced CT
B. Ultrasound
C. Unenhanced and enhanced CT
D. MRI
E. Angiography

812. Pain transmitted from the ovaries enters the central nervous system at what spinal level?
A. T10
B. T12
C. L2
D. L4
E. S1

813. All of the following are typically associated with the technical aspects of epidural anesthesia, except:
A. Paramedian
B. Bromage grip
C. Hanging drop
D. Taylor approach
E. Sacral hiatus.

814. Personality disorders are easily diagnosed by:
A. Careful history-taking
B. Clinical interview
C. Observing waiting room behavior
D. Utilizing the Symptom Checklist – 90
E. None of the above

815. As a part of a psychological evaluation, a clinical interview includes all of the following EXCEPT:
A. History
B. Financial and legal information
C. General medical status
D. Psychosocial information
E. Pain tolerance testing

816. The most widely practiced percutaneous technique for relief of trigeminal neuralgia is:
A. Glycerol rhizolysis
B. Balloon-catheter decompression
C. Microvascular decompression
D. Radiofrequency thermocoagulation
E. Radiosurgery

817. Referred pain from pericarditis is felt where?
A. Left shoulder
B. Right shoulder
C. Left upper quadrant of the abdomen
D. Right upper quadrant of the abdomen
E. Mid epigastrium

818. Your patient is a 38-year-old male who plays in a weekend volleyball league on a regular basis. He has developed posterior shoulder pain that is aching in nature and increases with increased slamming of the ball over the net. You have noticed that his symptoms are provoked with passive internal rotation and adduction of his arm behind his back, followed by passive cervical sidebending to the contralateral side. Which disorder do you think he has?
A. Acromioclavicular arthritis
B. Bennett’s lesion
C. Posterior glenohumeral labral tear
D. Suprascapular nerve entrapment
E. Adhesive Capsulitis

819. Tietze's syndrome is defined as unilateral costochondritis of what rib level/s?
A. 1st and 2nd
B. 2nd and 3rd
C. 3rd and 4th
D. 2nd only
E. 3rd only

820. This finding is characteristic of temporal arteritis:
A. Throbbing headache.
B. Markedly elevated ESR.
C. Tender temporomandibular joint.
D. Active arthritis.
E. Pulsatile, nontender temporal artery

821. In patients with neoplastic conus medullaris compression, clinical features usually include:
A. Symmetrical paraplegia with analgesia at wrist level
B. Normal ankle jerks
C. Bladder dysfunction
D. Plantar flexor signs
E. All of the above
822. Just as you are about to perform a bilateral occipital nerve block using 10 cc of bupivicaine 0.25% with Depomedrol 40 mg on a patient for bilateral occipital headache she tells you she had surgery for an Arnold-Chiari malformation as a youth. She was only a child then and doesn't recall the event. You have no previous diagnostic tests. Your best option is to:
A. Proceed with the injection as planned since you already started
B. Proceed with the injection but use a non-particulate steroid.
C. Proceed with the injection but use no steroid
D. Cancel the procedure and re-evaluate the patient.
E. Perform a bilateral C2 and C3 nerve root block instead of the bilateral occipital nerve block.

823. A 36-year old felt a sharp pain in the neck, radiating to the dorsal aspect of the forearm when he was lifting a large box. He started experiencing numbness of the thumb and index finger, with decreased ability to perform biceps flexion. On examination, a diminished biceps reflex was found. What is the most likely cause of the patient's problems?
A. Fractured C5 vertebra
B. C5/6 disc protrusion
C. Facet syndrome at C5/6
D. Compression of the C5 nerve root by an osteophyte
E. C4/5 disc protrusion

824. Preganglionic axons that form the greater splanchnic nerve originate in the spinal cord at what vertebral body levels?
A. T2-6
B. T3-7
C. T4-8
D. T5-9
E. T6-10

825. Spurling's maneuver is a technique that
A. Is used to evaluate pain emanating from the cervical facet joint
B. Involves having the patient actively extend and rotate their neck
C. Would help in evaluating a patient that gives a history of arm pain
D. Evaluates the same problem as a Hoffman's maneuver
E. If positive, one would be inclined to order a bone scan

826. The following statements regarding treatment of pain in multiple organ/system trauma include all of the following
A. May require more than one modality of analgesia
B. Head injury is an absolute contraindication to epidural placement
C. An advantage of regional block techniques over IV PCA is improved blood flow in the area of the block.
D. An interpleural catheter is a viable alternative for thoracic trauma, when an epidural is contraindicated.
E. In a multitrauma patient needing an epidural catheter, treatment of the pain secondary to a thoracic injury takes precedent over other injuries.

827. Which of the following types of interventional procedures is associated with the greatest serum concentration of lidocaine?
A. Intercostal
B. Caudal
C. Epidural
D. Brachial plexus
E. Femoral nerve block

828. Which of the following historical complaints can be used to differentiate inflammatory arthritis from osteoarthritis patients?
A. Morning stiffness greater than 1 hour
B. Joint pain that worsens with activity
C. Joint swelling
D. Joint popping
E. Erythema and pain in the DIPs (distal interphalangeal joints).

829. Cordotomy is most useful in treating patients with pain complaints involving the extremities.
A. The open procedure is a lesion of the anterior cord.
B. The lesion is made in the anterior spinohalamic tract.
C. The lesion is made in the intermediolateral cell column
D. Results are optimal if the procedure is done bilaterally.
E. The percutaneous procedure gives excellent relief of pain to the C2 segment

830. The following is characteristic of trigeminal neuralgia:
A. Usually due to multiple sclerosis
B. Episodes may be aborted by certain antiepileptic or antispasticity medications.
C. Sensory loss is detected on the face.
D. Weak masseter muscle function.
E. Bursts of pain last 30-60 min.

831. Parsonage Turner syndrome is:
A. Also known as idiopathic brachial plexitis
B. Can be bilateral in 20% of patients
C. Associated with a 90% recovery rate within 3 years
D. All of the above
E. None of the above

832. Depletion of which neurotransmitter in the substantia nigra is associated with Parkinson's disease?
A. Acetylcholine
B. Epinephrine
C. Calcitonin gene-related peptide
D. Dopamine
E. Substance P

833. Nociceptive input from the stomach is transmitted through what nerve?
A. Greater splanchnic
B. Lesser splanchnic
C. Least splanchnic
D. Vagus nerve
E. Phrenic nerve
834. A thoracic epidural is placed at T10 after abdominal surgery. A test dose is given and the patient becomes numb above the incision for 2 hours. An epidural catheter is inserted and an infusion is started. After 24 hours, she develops abdominal pain over 30 minutes. Your next course of action is:
A. Notify surgeon
B. Give IV NSAIDs
C. Give IV morphine
D. Test the epidural
E. Apply TENS unit

835. The Triceps Reflex best tests for what nerve root?
A. C5
B. C6
C. C7
D. C8
E. None of the above

836. Dextrose is added to lidocaine, during a spinal anesthetic. Which position would most likely result in anesthesia of the sacral dermatomes?
A. Prone
B. Side-lying
C. Jack Knife
D. Sitting upright
E. Trendelenburg

837. Of the following DSM-IV psychiatric disorders, which is the most common in the chronic pain population?
A. Conversion Disorder
B. Somatization Disorder
C. Panic Disorder
D. Major Depression
E. Malingering

838. The true statements about electromyography (EMG) and nerve conduction velocity (NCV) are:
A. Electromyographic changes occur within 24 h of neural injury
B. NCV is more sensitive than EMG in the early stages of neural injury
C. Increased motor potential in muscle groups occurs with neural injury
D. Increased neural conduction velocity occurs with neural injury
E. Changes in neural conduction velocity take weeks to become apparent after neural injury

839. The corneal reflex tests the trigeminal nerve and:
A. Vagus nerve
B. Spinal accessory nerve
C. Facial nerve
D. Oculomotor nerve
E. None of the above

840. Shoulder shrug tests which nerve?
A. Vagus
B. Suprascapular Nerve
C. C5 Nerve Root

841. Which of the following statements regarding the superior hypogastric plexus block is not true?
A. It is most appropriate for pelvic pain of visceral origin
B. It is associated with few side effects
C. It must be performed with the assistance of fluoroscopy
D. It is most appropriate for upper abdominal pain
E. It must be performed at L5

842. A 67-year-old man with lung cancer presents with metacarpophalangeal joint pain. On physical examination, there is pain on moving his fingers and a spongy sensation when palpating the proximal aspects of the fingernails. CHOOSE ACCURATE DIAGNOSIS:
A. Reflex sympathetic dystrophy
B. Ankylosing spondylitis
C. Reiter syndrome
D. Hypertrophic osteoarthropathy
E. Charcot joint

843. A 42-year-old woman (5 ft, 3 in., 170 lb) complains of sudden onset of severe pain in the right upper abdomen “under the ribs” accompanied by sweating, nausea, and a feeling of imminent collapse. The pain lasts for about two hours and then persists as a dull ache. When seen several hours later, she has normal bowel sounds, is tender throughout the abdomen, especially in the right upper quadrant, and is faintly icteric. She has noticed her urine is darker than usual but has not passed stool recently. She recalls occasional episodes of “indigestion” referred to the right upper abdomen and radiating to the shoulder. This has occurred especially after eating fried foods or after eating a meal following a long period of fasting. She has no fever but is anxious and tachycardic. The tests available are a blood count and blood chemistry including liver enzymes, alkaline phosphatase, and bilirubin. She has a WBC of 10,000. Her cellular hepatic enzymes are: AST/SGOT = 52 (2-33) and ALT/SGPT = 70 (4 to 44), alkaline phosphatase = 300 (17 to 91), bilirubin = 6.3 (0.2 to 1.0). The most probable diagnosis is
A. Hepatitis A
B. Intercostal neuritis
C. Carcinoma of the head of the pancreas
D. Gallstone obstructing common bile duct
E. Biliary cirrhosis

844. Regarding plexopathies, which of the following is true?
A. Both the H-reflex and F-waves may be prolonged
B. The H-reflex and F-waves are usually normal
C. Fibrillations in paraspinal muscles do not rule in a plexopathy, but are suggestive of it
D. Current perception threshold testing is less expensive and more sensitive than EMG
E. Loss of an F-wave is meaningless because the action potential is impeded by a proximal lesion and therefore cannot be assessed with accuracy
845. A 41-year-old man was recently in a motor vehicle accident (MVA) where he was the driver. He states he was wearing his seat belt at the time of the accident. A day after the accident, he developed neck pain that has now continued for 10 days. He notices crunching on extension and lateral bending of the neck. On physical examination, the patient has no neurologic deficits. His neck has no areas of tenderness and there are no areas of spasm. He has normal lateral bend, extension, and flexion of the neck. Which of the following is the most likely diagnosis?
A. Ankylosing spondylitis
B. Osteoarthritis
C. Reiter syndrome
D. Whiplash
E. Wry neck

846. Of the following statements pertaining to post lumbar puncture headaches, which is least accurate? Choose one:
A. Age, female gender, body mass index, and history of recurrent headaches are major risk factors for PLPH.
B. 80% of the cases of PLPH occur within 48 hours of the procedure.
C. 30 cc’s of CSF taken will not induce a headache by volume loss and will be replaced within 90 minutes given that CSF is produced at a rate of 1cc/3 minutes or approximately 500 cc’s a day.
D. 30 cc’s of CSF taken will likely induce a headache by volume loss but will be replaced within 270 minutes given that CSF is produced at a rate of 1cc/9 minutes or approximately 150 cc’s a day.
E. Lying prone for 1 hour and drinking 24 ounces of water after a LP has been shown to decrease the incidence of PLPH.

847. Which of the following is most appropriate for the initial treatment of tension headache?
A. Acetaminophen
B. Amitriptyline
C. Gabapentin
D. Oxycodone
E. Tramadol

848. A 30-year old patient presents with foot pain. She was diagnosed with a calcaneal heel spur. Non-steroidal anti-inflammatory agents failed to provide her any significant relief. Appropriate treatment is:
A. Soft padding of the shoe
B. Local steroid injection
C. Strengthening exercises
D. Surgical excision of spur
E. Stretching exercises in combination with ultrasound

849. A patient with rectal cancer with infiltration develops a new onset of low back pain. He is on oxycodone and antidepressant therapy. For treatment of low back pain, the recommended addition is as follows:
A. Ibuprofen
B. Gabapentin
C. Mexiletine
D. Morphine
E. Transdermal Fentanyl

850. A 25-year-old woman is involved in a motor vehicle accident. Among her injuries is a lumbar vertebral body fracture. Which of the following most likely contributed to this injury?
A. Flexion
B. Extension
C. Torsion
D. Spondylolisthesis
E. Subluxation

851. The carpal bone that is most likely to dislocate anteriorly and cause a form of carpal tunnel syndrome is the
A. Capitate
B. Hamate
C. Lunate
D. Navicular
E. Scaphoid

852. A 35-year-old man has acute onset of low back pain, lower extremity weakness, and bladder dysfunction. He had a lumbar laminectomy two years ago. A myelogram shows disc herniation L4-5. The most appropriate management is
A. Bed rest
B. Administration of nonsteroidal anti-inflammatory agent
C. Epidural administration of a corticosteroid
D. Epidural administration of a local anesthetic
E. Surgical decompression

853. To perform a trigeminal ganglion block, the middle cranial fossa is entered through which cranial opening?
A. Foramen rotundum
B. Foramen lacerum
C. Foramen ovale
D. Jugular foramen
E. Foramen spinosum

854. Pinpoint pupils may be present in:
A. Pontine injuries
B. Amphetamine use
C. Mesial temporal sclerosis
D. All of the above
E. None of the above

855. An interscalene block is indicated for all of the following except
A. Closed reduction of a dislocated shoulder
B. Post-operative analgesia for rotator cuff repair
C. Repair of a torn biceps
d. Exploration of the antecubital fossa, lateral to the biceps tendon
E. Release of a Dupuytren’s contracture of the palmar fascia, overlying the hypothenar muscles
856. A herniated T-8 thoracic disk may cause which of these findings:
A. Paraparesis
B. Autonomic bladder
C. Bilateral Babinski signs
D. Absent abdominal reflexes
E. All of the above

857. The appropriate initial treatment for mild mandibular pain following oral surgery is
A. Nonsteroidal antiinflammatory drug
B. Mandibular nerve block
C. Acetaminophen
D. Oxycodone
E. Gabapentin

858. Migraine symptoms are most likely due to:
A. Vasoconstriction.
B. Epileptiform discharges.
C. Cerebral edema.
D. Decreased cerebral metabolism due to spreading cortical depression.
E. Vasodilatation

859. A 32-year-old man was admitted for neurologic evaluation of a gun-shot wound received five days previously. A 9-mm bullet had passed through both the medial and lateral heads of the gastrocnemius muscle. The bullet had not struck bone or significant arteries. Neurologic examination revealed losses of dorsiflexion and eversion of the left foot. The patient could not feel pinprick or touch on the dorsum of the left foot or anterolateral surface of the left leg. Which nerve was most likely involved in the injury?
A. Sciatic nerve
B. Femoral nerve
C. Sural nerve
D. Common peroneal nerve
E. Tibial nerve

860. A tumor in the infratemporal fossa may gain entrance to the orbit through which of the following?
A. The optic foramen
B. The ethmoidal sinuses
C. The pterygoid canal
D. The inferior orbital fissure
E. The superior orbital fissure

861. Which statement regarding cervical nerve roots is true:
A. The C7 spinal nerve exits through the C7-T1 foramen
B. The C2 spinal nerve exits through the C1-2 neuroforamen.
C. Sensory innervation to the occiput is supplied primarily by branches from C1
D. The greater occipital nerve originates from the ventral root of C2
E. The C6 and C7 spinal nerves are most commonly involved in cervical radiculopathy

862. A 29-year-old female with upper extremity complex regional pain syndrome undergoes a stellate ganglion block in your office pain clinic. She is otherwise healthy with normal body habitus and normal airway. She has been NPO for 12 hours. 20cc of 0.25% bupivacaine is injected incrementally over one minute with no other medication administered. 5 minutes after injection the patient complains of generalized weakness which progresses to complete unresponsiveness, apnea and hypotension over the ensuing several minutes. The following is the most likely diagnosis:
A. Overdose of bupivacaine
B. Total spinal anesthesia
C. Spinal cord infarction
D. Anaphylactic shock
E. Vertebral artery injection

863. Sustained clonus at the ankle is most consistent with:
A. Peripheral neuropathy
B. Polyradiculopathy
C. Myelopathy
D. Anterior horn cell disease
E. None of the above

864. A patient presents with right low back and hip pain following a motor vehicle accident several weeks ago. Pain is made substantially worse with internal rotation of the right lower extremity. Hip flexion and extension are not painful. MRI demonstrates an L4/5 disc herniation. The source of pain is most likely arises from which of the following structures?
A. Disc
B. Facet joint
C. Hip joint
D. Sacroiliac joint
E. Piriformis muscle

865. A college student presents with complain of pain in fingers with blanching and cyanosis of her fingertips in cold weather and numbness. She has a 6-month history of dysphagia and arthralgias. She does not smoke or take any medications. On physical examination, the skin of her hands appears to be taut and atrophic with a flexion deformity from the tight skin (sclerodactyly). The following is the most likely diagnosis:
A. Rheumatoid arthritis
B. Progressive systemic sclerosis
C. Dermatomyositis
D. Ulcerative colitis
E. Sarcoidosis

866. Which of the following is false with respect to tennis elbow?
A. Forearm flexors are typically involved
B. The involved muscles have tendinous attachments to the lateral epicondyle of the humerus
C. The backhand stroke may be impaired
D. Corrective action includes loosening tight racquet strings
E. Corrective action includes enlarging the racquet grip
867. A celiac plexus block is not indicated for:
A. Pancreatic cancer
B. Chronic pancreatitis
C. Sigmoid colon diverticulitis
D. Hepatic metastases
E. Chronic cholecystitis

868. Which of the following factors influence the spread of local anesthetic in the subarachnoid space the most?
A. Baricity
B. Barbotage
C. Anesthetic dose
D. Injection level
E. Injection speed

869. The most frequent work-related musculoskeletal disorder found in the upper extremity is:
A. Carpal tunnel syndrome
B. Tendopathy of the extensor carpi radialis brevis
c. Posterior interosseus nerve entrapment
D. Shoulder external impingement
E. Cubital tunnel Syndrome

870. A young adult reports that he has not been able to sleep for over two days and has been having strange reactions. These reactions are most apt to be caused by
A. Feelings of excessive tiredness
B. Increased levels of blood cortisol
C. Physiologic stress in response to sleep deprivation
D. Perceptual distortions
E. The effects of the rebound phenomenon

871. Appropriate workup for classic migraine includes:
A. Cranial MRI
B. Head CT
C. Fundoscopic examination
D. All of the above
E. None of the above

872. Maxillary nerve block is indicated for the diagnosis, treatment, or management of all of the following except:
A. Temporomandibular joint problems
B. Atypical facial pain
C. Surgical anesthesia for removal of the upper incisors
D. Trigeminal neuralgia
E. Infiltrating tumor of the maxillary sinus

873. For a glossopharyngeal nerve block, what structure must be identified on a lateral fluoroscopic view?
A. Ramus of the mandible
B. Condylar process
C. Coronoid process
D. Lateral pterygoid plate
E. Styloid process

874. In a patient with midthoracic back pain who reports tenderness to palpation over the T-6 vertebral body, the most likely diagnosis is:
A. Thoracic disk herniation
B. Metastatic neoplasm
C. Facet osteoarthropathy
D. Rheumatoid arthritis
E. Epidural hematoma

875. A “fake bad” profile is provided in scoring the:
A. Spielberger State-Trait Anxiety Inventory (STAI)
B. Minnesota Multiphasic Personality Inventory (MMPI)
C. Coping Strategies Questionnaire
D. Medical Outcomes Survey (MOS)
E. Sickness Impact Profile (SIP)

876. Understanding the complex interaction of a patient’s pain and mood is best accomplished by:
A. Obtaining family history of depression
B. Asking office staff to observe waiting room pain behavior
C. Having the patient complete the Michigan Pain States Inventory (MPSI)
D. Integrating medical and psychological data from a variety of sources
E. Performing a pain tolerance test in the laboratory

877. Which of the following statements about major depression is TRUE?
A. Thirty percent of individuals with a single episode of major depression develop bipolar disorder
B. The lifetime prevalence rates for adult men range from 3% to 9%.
C. Full recovery from major depression occurs in 25% of patients by 6 months
D. Relapse after a single episode is about 50%.
E. The average age of onset of unipolar major depression is 50 years

878. Which of the following statements about nystagmus are true? Choose one:
A. Attenuating nystagmus may be a medication side effect.
B. Immediate-onset nystagmus usually implicates inner ear pathology.
C. Delayed-onset nystagmus is a common cerebellar disease finding.
D. Nystagmus generally precedes a neuromuscular junction disorder such as myasthenia gravis.
E. A, B and C are correct

879. The most appropriate initial imaging modality for diagnosis of acute onset headache is
A. Magnetic resonance imaging
B. Computed tomography
C. Magnetic resonance angiography
D. Intravenous angiography
E. Duplex scanning

880. The 2004 International Headache Society’s revised criteria for chronic tension-type headache (TTH), requires frequency over time consistent with which one of the following:
A. 15 or more days per month over a minimum of 3 months
B. No more than 6 headache-free days in a 3 month period
C. No fewer than 2 days involvement per week for a minimum of 3 months
D. Between 1 and 14 days per month over a 3 month period
E. An average of 60 days per year for at least 60 months (5 years)

881. A supraclavicular brachial plexus block, blocks the following section of the plexus:
A. Roots
B. Trunks
C. Divisions
D. Cords
E. Branches

882. A 35-year old man presented with constant low back pain that radiated to the left or right upper buttock region with occasional radiation to the thigh and calf posteriorly with tingling sensation in the left heel. The symptoms started approximately a year ago when he lifted a heavy box which caused the gradual onset of low back pain at the time with increasing intensity in a week. His motor examination was grossly within normal limits. However, he had a positive left straight leg raising at 50°. There was decreased sensation to pin prick on the lateral side of the foot on the left side. The following MRI shows:
A. L4/5 disc herniation
B. L5/S1 disc herniation
C. Large osteophyte pressing on L5 nerve root
D. Large osteophyte pressing on L4 nerve root
E. Facet joint arthritis causing spinal stenosis

883. The acupuncture point located between the first and second metatarsal bones in the web is called
A. Lieh Chuch
B. Ho Ku
C. Chih Tse
D. Chien chen
E. None of the above

884. The following is not true:
A. MRI evidence of degenerative disc disease is necessary for consideration of spinal instrumentation
B. A patient complaining of mechanical back pain who has no evidence of instability is properly selected for decompression of a nerve root without stabilization.
C. SCS is an FDA approved therapy for many indications
D. The L4 disc is usually the level of disease in a L5 radiculopathy
E. An absent ankle reflex is indicative of a S1 radiculopathy

885. The anterior spinothalamic tract:
A. Is the primary target of a cordotomy
B. Primarily conveys proprioceptive afferent fibers
C. Primarily conveys small fiber afferents.
D. Conveys light touch.
E. Conveys temperature sensation

886. In Hirschsprung’s disease, neural crest cells fail to migrate to, or invade, the wall of the lower colon, resulting in a loss of peristalsis in that region and often fatal obstruction. Preganglionic neurons, which would innervate the absent intramural ganglia, originate in
A. The nucleus ambiguus
B. Cervical intermediolateral cell column
C. Sacral levels two to four of the spinal cord
D. The motor nucleus of the vagus nerve
E. The ventral horn at spinal levels T12, L1, L2

887. The DSM-IV classification of psychiatric disorders represent a major advance in psychopathology by
A. Detailing the treatments for various mental disorders
B. Predicting the outcome of less severe psychological problems
C. Evaluating the efficacy of various drug treatments
D. Assessing the potential etiology of abnormal behaviors
E. Defining by empirical criteria a wide variety of psychiatric disorders

888. Which of the following conditions mimics thalamic pain syndrome?
A. Wallenberg’s syndrome
B. Syringomyelia
C. Lateral medullary syndrome
D. Parietal cortical lesion
E. Lumbar Radioculopathy

889. Acute Herpes zoster infection (shingles) of 3 week’s duration is most appropriately treated by which of the following?
A. Topical lidocaine patch
B. Peripheral nerve blockade
C. Topical capsaicin cream
D. Spinal cord stimulation
E. Intrathecal steroids

890. A patient complains of worsening chronic headache, despite treatment with aspirin, butalbital, caffeine and ergotamine. MRI of the head was normal, but MRI of the neck is normal. Headache most likely is due to:
A. Migraine
B. Drug rebound
C. Cervical spondylosis
D. Pseudo-tumor cerebri
E. Vasodilation due to ergotamine

891. Sphincter detrusor dyssynergia may respond to transsacral stimulation at:
A. S1 nerve stimulation
B. S2 nerve stimulation
C. S3 nerve stimulation
D. S4 nerve stimulation
E. S5 nerve stimulation

892. Peripheral nerve stimulation for CRPS II:
A. Peripheral nerve stimulation is more effective than spinal cord stimulation
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B. Peripheral nerve stimulation and spinal cord stimulation together is better than either alone
C. Peripheral nerve stimulation should be used in mononeuropathy
D. Psychological assessment should be done to rule out contraindications
E. All of the above

893. Sumatriptan succinate is effective for the treatment of acute migraine headaches by acting as
A. An antagonist at BETA1 – and BETA2 – adrenergic receptors
B. A selective antagonist at histamine (H1) receptors
C. An inhibitor of prostacyclin synthase
D. An agonist at nicotinic receptors
E. A selective agonist at 5-hydroxytryptamine 1D (5-HT1D) receptors

894. Which of the following is not defined as a disc herniation?
A. Protrusion
B. Localized displacement of disc material beyond the confines of the disc space
C. Bulge
D. Extrusion
E. Intravertebral end plate disruption secondary to disc material

895. Pattern of limitation most frequently accompanying subacromial impingement
A. Glenohumeral abduction limits
B. Glenohumeral adduction limits
C. Glenohumeral external rotation limits
D. Glenohumeral internal rotation limits
E. Glenohumeral external and abduction limits

896. A family practice physician has referred a patient to you for low back pain. Diagnostic imaging shows spondylolysis at L5-S1 with a small disc bulge at the same level. There is no identifiable spondylolisthesis. The patient is a 25 year old woman with pain in the low back that rarely goes down the post thighs to mid-thigh level. It is worsened by her work as a waitress. On reviewing her CT scans and X-rays what would represent spondylolysis at the L5-S1 level.
A. Facet arthropathy at L5-S1.
B. Lumbar disc degeneration of L5-S1 disc
C. Slippage of the L5 vertebra over the sacrum.
D. Pars interarticularis defect at L5-S1.
E. Compression fracture of the L5.

897. Among combat veterans, the greatest risk for posttraumatic stress disorder is among those who
A. Were violent prior to service
B. Have a prior history of depression
C. Have coexisting sociopathy
D. Participated in violence towards noncombatants
E. Have a history of substance abuse

898. In general, modalities such as heat, electrical stimulation and ultrasound:
A. Should be used until the patient is cured of their pain.
B. Are the best method to treat patients with chronic pain.
C. When combined with injections are the only thing necessary to treat the majority of pain conditions.
D. Should be used to facilitate an active exercise program for a short course.
E. Should never be used following interventional techniques

899. A 36-year-old man presents with left hand weakness and atrophy of the first dorsal interosseous muscle. This may indicate damage to spinal roots
A. C5 and C6
B. C6 and C7
C. C7 and C8
D. C8 and T1
E. T1 and T2

900. A 49-year-old woman is brought to the emergency room after suddenly losing consciousness. Her husband states that the patient was in good health until 2 h ago, when she suddenly complained of a severe headache. After one episode of vomiting, the patient lost consciousness. The husband states that there were no seizure-like movements and no incontinence. The patient did not take any medications, smoke, drink, or use illicit drugs. On physical examination, the patient has a regular heart rate of 100/min, respiratory rate of 16/min, and blood pressure of 120/80 mmHg, and is afebrile. Heart and lung examinations are normal. On neurologic exam, the patient responds only to painful stimuli and her deep tendon reflexes are bilaterally equal. She has bilateral flexor plantar responses. She has neck stiffness and attempts to resist forward flexion. Which of the following is the most likely diagnosis?
A. Carotid artery thrombosis
B. Embolic infarction of the brain
C. Frontal lobe hemorrhage
D. Subarachnoid hemorrhage
E. Complicated migraine

901. During a C7 stellate ganglion block, 2 cc of bupivacaine with epinephrine were injected. The patient developed myoclonic activity and lost consciousness. The injection most likely was into the
A. Subdural space
B. Vertebral artery
C. Epidural vein
D. Subarachnoid space
E. Internal jugular vein

902. A 62-year-old man walks with his feet widely spaced; steps occur with each foot lifted abruptly and too high and brought down in a stamping manner. Choose correct description of gait:
A. Ataxic gait
B. Parkinsonian gait

ASiPP
C. Spastic hemiplegic gait
D. Steppage gait
E. Scissor gait

903. A 35-year-old woman with Complex Regional Pain Syndrome I of the right upper extremity, develops miosis, ptosis and enophthalmos after undergoing a stellate ganglion block. She does not notice a significant pain relief. No significant rise in skin temperature changes was recorded to the right upper extremity. What is the most likely cause?
A. Inadequate concentration of the local anesthetic
B. Intravascular injection
C. Subarachnoid block
D. Anomalous Kuntz nerves
E. Brachial plexus block

904. A 75-year-old female in congestive heart failure (CHF) is unable to climb a flight of stairs without experiencing shortness of breath. Digoxin is administered to improve cardiac muscle contractility. Within two weeks, she has marked improvement in her symptoms. What cellular action of digoxin accounts for this?
A. Inhibition of cyclic adenosine 5’-monophosphate (cAMP) synthesis
B. Inhibition of mitochondrial calcium (Ca2+) release
C. Inhibition of the sodium (Na+) pump
D. Inhibition of b-adrenergic stimulation
E. Inhibition of adenosine triphosphate (ATP) degradation

905. What of the following is not an indication for a glossopharyngeal nerve block?
A. Glossopharyngeal neuralgia
B. Atypical facial pain
C. Wisdom tooth extraction
D. Tonsillectomy
E. Pharyngeal cancer pain

906. The Multidimensional Pain Inventory (MPI):
A. Is a projective test
B. Assesses malingering
C. Yields depression and anxiety scores
D. Utilizes three profile types - Dysfunctional, Interpersonally Distressed and Adaptive Coper.
E. Contains 576 true-false questions

907. All of the following are true regarding uncontrolled postoperative pain except:
A. Decreased chest wall and diaphragmatic excursion
B. Increased myocardial oxygen consumption
C. Increased cardiac work
D. Decreased risk of thromboembolic complications
E. Decreased gastrointestinal motility

908. The preferred treatment of status epilepticus is intravenous administration of
A. Chlorpromazine
B. Diazepam
C. Succinylcholine
D. Tranylcypromine
E. Ethosuximide

909. Sympathetic fibers are carried to the sphenopalatine ganglion via what nerve?
A. Greater palatine nerve
B. Lesser palatine nerve
C. Deep petrosal nerve
D. Greater petrosal nerve
E. Maxillary nerve

910. A 30-year-old secretary who is a single mother with two preschool children has frequent symptoms of anxiety, tension, headaches, and insomnia. Which of the following behavioral interventions could be the most effective in relieving her symptoms?
A. Progressive muscle relaxation
B. Psychoanalytic psychotherapy
C. Hypnosis
D. Selective biofeedback
E. Interpersonal psychotherapy

911. A 44-year-old man presents with facial asymmetry. On physical examination, touching the cornea of either eye with a cotton swab results in blinking of only the left eye. The patient states that he feels the cotton swab touch in both eyes. Which of the following is the most likely diagnosis?
A. Left trigeminal palsy
B. Right trigeminal palsy
C. Right facial nerve palsy
D. Left facial nerve palsy
E. Left oculomotor nerve palsy

912. All of the following are contra-indications to ultrasound except:
A. An epiphyseal injury of a young athlete’s elbow.
B. An acute muscle tear.
C. A diabetic with peripheral neuropathy with a painful great toe.
D. A contracture of a hip joint.
E. A pregnant female with an abdominal strain.

913. A patient loses consciousness in your pain clinic after a procedure. Ventricular fibrillation is apparent on the cardiac monitor. The patient’s airway is being well managed. An IV line is in place. A defibrillator is at the bedside. A precordial thump has been administered and chest compressions are ongoing. The most appropriate next intervention is:
A. Intravenous vasopressin
B. Intravenous epinephrine
C. Intravenous lidocaine
D. Intravenous amiodarone
E. Stop chest compressions and cardiovert with 200 joules

914. A 49-year-old woman walks by moving her right leg forward by abduction and circumduction. Choose correct description of gait:
A. Ataxic gait
B. Parkinsonian gait
C. Spastic hemiplegic gait
D. Steppage gait
E. Scissor gait

915. In assessing the characteristic pain patient, the clinician must appreciate that they are often:
A. Emotionally debilitated and of low intellectual measure
B. Severely agitated and aggressive
C. Disabled, depressed and dependent
D. All of the above
E. None of the above

916. Mesencephalic tractotomy is indicated in patients who suffer from the pain of head and neck cancer.
A. If there is no preoperative neurologic deficit
B. If the neck pain does not come higher than the C5 segment
C. If the patient has a preoperative myelopathy
D. If the pain involves the lower face
E. Two of the above

917. Factitious disorder is motivated by:
A. Secondary gain
B. Assumption of the sick role
C. Financial reward
D. Evasion of responsibility
E. External incentive

918. Intervertebral disks have a tendency to herniate into the intervertebral foramen because the
A. Annulus fibrosus is attenuated in the posterolateral regions
B. Interspinous ligament reinforces the disks anteriorly and anterolaterally
C. Ligamentum flavum reinforces the intervertebral disks posteriorly
D. Lumbar intervertebral disks are thicker posteriorly than anterolaterally
E. Posterior longitudinal ligament is stronger and more complete posteriorly than posterolaterally

919. A 32-year-old previously healthy man is brought to the emergency room after having a seizure. He has no family history of seizure and denies alcohol use, illicit drug use, or trauma. A family member states that recently the patient has been complaining of a headache and has been acting bizarre, which is a change in his personality. Physical examination reveals a temperature of 100.9°F. Blood pressure and heart rate are normal. During examination, the patient has a partial complex seizure. CT scan of the head reveals hemorrhagic necrosis of the temporal lobes. Which of the following is the most likely diagnosis?
A. Lyme disease
B. Cysticercosis
C. Progressive multifocal leukoencephalopathy
D. Herpes encephalitis
E. Rabies

920. Four days after a left total hip arthroplasty, an obese 62-year-old woman complains of severe back pain in the region where the epidural was placed. Over the ensuing 48 hours, the back pain gradually worsens and a severe aching pain that radiates down the left leg to the knee develops. The most likely diagnosis is
A. Epidural abscess
B. Epidural hematoma
C. Anterior spinal artery syndrome
D. Arachnoiditis
E. Meralgia paresthetica

921. The condition in which the covering of the spinal cord, along with enclosed neural tissue, forms a saclike projection through a dorsal defect in the vertebral column is termed
A. Rachischisis
B. Anencephaly
C. Meningocele
D. Meningomyelocele
E. Hydrocephaly

922. Increased activity of the sympathetic nervous system causes
A. Penile erection
B. Pupillary constriction
C. Accommodation for near vision
D. Bronchiolar dilation
E. Gallbladder emptying

923. A patient presents to the emergency room 18 hours after recovering from a spinal anesthetic, in which 5% lidocaine was used. He complains of moderate to severe pain in the lower back, buttocks, and posterior thighs. The neurological and genito-urinary exams are normal. A lumbar spine MR is normal. What is this patient suffering with?
A. Cauda equina syndrome
B. Anterior spinal artery syndrome
C. Transient radicular irritation
D. Spontaneous intracranial hypotension
E. Epidural hematoma

924. A patient experienced a prolonged stay in one position during a recent surgery and postoperative recovery that resulted in compression of the common peroneal nerve against the fibular head. Which of the following motor deficits would be most likely to occur?
A. Loss of extension at the knee
B. Loss of planter flexion
C. Loss of flexion at the knee
D. Loss of eversion
E. Loss of medial rotation of the tibia
925. A 22-year-old woman presents with the chief complaint of diplopia for several weeks. She admits to occasional vertigo and ataxia. Six months ago, she had urinary incontinence for 1 month. Examination of the eyes reveals nystagmus, and funduscopic exam reveals swelling of the optic nerve (papillitis). The patient has increased muscle tone of the lower extremities and is hyperreflexic. She has bilateral extensor plantar reflexes and loss of position sense. Which of the following is the most likely diagnosis?
A. Multiple sclerosis
B. Friedreich’s ataxia
C. Acute transverse myelitis
D. Brown-Sequard syndrome
E. Syringomyelia

932. A 70-year-old patient presents with a history of increasing pain in the back, buttocks and leg. Pain in the leg worsens with standing and walking. Pain is relieved on bending forward. No neurological deficits were identified on physical examination. Acetaminophen gives minimal relief. Your next treatment would be administration of:
A. Opioids
B. Epidural steroid injections
C. Non-steroidal anti-inflammatory drugs
D. Facet joint injections
E. Transcutaneous electrical stimulation

936. What is the co-morbid condition of body dysmorphic disorder?
A. Depression
B. Multiple recurrent somatic complaints without medical findings
C. Delusion
D. “La belle indifference”
E. Fear of having a serious illness despite adequate medical evaluation
938. A 60-year-old man was involved in a motor vehicle accident and suffered multiple long bone fractures and a severe injury to the pelvis. Two days following admission to the hospital, he develops fever, tachypnea, and tachycardia. The rest of his physical examination reveals chest, neck, and conjunctival petechiae. Respiratory exam reveals scattered crackles bilaterally but no wheezes. Pulse oximetry reveals a hemoglobin saturation of 80% on room air. Which of the following is the most likely diagnosis?
A. Pneumothorax
B. Pneumonia
C. Exacerbation of chronic obstructive pulmonary disease (COPD)
D. Anemia from traumatic blood loss
E. Fat embolism syndrome

939. Following cholecystectomy, a patient is receiving bupivacaine by intrapleural infusion at 8mL/hr. The patient is noted to have a Horner’s syndrome and inadequate pain relief. The next step in managing this patient is to:
A. Increase the rate of bupivacaine infusion
B. Remove and reinsert the catheter
C. Obtain neurology consultation
D. Obtain an MRI of the head
E. Perform a chest radiograph

940. An 18-year-old gymnast heard a popping sound in her left knee while practicing for the Olympic Games. Her knee immediately became swollen and painful. On physical examination, it is obvious that the left knee has an effusion. The anterior drawer test and Lachman test are positive. McMurray test is negative. Which of the following is the most likely diagnosis?
A. Anterior cruciate ligament tear
B. Posterior cruciate ligament tear
C. Torn medial meniscus
D. Torn lateral meniscus
E. Popliteal cyst

941. Patients with low back pain have been found to have:
A. Normal levels of aerobic fitness compared to normal controls.
B. An inability to improve their aerobic capacity.
C. Protection against low back pain at work after a period of aerobic training.
D. Spine problems that would prohibit most forms of aerobic exercise.
E. Lumbar disc herniation in 90% of cases

942. The following statement is false regarding local anesthetic toxicity:
A. Hyperventilation of a patient with a suspected overdose of local anesthetic will make seizures less likely.
B. Lidocaine overdose causes seizures before cardiac depression.
C. Toxic dose for direct intravascular injection of lidocaine is 300mg without epinephrine and 500mg when epinephrine is added.
D. Intravenous benzodiazepines are recommended to treat local anesthetic-induced seizures
E. Cardiac arrest from bupivacaine overdose is exceedingly difficult to treat and prolonged resuscitation with large doses of epinephrine may be required.

943. A patient presents with acute low back and lower extremity pain. Motor examination showed weakness with foot inversion. There was sensory deficit on the medial aspect of the leg. The most likely diagnosis is:
A. L3/4 disc herniation with L4 nerve root involvement
B. L5 nerve root involvement with L4/5 disc herniation
C. S1 nerve root involvement with L5/S1 disc herniation
D. L3 nerve root involvement with L2/3 disc herniation
E. L4/5 disc herniation with S1 nerve root involvement

944. The daughter of a 65-year-old man describes her father as having changed from an active, vivacious, caring person to one who occasionally has trouble learning new facts, has very little motivation to do any activity, and rarely expresses feelings or emotions for his grandchildren whom he has adored. The area of the brain most apt to be involved in this type of behavior change is the
A. Hypothalamus
B. Reticular activating system
C. Heteromodal association areas
D. Limbic system
E. Unimodal association areas

945. A 46-year-old woman has a 1-month history of headache. She has no past medical history of headache and no family history of headache. She does not use illicit drugs, drink alcohol, or smoke cigarettes. Physical examination reveals alexia, agraphia, acalculia, right-left confusion, and linger agnosia. An MRI of the brain with gadolinium is most likely to show which of the following?
A. Frontal lobe lesion
B. Parietal lobe lesion
C. Temporal lobe lesion
D. Occipital lobe lesion
E. Cerebellar lesion

946. Clinical findings due to S-1 radiculopathy include:
A. Absent ankle (Achilles) reflex
B. Weakness of foot dorsiflexion
C. Neurogenic bladder
D. Positive unilateral Babinski sign
E. All of the above

947. For diagnostic lumbar sympathetic block commonest sites include:
A. L1-L2
B. L2-L3
C. L3-L4
D. L4-L5
E. L5-S1
948. What is transmitted in the tarsal tunnel?
A. Anterior tibial tendon  
B. Posterior tibial nerve  
C. Flexor hallucis longus tendon  
D. Posterior tibial tendon  
E. Flexor digitorum longus tendon

949. A 23-year-old woman complains of periodic, throbbing, right-sided headaches accompanied by nausea and vomiting. On physical examination during the time of headache, the patient demonstrates a right oculomotor nerve palsy. MRI is normal. Choose correct type of headache:
A. Complicated migraine  
B. Basilar migraine  
C. Classic migraine  
D. Common migraine  
E. Temporal arteritis

950. A 24-year-old woman has a 2-year history of recurrent right-sided headaches that are throbbing in nature and are preceded by 30 min of scintillating scotomas and fortifications. Choose correct type of headache:
A. Complicated migraine  
B. Basilar migraine  
C. Classic migraine  
D. Common migraine  
E. Temporal arteritis

951. A long-distance runner develops foot pain with exercise. CHOOSE CORRECT DIAGNOSIS:
A. Hammer toe  
B. March fracture  
C. Genu valgum  
D. Genu varum  
E. Bunion

952. Patients with a strong sense of an external locus of control of health will be more apt to respond to inpatient treatment in the following way:
A. They delegate control of their health to their doctor or significant other  
B. They can be relied on to follow treatment orders when they are discharged for outpatient follow-up  
C. They respond poorly and less comfortably to inpatient care  
D. They prefer to make as many decisions about their care as possible  
E. They prefer to maximize their own decision making about their own health care

953. A young woman has a diagnosis of irritable bowel syndrome. She has a constitutional predisposition to respond physiologically to a situation in a particular way, has inadequate homeostatic restraints, and develops symptoms when exposed to activating situations. This etiological sequence in a psychophysiologic disorder follows
A. Specific-attitudes theory  
B. Diathesis-stress model  
C. Weak organ/system theory  
D. Individual response stereotype  
E. Specific-response pattern model

954. Which of the following lie in the carpal tunnel?
A. Transverse carpal ligament  
B. Radial artery  
C. Flexor carpi radialis  
D. Flexor pollicis longus  
E. Palmar branch of median nerve

955. Facet joint degeneration (osteoarthropathy) results from:
A. Mechanical load and stress resulting from disk space narrowing  
B. Lumbar stenosis  
C. Spine instability  
D. Paget disease  
E. All of the above

956. If the patient has low back and hip pain and the pain can be exacerbated by external hip rotation, the most likely source of the pain is:
A. L-4 radiculopathy  
B. Sacro-iliac joint  
C. Hip joint pathology  
D. Lateral femoral cutaneous neuropathy  
E. None of the above

957. Which represents a diagnostic “red flag” when assessing the patient with spine pain and/or sciatica?
A. Periodic “on-off” periods of episodic pain  
B. Pain extending completely to the foot  
C. Progressive neurologic signs and deficits  
D. All of the above  
E. None of the above

958. Erb’s Palsy results in:
A. Hypoesthesia in the C5 dermatome  
B. Paralysis of scapular muscles  
C. Hypoesthesia in the C6 dermatome  
D. All of the above  
E. None of the above

959. A 31-year-old man develops left ankle pain after stepping off a curb. He treated the injury with ice overnight but the next day cannot walk due to the pain. On examination of the ankle, you notice that it is swollen and ecchymotic. The anterior and lateral aspects of the ankle are tender to palpation. Inversion of the ankle is painful. Which of the following is the most likely diagnosis?
A. Ankle sprain  
B. Rupture of the Achilles tendon  
C. Metatarsal stress fracture  
D. Plantar fasciitis  
E. Tarsal tunnel syndrome
960. Which of the following is true regarding anxiety disorders and their relationship to pain?
A. Panic attacks are initiated by fear of movement (kinesiophobia).
B. Agoraphobia is frequently experienced by patients with pain for > 6 months.
C. Patients in pain are often depressed than they are anxious and worried.
D. 80% of Vietnam vets with PTSD report pain.
E. Chronic pain patient rarely suffer with anxiety.

961. A 60-year old woman presents with a sharp, electric shock like, intermittent pain on the left side of her face. It is mostly over the cheek and her jaw. She has pain free intervals between attacks. She is unable to put on any makeup because the slightest touch of a brush sets off her pain. All of the following would be an appropriate initial medication EXCEPT:
A. Baclofen
B. Carbamazepine
C. Lamotrigine
D. Carisoprodol
E. Lidocaine 5% patch

962. Prophylactic medications for migraine are all EXCEPT:
A. Amitriptyline
B. Topiramate
C. Verapamil
D. Isometheptene mucate
E. Atenolol

963. A patient has had an implanted intrathecal infusion pump for post-laminectomy syndrome for the past 3 years. He has had relatively good pain control with a combination infusion of morphine, bupivacaine, and baclofen. You are asked to evaluate him in the emergency room for increasing low back pain associated with new onset of right leg pain and right leg weakness. Physical examination reveals positive right straight leg raising with loss of right Achilles reflex. Plain x-ray has identified the titanium catheter tip marker at the T8 level in the ventral intrathecal space. The following statement is false:
A. Most patients who are diagnosed with catheter tip granuloma present with gradual loss of pain control associated with gradual onset of lower extremity neurological deficits evolving over weeks and months.
B. When catheter tip granuloma is diagnosed, surgical removal of the catheter and pump is the treatment of choice.
C. MRI with and without gadolinium enhancement is the imaging study of choice to assess catheter tip granuloma.
D. Baclofen when used alone in the pump for spasticity management has not been implicated in catheter tip granuloma.
E. Right lumbar radiculopathy is a much likelier diagnosis than catheter tip granuloma in this patient.

964. A patient involved in a work related injury approximately 2 weeks ago complains of intractable low back and bilateral lower extremity pain. On examination, the patient presents with non-physiological signs, which included superficial tenderness and positive axial loading. These findings indicate:
A. Somatization disorder
B. Malingering
C. Conversion disorder
D. Disc herniation
E. Fibromyalgia

965. Examination of a patient’s visual fields reveals complete blindness in the left eye. Ophthalmoscopic examination is normal. Which of the following lesions is most likely causing this abnormality?
A. A lesion between the optic chiasm and the lateral geniculate body
B. A lesion between the retina and the optic chiasm
C. A lesion between the lateral geniculate body and the visual cortex
D. A lesion at the medial longitudinal fasciculus
E. A lesion of one occipital lobe

966. Compression of the L4 nerve root will result in all of the following findings except:
A. Pain in the low back, anterior thigh, and sometimes medial aspect of the lower leg.
B. Numbness in the medial aspect of the lower leg
C. Weakness in the quadriceps and sometimes tibialis anterior
D. Diminished ankle jerk reflex
E. Positive straight leg raise

967. A patient with tennis elbow has been refractory to conservative drug therapy. As a next step, you would like to splint the elbow. Your instructions for splinting are as follows:
A. EF 90°  WE15°
B. EF 50°  WF20°
C. EF 70°  WF25°
D. EF 10°  WE30°
E. EF 60° WE30°

968. Extensive cord infarction caused by foraminal injection would most likely result from injection of particulate steroid directly into which of the following arteries:
A. Posterior radicular artery
B. Anterior radicular artery
C. Anterior segmental medullary artery
D. Anterior spinal artery
E. Posterior spinal artery

969. A person with which of the following mental disorders is most apt to seek medical help?
A. Major depressive disorder
B. Bipolar depressive disorder
C. Dysthymic disorder
D. Anxiety disorder
E. Obsessive-compulsive disorder
970. Patients who have somatization disorder are diagnosed on the basis of their
A. Having unexplained symptoms that persist after treat-
B. Experiencing symptoms in multiple organ systems
C. Having a history of past and present illnesses that have not responded to self-treatment
D. Having a specific number of medically unexplained symptoms
E. Demonstrating positive test results for several chronic illnesses at the same time

971. A 55-year old male presents himself with sudden pain and loss of function of the right shoulder five days ago. Symptoms started after intense activity. The patient was holding the shoulder away from the body in 30° to 40° adduction. The pain was presented anteriorly. There was no history of recent injury. Aspirin helped his pain temporarily. X-rays were normal. The most likely diagnosis is:
A. Subacromial bursitis
B. Subcoracoid bursitis
C. Calcific tendonitis
D. Acromioclavicular joint arthritis
E. Branchial neuritis

972. The CAGE questionnaire is used in case of
A. Mental retardation
B. Bipolar disorder
C. Major depression
D. Opioid abuse
E. Alcohol abuse

973. Decreased sensation from the nipple line inferiorly would most likely suggest a lesion at:
A. T1
B. T2
C. T3
D. T4
E. T5

974. A college student has a headache history of 3 months. Headache is bilateral, constricting with nausea, but no vomiting. Physical and neurological exams are normal. The drug of choice is:
A. Acetaminophen
B. Oxycodone
C. Gabapentin
D. Amitriptyline
E. Sumatriptan

975. A patient presents with pain and paresthesia in the left leg. The distribution of the pain-running down the medial aspect of the leg and the medial side of the foot and including the great toe-is suggestive of a herniated intervertebral disk. The most likely location of herniation is:
A. L3-L4 intervertebral disk
B. L4-L5 intervertebral disk
C. L5-S1 intervertebral disk
D. S1-S2 intervertebral disk
E. Insufficient data to determine

976. A 30-year-old obese woman presents with a 2-month history of a nonthrobbing headache that is constant and dull in nature. The headache is worsened with bending over or sneezing and on awakening in the morning. The patient also complains of blurred vision and occasional diplopia. Funduscopic examination reveals blurring of the optic discs bilaterally and no other neurologic deficit. Which of the following is the most likely diagnosis?
A. Infratentorial brain tumor
B. Pseudo tumor cerebri
C. Supratentorial brain tumor
D. Pituitary adenoma
E. Metastatic brain tumor

977. An aphasia is most likely to be associated with a lesion of
A. The hippocampus
B. The temporal lobe
C. The parietal lobe
D. The limbic system
E. The reticular activating system

978. A 36-year-old male has been experiencing intense pressure to be more productive at work. This has resulted in his becoming extremely anxious, which makes it very difficult for him to function effectively. He wishes to keep his job. Physical examination and blood chemistries are normal. He is given diazepam, which diminishes his anxiety and allows him to concentrate on his work. What is the mechanism of action of diazepam?
A. It directly opens the Cl⁻ channel of the GABA receptor
B. It increases the frequency of the Cl⁻ channel of the GABA receptor
C. It prolongs the duration of opening of the Cl⁻ channel of the GABA receptor
D. It simulates k receptors
E. It simulates m receptors

979. A 37-year-old woman who works as a computer data analyst presents with intermittent numbness and tingling of her right thumb, middle finger, and index finger. The sensation awakens her from sleep and is worse when she is knitting or driving. She denies back, neck, arm, or shoulder pain. There is no history of trauma. On physical examination, there is atrophy and weakness of the muscles of abduction of the right thumb. Flexion of the wrist or percussion of the wrist intensifies the tingling sensation. Which of the following is the most likely diagnosis?
A. Wristdrop
B. Ulnar neuropathy
C. Erb-Duchenne palsy
D. Klumpke-Dejerine palsy
E. Carpal tunnel syndrome
980. An elderly woman presents with persistent and prolonged thoracic pain after a herpes zoster infection. Which of the treatments below would be the LEAST efficacious in the treatment of her pain?
A. Topical capsaicin ointment
B. Oral clonidine
C. Topical lidocaine patch
D. Oral amitriptyline
E. Transcutaneous electrical nerve stimulation

981. Complex regional pain syndrome type II (causalgia) is differentiated from complex regional pain syndrome type I (reflex sympathetic dystrophy) by knowledge of its
A. Etiology
B. Rapidity of onset
C. Type of symptoms
D. Affected body region
E. Chronicity

982. A patient presents with acute onset of pain which started when he was stepping off a curb located over hip and buttock area which is referred to groin and lower extremity. Physical examination showed no leg length discrepancy but pain over superior iliac spine. The most likely diagnosis is:
A. Lumbar facet joint pain
B. Osteoarthritis of hip
C. Lumbar radiculopathy
D. SI joint pain
E. Trochanteric bursitis

983. In traditional psychoanalysts, transference is the process wherein:
A. Psychic energy, or libido, is transferred from the id to the ego and superego
B. A patient invests the analyst with attitudes and feelings derived from vital earlier associations
C. Certain psychological symptoms seemingly defer to new symptoms that frequently are more accessible to analysis
D. Early object choices are gradually decathected
E. Latent dream content is transformed into manifest content

984. The therapeutic action of b-adrenergic receptor blockers such as propranolol in angina pectoris is believed to be primarily the result of
A. Reduced production of catecholamines
B. Dilation of the coronary vasculature
C. Decreased requirement for myocardial oxygen
D. Increased peripheral resistance
E. Increased sensitivity to catecholamines

985. True statements with worker’s compensation coverage are as follows:
A. State-mandated worker’s compensation programs also cover all types of federal employees.
B. Difficult cases are automatically settled after 12 months.
C. Self-insured employers that do not subscribe to state laws are foolproof from litigation
D. Self-insured employers that subscribe to state laws and administer their own benefits are very rigid and do not accommodate injured workers at light duty positions.
E. Inherent problems with worker’s compensation system include poor understanding of the cause of pain, particularly in the absence of definitive diagnostic tests resulting in unsuccessful return to work and ineffective case management, etc.

986. A 39-year-old man presents with progressive weakness of his arms and legs. He noticed difficulty in performing tasks such as buttoning up his shirt several months ago, and his symptoms have continued to worsen. On physical examination, cranial nerve and sensory findings are normal. Severe atrophy and fasciculations are seen in the legs, arms, and tongue. The patient has a spastic muscle tone, hyperactive reflexes, and bilateral extensor plantar reflexes. Which of the following is the most likely diagnosis?
A. Werdnig-Hoffmann disease
B. Multiple sclerosis
C. Pott’s disease
D. Amyotrophic lateral sclerosis
E. Todd’s paralysis

987. The catheter location for continuous infusion for post-op pain relief for lower abdominal surgery should be
A. T2-8
B. T4-L1
C. T10 - L3
D. T12 - L3
E. L1 - L3

988. A 35-year-old woman falls 12 ft off a ladder and fractures her c-spine, causing damage at the C4 level. She is initially a flaccid quadriplegic with areflexia. This areflexia and flaccidity usually evolve into hyperreflexia and spasticity within
A. 2 to 4 months
B. 1 to 2 months
C. 3 days to 3 weeks
D. 1 to 3 h
E. 5 to 25 min

989. Epidural use of which of the following opioids would result in the greatest incidence of delayed respiratory depression?
A. Sufentanyl
B. Fentanyl
C. Morphine sulfate
D. Hydromorphone
E. Meperidine

990. A celiac-plexus block would not effectively treat pain resulting from a malignancy involving the following organs:
A. Urere
B. Adrenal gland
C. Stomach
D. Pancreas
E. Gallbladder
991. Bilateral, compared to unilateral, surgical lumbar sympathectomies pose the unique risk:
   A. Erectile dysfunction in men
   B. Ejaculatory dysfunction in men
   C. Genitofemoral neuralgia
   D. Spinal cord infarction
   E. Damage to the kidney or ureter

992. In which of the following would you consider performing a spinal nerve denervation?
   A. Lumbar facet arthropathy
   B. Failed back surgery syndrome
   C. Severe spasticity and limb pain due to multiple sclerosis
   D. Intercostal neuralgia
   E. Sciatic nerve transaction

993. Which of the following is among the most useful procedures for the relief of unilateral cancer pain below the C5 dermatome?
   A. Midline myelotomy
   B. Lissauer tractotomy
   C. Percutaneous C1-2 radiofrequency unilateral cordotomy
   D. Post central gyrectomy
   E. Bilateral high cervical cordotomy performed at the same time

994. Which of the following would not alter one’s decision to proceed with occipital neurectomy?
   A. Xrays showing spondylotic changes at C2 and C3
   B. History of brain tumor removal
   C. Positive response of occipital nerve blocks
   D. An MRI showing cerebellar descent into the spinal canal and a syrinx
   E. New onset posterior headache that is aggravated by coughing and is associated with vomiting

995. Which of the following is the best indication for the intraventricular infusion of morphine?
   A. Migraine Headaches
   B. Meningitis
   C. Failed back surgery syndrome
   D. Oropharyngeal carcinoma
   E. Diabetic peripheral neuropathy

996. Proper patient positioning for a subarachnoid alcohol block is:
   A. Painful side up with the patient tilted posteriorly 45°
   B. Painful side down with the patient tilted posteriorly 45°
   C. Painful side up with the patient tilted anteriorly 45°
   D. Painful side down with the patient tilted anteriorly 45°
   E. Painful side up with no tilt.

997. Pars Interarticularis defects are effectively diagnosed by:
   A. Ultrasound
   B. CT
   C. Plain radiographs
   D. Upper GI series
   E. MR

998. An example of secondary gain is:
   A. Pain behavior
   B. Anxiety
   C. Unconscious motivation
   D. Projection
   E. Work avoidance

999. You are serving as a military physician in a battle zone overseas. As a pain expert you are expected to provide pain relief to wounded soldiers at a military hospital. This includes medication and nerve blockade pain relief. An otherwise healthy 23 year old male soldier (weight 85 kg) with a severe shrapnel injury to the right hand is due to be evacuated by airplane for definitive surgical care at a large military hospital outside the battle zone. The flight will take 8 to 10 hours. The patient is stable now and all bleeding stopped. His Hgb and Hct are within normal range and his intravascular volume status is normal. You have been asked to provide brachial plexus anesthesia to provide analgesia for the flight as the soldier has already received large doses of intravenous morphine without adequate relief. You have vials of bupivacaine 0.5% (with epinephrine) and preservative-free saline plus appropriate needles and equipment to perform the block safely. What is the maximum dose of epinephrine-containing bupivacaine (mg) you can give this soldier for his brachial plexus block?
   A. 50 mg.
   B. 100 mg.
   C. 225 mg
   D. 350 mg.
   E. 500 mg.

1000. The following contrast in recommended in interventional techniques
   A. Hypaque
   B. Renographin
   C. Non-ionized water soluble contrast
   D. Ionized water soluble contrast
   E. Ionized non water soluble contrast

1001. All of the following psychiatric disorders are diagnosed more often in women than in men. The most frequently diagnosed disorder in women is
   A. Depression
   B. Obsessive-compulsive disorders
   C. Anxiety disorders
   D. Bulimia
   E. Anorexia nervosa

1002. Which of the following negative emotional states or conditions most commonly precedes relapse in the treatment of addictive behaviors?
   A. Stress
   B. Depression
   C. Anxiety
   D. Anger
   E. Frustration
1003. According to psychoanalytic theory, which of the following statements about the development of the superego is true?

A. It is present at birth  
B. It begins to develop during the first two years of life  
C. It begins to develop during the fifth or sixth year of life  
D. It begins to develop during puberty  
E. It begins to develop in late adolescence

1004. In a patient with spinal stenosis at L5/S1 levels with history of low back and lower extremity pain, the likely electrodiagnostic findings are as follows:

A. Reduced amplitude of H-have response  
B. Increased amplitude of the somatosensory evoked response  
C. Normal F-wave response  
D. Reduced conduction velocity of the genitofemoral nerve  
E. Fibrillation in tibialis anterior

1005. When testing a patient's extraocular muscle movements, you detect that the right eye cannot adduct past the midline. However, when you move a fingertip toward the patient's nose, convergence does occur. Which of the following is the most likely diagnosis?

A. Paralysis of cranial nerve VI  
B. Paralysis of cranial nerve III  
C. Internuclear ophthalmoplegia  
D. Retrobulbar optic neuritis  
E. Paralysis of cranial nerve II

1006. A 49-year-old man presents with painful, recurring episodes of swelling in his left great toe. He takes 25 mg of hydrochlorothiazide daily for blood pressure control but otherwise is in good health. On physical examination, the patient is afebrile but his great toe is warm, swollen, erythematous, and exquisitely tender to palpation. He has several subcutaneous nodules in his pinna. The following is the most likely diagnosis:

A. Calcium pyrophosphate dihydrate deposition disease  
B. Calcium oxalate deposition disease  
C. Monosodium urate deposition disease  
D. Calcium phosphate deposition disease  
E. Osteoarthritis of the great toe

1007. You were performing a stellate ganglion block at C6. You withdrew the needle 0.2 cm after inserting the needle to a depth of 1.4 cm. You were unable to inject due to resistance and pain. The tip of the needle is most likely located within the

A. Periosteum  
B. Longus colli  
C. Vertebral artery  
D. Intervertebral disc  
E. Subarachnoid space

1008. An elderly patient presents with a complaint of pain in the distribution of the trigeminal nerve. The patient has no other medical problems except a history of congestive heart failure for which he takes digoxin and thiazide.

In addition to his chief complaint, the patient over the last 72 hours has complained of dysesthesia in the feet, difficulty with vision, and emesis on 3 or 4 occasions. The most appropriate step at this time would be

A. Trigeminal nerve block with bupivacaine  
B. Obtain neurologic workup for multiple sclerosis  
C. Administration of fentanyl and ondansetron  
D. Initiate therapy with carbamazepine  
E. Obtain a digoxin level

1009. A 31-year-old man complains of daily throbbing headaches for the last 2 weeks. He has approximately eight episodes per day, each lasting 20 min. The headaches are localized to the left periorbital area and are accompanied by tearing of the left eye, left ptosis, rhinorrhea, and left facial redness. The patient remembers having a similar problem 2 years ago that lasted for 3 weeks. He did not seek medical help at that time. The patient feels that the headaches are often precipitated by drinking a glass of wine. Which of the following is the most likely diagnosis?

A. Migraine headache  
B. Cluster headache  
C. Tension headache  
D. Trigeminal neuralgia  
E. Sinusitis

1010. If resisted shoulder external rotation is the MOST painful procedure during the shoulder basic functional examination, which tendon insertion is most likely the pain generator?

A. Supraspinatus  
B. Infraspinatus  
C. Subscapularis  
D. Deltoid  
E. Biceps

1011. A middle aged woman presents with a one year history of pain and morning stiffness accompanied by swelling of her wrists and the proximal interphalangeal joints of both hands. She also has knee pain and swelling of knee joints. Physical examination reveals synovial tenderness and swelling of her knees, wrists, and proximal interphalangeal joints. She has subcutaneous nodules in the extensor area of her right forearm. The right knee has a positive bulge sign consistent with an effusion. The right knee has a positive bulge sign consistent with an effusion. The most likely diagnosis is:

A. Osteoarthritis  
B. Rheumatoid arthritis  
C. Septic arthritis  
D. Chondrocalcinosis  
E. Scleroderma

1012. The most important role of the gamma motoneurons is to

A. Stimulate skeletal muscle fibers to contract  
B. Maintain afferent activity during contraction of muscle  
C. Generate activity in Ia afferent fibers  
D. Detect the length of resting skeletal muscle  
E. Prevent muscles from producing too much force
1013. Paraffin Wax is most helpful in which of the following conditions:
A. Following an acute burn injury.
B. Joint pain of the hands from osteoarthritis.
C. Carpal tunnel syndrome.
D. An acute hand fracture.
E. Ankle Strain

1014. McKenzie exercises:
A. Would include repetitive extension even if radicular symptoms are increased.
B. Stresses "centralization" of back pain symptoms.
C. Is most helpful in chronic nonorganic low back pain.
D. Is contra-indicated in acute disc herniations.
E. Would stress on flexion exercises

Directions: Each question below contains four suggested responses of which one or more is correct. Select
A if 1, 2 and 3 are correct
B if 1 and 3 are correct
C if 2 and 4 are correct
D if 4 is correct
E if All (1, 2, 3 and 4) are correct

1015. Which of the following actions (or lack thereof) could lead to severe complications, put the patient into a persistent vegetative state or prove fatal in the case of certain intracranial infections?
1. Failure to consider subdural empyema in the face of classic signs and symptoms, failing in the meantime to get the necessary neurosurgical consultation.
2. Delaying the L.P and / or wide spectrum antibiotics when imaging studies are delayed or unavailable having been requested to rule in or out a supratentorial mass that could, if present, lead to uncal herniation via CSF withdrawal by lumbar puncture.
3. Failure to use IV acyclovir at the same time as other antibiotics since Herpes simplex is the only directly treatable life threatening viral infection of the brain parenchyma, the diagnosis of which may take some time.
4. Failing to check for Brudzinski and Kernig signs when doing the neurologic evaluation following a quick and incomplete history.

1016. Regarding headaches associated with tumors, which of the following are consistent with clinical experience?
1. Slow growing tumors and those that compress the brain from outside are more likely to present with seizures than with headache.
2. Infratentorial tumors are more likely to present with headache than supratentorial tumors.
3. 90% of childhood tumors will cause headache at some point while the corresponding number in adults is 60%.
4. Supratentorial tumors tend to refer pain anteriorly to the frontotemporal region

1017. Which of the following are complications of a celiac/splanchnic block:
1. Diarrhea
2. Pneumothorax
3. Hypotension
4. Paraplegia

1018. Component/s of a Horner’s Syndrome is/are:
1. Mydriasis
2. Exophthalmus
3. Facial hyperhidrosis
4. Ptosis

1019. Inflammatory arthritis and NOT osteoarthritis can involve which of the following joints?
1. Metacarpalpalangeal (MCP) joints
2. Base of the thumbs (carpometacarpal joints)
3. Wrists
4. Knees

1020. A 45 year old male lawyer with persistent midback pain has not responded to medications, physical therapy, or thoracic facet blocks. He asks if acupuncture is an option. The following are accurate about acupuncture:
1. Acupuncture is a counterirritant therapy that works by "hyperstimulation analgesia."
2. The analgesic effect of acupuncture can be reversed by naloxone.
3. Acupuncture is an invasive procedure and has been associated with significant complications
4. Alternative therapies such as acupuncture and herbal remedies are rarely used in Western societies such as the United States or the United Kingdom

1021. With audio amplification, a ‘dive bomber’ sound is characteristic of which phenomenon?
1. A post synaptic, decremental response-generating condition such as myesthenia gravis
2. Myokymia
3. Pronged but attenuating fibrillation potentials
4. Myotonia

1022. Which of the following statements is most accurate concerning our current understanding of medication overuse headache (MOH), formerly referred to as analgesic rebound headache syndrome? Pick one of the following.
1. Medication overuse headache is likely to occur over time when short acting pain relieving medications or compounds are, on average, used more frequently than two days a week to relieve headache.
2. Long acting preparations of opioid analgesics do not generally result in MOH even when used daily over years in the control of headache or other pain.
3. Prophylaxis of headache will fail in the face of excessive (too frequent) use of short acting abortive medication over time no matter the type, dose or combination of prophylactic medication used.
4. The majority of those who overuse short acting ‘over the counter’ and / or controlled substances for the management of headaches tend to have addictive personalities.

1023. Indications for a trial of spinal cord stimulation include:
1. Complex regional pain syndrome of bilateral extremities
2. Refractory angina
3. Post-laminectomy syndrome with neuropathic back and leg pain
4. Severe intractable ibromyalgia

1024. Which items are safe for MRI?
1. Internal orthopedic hardware
2. Intrauterine device
3. Epilepsy depth electrodes
4. Drug infusion pumps

1025. The following are advantages of a surgically implanted “paddle” lead over a percutaneous wire lead:
1. Positional stimulation is less common
2. There is less risk of lead migration
3. There is dorsal shielding with less stimulation of dorsal structures
4. The lead is easier to implant

1026. Which of the following symptoms are the earliest indication of lithium intoxication?
1. Impaired consciousness
2. Myoclonus
3. Seizures
4. Coarse tremor

1027. Which items are not safe for MRI?
1. Chest ports for chemotherapy
2. Oxygen tanks
3. All types of cerebral aneurysm clips
4. Metal in the eye

1028. Which of the following is/are true regarding intravenous Propofol?
1. Decreased mean arterial pressure
2. Decreased heart rate
3. Increased venodilation
4. Increased systemic vascular resistance

1029. Relative and absolute contraindications to MRI include:
1. Hemodynamic instability
2. Implanted pacemaker or defibrillator
3. Significant claustrophobia
4. Severe contrast reaction

1030. Where a nerve root is permanently injured, on physical examination one might observe:
1. Fibrillations in muscles served by that root
2. Increased reflexes involving that root
3. Numbness in at least two adjacent dermatomes due to overlapping innervation
4. Fasciculations and atrophy of the muscles innervated by that root

1031. A massage technique that applies gentle taps or blows would be classified as a
1. Stroking
2. Petrissage
3. Friction vibration
4. Percussion

1032. Which of the following statements is true?
1. In compression neuropathies, sensory nerve conduction tests are more sensitive than motor.
2. Plexopathies usually involve diminished SNAP’s
3. In radiculopathies, SNAP’s are usually undiminished
4. The absence of paraspinal muscle fibrillations rules out radiculopathy

1033. The major strength of the McGill Pain Questionnaire (MPQ) is that it is organized as a list of words, which are rated on a common intensity scale. It is possible to compare diagnosis and treatment with various pain syndromes by calculating the score obtained by the patients’ responses. All of the following are part of the evaluation
1. The number of words chosen
2. The total score based on each subclass intensity scale
3. Rating of the common intensity scale
4. Rating of the patient’s depression scale

1034. Which of the following hepatic metabolic pathways decrease with age?
1. Conjugation
2. Microsomal hydroxylation
3. Oxidation
4. Demethylation

1035. Which of the following central nervous system changes could occur with age?
1. Reduced Sympathetic function
2. Low-frequency hearing loss
3. Decreased sensory receptor density
4. Decrease in primitive reflexes

1036. The McGill Pain Questionnaire is designed to measure which of the following components of pain?
1. Societal
2. Sensory
3. Quantitative
4. Evaluative

1037. Regarding demyelinating diseases of the spinal cord
1. Cord edema and atrophy are common in the acute setting
2. T1 weighted sequence with contrast is best for diagnosing MS
3. All actively demyelinating lesions enhance
4. ADEM and MS may have an identical appearance
1038. Factitious disorder is differentiated from malingering by which of the following characteristics?
1. The production of physical signs is under voluntary control
2. The presence of a serious organic disorder as a comorbid factor
3. The primary motivation of the patient is to assume the sick role.
4. The absence of secondary gain

1039. Clinical features of a syrinx include:
1. Dissociated sensory loss
2. Long tract signs below the level of the lesion
3. Bowel or bladder dysfunction
4. Difficulty swallowing and speaking

1040. True statements about hypogastric plexus are:
1. Located in front of promontory crossing L5-S1
2. Anterior just to the left side of aorta
3. Communicates with celiac ganglion
4. Contains B-C and sympathetic fibers

1041. A nerve is undergoing Wallerian degeneration, but has preservation of the epineurium. This nerve injury could be classified as:
1. Seddon’s axonotmesis
2. Sunderland class 1
3. Sunderland class 4
4. Sunderland class 5

1042. Positive Waddell’s signs are indicative of:
1. The effects of psychosocial factors
2. A poor response to surgical intervention
3. Need for a comprehensive evaluation of pain
4. Lack of response to treatment

1043. Which of the following would support the diagnosis of an S1 nerve root lesion?
1. Absent ankle jerk
2. Weakness in toe walking
3. Atrophy of the gastrocnemius
4. Knee pain

1044. A patient presents with pain in the upper extremity following injury to the forearm. Examination showed weakness in the ring and little fingers with numbness in the little finger. The most likely diagnosis is:
1. C7/T1 disc herniation
2. T1/T2 disc herniation
3. Median nerve injury
4. Ulnar nerve injury

1045. The Quebec Task Force on Whiplash Associated Disorders recommends CT or MR imaging in which subset of patients?
1. Grade II (neck pain + musculoskeletal injury)
2. Grade IV (neck pain + bony injury)
3. Grade I (neck pain)
4. Grade III (neck pain + neurological injury)

1046. Which of the following observations, after nerve injury, is correctly paired with the appropriate nerve?
1. Inability to flex the forearm --- radial nerve
2. Numbness in the index finger --- median nerve
3. Inability to extend the forearm --- musculocutaneous nerve
4. Numbness in the little finger --- ulnar nerve

1047. All of the following clavicular movements are involved in upper extremity elevation less than 150°
1. Backward Spin
2. Elevation
3. Retraction
4. Protraction

1048. Proper stretching exercises includes:
1. Performing each stretch as quickly as possibly with multiple repetitions.
2. Holding each stretch for at least 30 seconds.
3. Avoiding placing any tension on the muscle.
4. Stretching after a proper warm-up period to allow for a better stretch.

1049. All of the following muscles are adductors while the arm is positioned at the patient’s side
1. Latissimus dorsi
2. Pectoralis major
3. Teres Major
4. Subscapularis

1050. Resisted wrist dorsal extension can provoke symptoms associated with following lateral elbow afflictions
1. Humeroradial joint chondropathy
2. Posterior interosseus nerve entrapment
3. Tendopathy of the extensor carpi radialis brevis
4. Tendopathy of the flexor carpi ulnaris

1051. Which of the following can cause ulnar nerve palsy
1. Cubitus valgus deformity
2. Subluxation of the ulnar nerve onto or past the medial humeral epicondyle
3. Occupational hazard, as a worker supports themselves on their elbows
4. An aponeurotic band that extends from the medial epicondyle of the humerus and attaches to the medial border of the olecranon.

1052. Anterior interosseous nerve syndrome would spare which of the following muscles?
1. Flexor pollicis longus
2. Pronator quadratus
3. Index flexor digitorum profundis
4. Pronator teres

1053. Tadpole lesions
1. Refers to the nerve swelling proximal to the area of the entrapped nerve
2. Refers to delamination of myelin and resultant accumulation in the internodes
3. Refers to appearance of ovoids, as the distal segment of the axon breaks down following axonal injury.
4. Are early harbingers of the process of demyelination and remyelination that occur with conduction block.

1054. Treatment for back, hip, and thigh pain in a patient with spondylolisthesis at L5/S1 includes which of the following?
1. Pelvic tilt for trunk stabilization
2. Flexibility training program with extension bias
3. Strength training with flexion bias
4. Start exercises immediately in brace with pain

1055. What is true about carpal tunnel syndrome?
1. Patients may complain about numbness in the thumb
2. Pain may be present in the forearm, shoulder, and elbow
3. Hypesthesia is often present in the volar surface of the middle finger
4. Hypothenar muscle atrophy may be present

1056. All of the following statements are true regarding the subacromiodeltoid bursa
1. It is often the 1st source of pain with traumatic rotator cuff tears in patients younger than 40 years.
2. It is the most densely innervated structure in the glen-humeral region.
3. It may be involved in the neurological regulation of shoulder movements.
4. Its size and compartmental configurations are predictable and consistent across patients.

1057. Which is true?
1. Axial loading of the neck may be helpful in the evaluation of chronic low back pain.
2. The Adson test is used to evaluate thoracic outlet syndrome.
3. Resistance to passive neck flexion with the hands behind the head, so that the chin cannot touch the chest is a sign that is used to evaluate meningeal irritation.
4. Increased neck pain with side bending is pathognomonic for cervical facet pain.

1058. A patient presents with an acute onset of upper extremity pain. On examination, there was decrease in sensation in the lateral arm. The patient may be suffering with the following condition(s):
1. C5/6 disc herniation
2. C4/5 disc herniation
3. C6 radiculopathy
4. C5 radiculopathy

1059. A patient undergoes a left stellate ganglion block without fluoroscopic guidance. One week later the patient develops intermittent fever and increasingly severe posterior neck pain. The following statements are true:
1. The patient should be treated with a 10-day course of oral antibiotics.
2. Discitis is more likely after a left-sided vs. a right-sided stellate block.
3. Symptoms are most likely unrelated to the stellate ganglion block.
4. The most appropriate immediate workup includes ESR, C-reactive protein and cervical MRI scan.

1060. A 50-year-old typist complains of numbness of 6 weeks in duration in her entire right hand that is relieved by placing her hand under cold running water. Numbness and tingling are prominent to the index finger when driving her car or typing. She had entered menopause five years previously. She is also a non-insulin dependent diabetic for approximately 10 years. There was no evidence of diabetic neuropathy. The true statements regarding this patient’s condition include:
1. She suffers with carpal tunnel syndrome.
2. Nerve conduction studies showed a prolong residual latency and normal conduction velocity in the forearm.
3. Treatment includes non-steroidal anti-inflammatory agents, a cock-up volar splint with wrist is loose-packed position (10° to 30° dorsiflexion) to be worn during day and night and tendon-gliding exercises.
4. Her diagnosis is C6 radiculopathy caused by cervical spondylosis.

1061. Which statements are false regarding spinal injection and bleeding complications:
1. Aspirin and other NSAIDS, in and of themselves, do not significantly increase the risk of epidural hematoma and need not be discontinued prior to spinal injection.
2. Spinal injection may be safely performed on a patient who has been off Coumadin for 4 days and has an INR of 1.4.
3. Cox 2 inhibitors such as Celebrex and Vioxx do not inhibit platelets and do not affect coagulation.
4. Bleeding time predicts hemostatic compromise in patients taking anti-platelet drugs.

1062. In assessing a possible C8 radiculopathy, the following muscle(s) would be beneficial:
1. Triceps
2. Flexor carpi ulnaris
3. Abductor pollicis brevis
4. Trapezius

1063. Complication of C6 transverse process stellate ganglion block include:
1. Seizure from injection into vertebral artery
2. Total spinal with subarachnoid injection
3. Spinal cord trauma
4. Nerve injury
1064. In the rehabilitation of a chronic low back pain patient, which of the following has been scientifically validated as effective treatment?
1. A long course of hot packs, ultrasound and electrical stimulation.
2. Manipulation and other manual treatments.
3. Daily traction combined with cryotherapy.
4. An active exercise program.

1065. The management of spinal stenosis includes the following:
1. Medication with non-steroidal anti-inflammatory drugs and calcitonin
2. Flexibility training with slight flexion bias in neutral spine position as it improves the stenosis
3. Epidural injections are indicated in patients without improvement with aggressive conservative care or increased symptoms
4. Surgery is indicated for intolerable pain with deterioration in functional status or progressive neurological deficit or cauda equina symptoms

1066. Operant interventions are specific and targeted. These are all of the below:
1. Patient sets goals and has a predefined award for attainment of goal.
2. Goals are increasingly more difficult in an attempt to maximize function.
3. Medical staff and family members are asked to acknowledge adaptive behaviors by the patient.
4. Medical staff and family members are instructed to support the patient’s pain behavior

1067. A 36-year old male presented with severe low back and left lower extremity pain. He reported the pain to start following a work related injury. Examination showed a positive straight leg raising on the right at 60°, and an absent left Achilles tendon reflex. He was treated with physical therapy, improved, and returned to work after 6 weeks. He had no pain at rest or numbness in the lower extremities one year after onset. He was able to perform all activities of daily living with only some back pain with heavy activity. His MRI showed left posterolateral disc herniation at L5/S1.
1. His diagnosis is lumbar strain.
2. His diagnosis is lumbar disc herniation with radiculopathy.
3. His impairment rating is 20% impairment of the whole person.
4. His impairment is 5% of the whole person.

1068. The most common cause of acquired flatfoot in the adult population is one of the following:
1. Tarsal tunnel syndrome
2. Posterior tibialis dysfunction
3. Plantar fasciitis
4. Spring ligament failure

1069. Coccygodynia has been reported to be treated with:
1. Cryoneurolysis of S5
2. Radiofrequency thermocoagulation of S5
3. Sacral nerve root stimulation – transsacral
4. Retrograde dual electrode placement to S3

1070. Which of the following treatments is relevant to managing cervical whiplash pain?
1. Prolonged immobilization of the neck
2. Non-steroidal anti-inflammatory drugs
3. Benzodiazepines
4. Cervical medial branch radiofrequency neurotomy

1071. Which of the following percutaneous procedures compares favorably to re-operation in the management of failed back surgery syndrome?
1. Spinal cord stimulation
2. Peripheral nerve stimulation
3. Radiofrequency denervation of the lumbar facet joints
4. Translaminar epidural steroid injections

1072. A patient presents with an acute onset of upper extremity pain with numbness in the little finger. Physical examination showed weakness with finger flexors. Most likely, diagnosis in this patient is:
1. C5 nerve root involvement
2. C6 nerve root involvement
3. C7 nerve root involvement
4. C8 nerve root involvement

1073. Sacral nerve root stimulation for coccygodynia is achieved by:
1. Bilateral stim-cath to S2 nerves
2. Bilateral S4 nerves with stim-cath
3. Bilateral S5 nerves with stim-cath
4. Bilateral stim-cath to S3 nerves

1074. Shoulder impingement should be suspected in a patient
1. That demonstrates a positive drop arm test
2. That demonstrates a ‘Popeye’ deformity
3. If the Yergason’s test is positive
4. Has pain with abduction

1075. Spinal stenosis rehabilitation includes the following:
1. A lumbar flexion program
2. Modified abdominal strengthening
3. Bicycling
4. Downhill walking
1076. Somatization Disorder is best characterized by which of the following statements?
1. It generally develops in early life.
2. Pain is rarely described by these patients.
3. Physical complaints are in excess of what would be expected based upon the history, physical examinations and laboratory studies.
4. Symptoms are intentionally produced or feigned.

1077. An ulnar nerve injury would most likely produce:
1. Numbness of part of the 4th and all of the 5th digit of the hand
2. Claw hand deformity
3. Weakened flexion of the wrist
4. Numbness of thumb

1078. Which of the following may cause referred pain to the inguinal/thigh region?
1. Femur fracture
2. Osteonecrosis of the femoral head
3. Inguinal hernia
4. L1-2 DISC HERNIATION

1079. The treatment of trochanteric bursitis or gluteal fasciitis includes the following:
1. Non-steroidal anti-inflammatory drugs
2. Physical therapy and exercise program
3. Local corticosteroid injection
4. Correction of mechanical abnormality

1080. Regarding Axis I of the DSM-IV-TR Multiaxial diagnostic methodology, which of the following is correct?
1. Use Axis I for reporting all significant personality disorders.
2. Medical disorders should be reported on Axis I, but the principal psychiatric diagnosis should be listed first.
3. When no Axis I disorder is present, note the Global Assessment of Function (GAF) as “>100.”
4. The principal diagnosis or reason for the visit will be assumed on Axis I unless the Axis II diagnosis is followed by a qualifying phrase ("reason for visit").

1081. Each of the following is associated with an increased incidence of headache after spinal anesthesia:
1. Young age
2. Female gender
3. Pregnancy
4. Large needle size

1082. A 42-year-old male patient presents with anterior knee pain. Pain started at work. Physical examination showed positive resisted knee extension. The conditions included in differential diagnosis include the following:
1. Meniscal anterior horn lesion
2. Prepatellar bursitis
3. Patellofemoral joint pathology
4. Infra-patellar bursitis

1083. FDA approved intrathecal medications include:
1. Morphine
2. Clonidine
3. Baclofen
4. Ziconitide

1084. True statement/s regarding peripheral nerve blocks is/are:
1. Frequently used as a component of multimodal analgesia
2. Interrupts the transmission component of the nociceptive process
3. Provide more selective anesthesia and analgesia than central neural blockade techniques, i.e. subarachnoid or epidural neural blockade
4. Femoral nerve block (3-in-1 block) is effective for anesthesia and analgesia of the lower leg.

1085. Which of the following tests are used to evaluate the meniscal injuries?
1. McMurray’s Test
2. Patellar Grind Test
3. Apley’s Compression Test
4. Lachman’s Maneuver

1086. Which of the following agents is/are useful in treating cancer-related fatigue?
1. Megestrol acetate
2. Corticosteroids
3. Antidepressants
4. Methylphenidate

1087. Cauda equina tumors may present with.
1. Acute persistent rectal pain
2. Lower extremity weakness
3. Patchy sensory loss
4. Sphincter disturbances

1088. Which of the following management strategies are recommended for a patient with Idiopathic Adhesive Capsulitis
1. Arthroscopic release
2. Hydraulic distention of the glenohumeral joint
3. Intra-articular injection
4. Stretching and resistive ROM exercises

1089. Cancer patients undergoing radiotherapy most likely exhibit the following
1. May have multiple pains in addition to the cancer-related pain
2. Could have pain caused by the radiotherapy itself
3. May develop myelopathy of the spinal cord
4. May develop acute inflammation of the nerves or plexuses
1090. Which of the following drug class(es) have NO EFFECT on acute neuropathic pain?
1. Opioids
2. Tricyclic antidepressants
3. Antiepileptics
4. Benzodiazepines

1091. True statements regarding temporal arteritis include the following:
1. A swollen, tender scalp artery is present
2. An elevated erythrocyte sedimentation rate (ESR)
3. Typical histologic features on biopsy
4. Polymyalgia rheumatica is frequently present

1092. An elderly patient undergoes a lumbar sympathetic block to improve blood flow after frostbite. Findings that suggest a successful lumbar sympathetic block include the following:
1. Inability to dorsiflex foot
2. Blushing in the toes
3. Numbness from the knee to the toes
4. Temperature increase in the legs

1093. Which is true of a superior hypogastric plexus?
1. When blocking the SHP, the needle ideally should be anterior to the L5-S1 disc
2. It is composed of parasympathetic and sympathetic fibers
3. It is indicated for pelvic malignancy and chronic interstitial cystitis
4. It receives branches of the sacral nerves

1094. The following trunk muscle groups have been identified as targets in a restorative spine stabilization program,
1. Diaphragm
2. Multifidus
3. Transverse abdominus
4. Rectus abdominus

1095. There has been much controversy surrounding the use of steroids in the treatment of spinal pain including their role in spinal cord injury after the presumed injection of the steroid into spinal feeder arteries leading to embolus and occlusion of critical spinal arteries. Which of the following steroid formulations has no appreciable particles when viewed under a microscope?
1. Betamethasone sodium phosphate
2. Betamethasone sodium phosphate / Betamethasone acetate (Celestone).
3. Dexamethasone Sodium phosphate.
4. Methylprednisolone acetate (Depomedrol).

1096. The beneficial effects of epidural administration of steroids have been attributed to of the following:
1. Inhibit phospholipase A2
2. Improve microcirculation around the nerve root
3. Block conduction of nociceptive C nerve fibers
4. NMDA antagonist

1097. A patient presents with lateral epicondylitis. Pain is noted on physical examination with which of following maneuvers during the examination:
1. Resisted flexion
2. Resisted extension
3. Resisted supination
4. Extension of the wrist with a fist

1098. True statements of adverse reaction of celiac plexus block include the following:
1. Urinary retention
2. Hypotension
3. Sexual dysfunction
4. Diarrhea

1099. The Cremasteric Reflex best tests for what nerve root?
1. L1
2. L2
3. L3
4. L4

1100. True statements about early changes on EMG/NCV after L5 disc herniation include:
1. Positive sharp waves are first noticeable in paraspinal muscles within 7-10 days after loss of axon function
2. By 14-18 days, positive sharp waves can appear in limb muscles, becoming evident throughout the involved myotome
3. By 18-21 days, all muscles in the involved myotome have abnormalities, including positive sharp waves and fibrillation potentials
4. Smaller amplitude positive sharp waves (100-150 MV) are indicative of acute injury

1101. The following maneuvers decrease carpal tunnel pressure
1. Forearm neutral position
2. Intermittent low tension hand exercise
3. Slight wrist palmar flexion with ulnar deviation
4. Full wrist dorsal extension (cock-up-position)

1102. Spinal cord stimulation is most effective in:
1. Brachial plexopathy
2. Phantom limb pain
3. Post herpetic neuralgia
4. Acute lumbar radiculopathy

1103. True statements about complications from neurolytic hypogastric plexus block are as follows:
1. Intravascular injection
2. Paralysis of lower extremity
3. Injury to ureter
4. Nerve injury
1104. A 55-year old slender white female complains of back pain that started a week ago. This started when she lifted a box with both hands. There was no significant radiation, however, it was exacerbated with any further activity including lifting. She became menopausal approximately 2 years ago, she smoked, she does not exercise. The only medications she had used were diazepam on a long term basis. The true statements relating to the diagnosis and management of her condition are as follows:
1. This patient suffered thoracic vertebral compression fracture secondary to osteoporosis.
2. This patient suffered disc herniation
3. Treatment includes a rigid thoracolumbar hyperextension orthosis, which provides external support and alleviates flexion forces on the affected vertebral segments
4. Manage with flexion exercises

1105. Pulsed radiofrequency lesioning settings may be:
1. 46 degrees Celsius and 20 volts
2. 56 degrees Celsius and 100 volts
3. 80 degrees Celsius and 40 volts
4. 42 degrees Celsius and 40 volts

1106. Which of the following are Waddell’s signs?
1. Evoked back pain with deep palpation of the lumbar paraspinals
2. Evoked back pain with en-bloc trunk rotation, i.e., moving the shoulders and hips in unison
3. Refuses to be examined
4. Superficial tenderness

1107. The common treatments of piriformis syndrome include the following:
1. Non-steroidal anti-inflammatory drugs
2. Piriformis stretch exercise program
3. Piriformis injection with local anesthetic and steroids
4. Surgical section of piriformis muscle

1108. Central pain arising from brain injury has been shown to result from which of the following structures?
1. Brainstem
2. Cerebral cortex
3. Thalamus
4. Subcortical white matter

1109. An interlaminar epidural steroid injection is an appropriate treatment choice for a patient with:
1. A C6 disc herniation and severecervical canal stenosis
2. Back and leg pain due to spinal metastases
3. Facet arthropathy producing severe back pain
4. An L5 disc herniation without neurological findings

1110. Themechanism of action of low frequency acupuncture pain relief is explained by which of the
1. Hypothalamic stimulation
2. Reticulospinal suppression
3. Activation of A fiber pathways
4. Release of endogenous enkephalins

1111. Strengthening exercises:
1. Are helpful in patients with chronic low back pain.
2. Should be stopped if a patient complains of increase muscle soreness.
3. Can result not only in improvement in strength but also reduction of pain.
4. Provides the best results when performed one time per week at low loads.

1112. A patient has intractable cancer pain with a neuropathic component. Ketamine is being considered as an adjuvant analgesic agent. Which of the following are correct regarding ketamine?:
1. Sympathomimetic effects
2. Noncompetitive NMDA antagonist
3. Contraindicated with increased ICP
4. May reduce the requirements for opioids

1113. Medications utilized for migraine prophylaxis include
1. Dihydroergotamine
2. Indomethacin
3. Sumatriptan
4. Calcium channel blockers

1114. Complications of neurolytic lumbar sympathetic blocks with phenol:
1. Genito-femoral nerve neuralgia
2. Lateral femoral cutaneous nerve injury
3. Paralysis of lower extremity
4. Renal pelvis and ureter destruction

1115. The greater occipital nerve is:
1. Formed from the dorsal ramus of the 2nd and 3rd cervical nerve roots
2. Formed from the ventral ramus of the 2nd cervical nerve root
3. Is located medial to the occipital artery
4. Passes through the occipital triangle

1116. MR signal:
1. Is based on electron spins
2. Fluid is hypointense on T1
3. Water is hyperintense on T2
4. The nucleus pulposus is dark on T2
1117. An anxious white female, age 28 years, has come to your clinic for axial lumbar spine pain. There is no radicular pain. Diagnostic imaging (X-ray and MRI) of the lumbar is completely normal. The patient has tried many mild non-narcotic medications and physical therapy. She is reluctant to try invasive therapies. She asks about your opinion of cognitive-behavioral therapy (CBT). The following are true:
1. Studies of CBT have demonstrated efficacy in chronic low back pain for 1 year.
2. CBT teaches coping skills that identifies and corrects maladaptive behaviors.
3. It involves a collaborative approach to therapy in which the patient and therapist work together as a team to help the patient learn and apply skills relevant to the patient’s problem.
4. It involves a long partnership with the therapist.

1118. Immediately following complete transection of the spinal cord, deep tendon reflexes and muscle tone below the level of the lesion are most likely to:
1. Increase
2. Fluctuate according to the presence or absence of dysautonomia.
3. Remain unchanged
4. Decrease.

1119. On axial MRI images of the lumbar spine:
1. Ventral rami of L5 nerves lie on the ventral sacrum.
2. Nucleus pulposus demonstrates T2 prolongation compared to the annulus.
3. The disc constitutes the anterior border of the intervertebral foramen.
4. The superior articular process lies anterior to the inferior process.

1120. A positive Froment’s sign indicates:
1. Weakness of the adductor pollicis.
2. Weakness of the flexor pollicis brevis.
3. Weakness of the first dorsal interosseous.
4. Weakness of the hypothenar muscles.

1121. A 54 year old female city administrator comes to your clinic for treatment of her back pain. The pain has been present for one year. She has received Naprosyn and, rarely, hydrocodone from her family doctor but the pain persists unchanged. She cannot sleep now. She is divorced and lives alone. She has been drinking wine, one half to a whole bottle, nightly with dinner because it allows her to fall asleep. She wakes up tired and barely makes it through a full work day. Which of the following are true?
1. The patient’s pain and poor sleep might be addressed by nortriptyline.
2. The combination of alcohol and a nonsteroidal anti-inflammatory drug could lead to complications in this patient.
3. The alcohol could be contributing to her poor sleep pattern.
4. The hydrocodone has led to hyperalgesia and worsening pain in this patient.

1122. Single-fiber electromyographic (EMG) recordings are helpful in assessing:
1. Sensory nerve fibers affected by ABC syndrome.
2. Postherpetic neuralgia.
3. Trigeminal neuralgia.
4. Jitter that occurs in some myopathies.

1123. Effective treatment strategies for “status migrainous” include:
1. Adequate fluid replacement.
2. DHE and Reglan.
3. Imitrex.
4. Phenothiazines.

1124. Which of the following are included in a complete electrodiagnostic evaluation?
1. Electromyography and late response studies.
2. Peripheral nerve conduction studies of motor and sensory nerves.
3. Somatosensory evoked potentials.

1125. A 33 year-old female pricks her index finger and progressively develops pain involving her upper limb. Which of the following is required for a diagnosis of complex regional pain syndrome?
1. Diffuse pain in the upper limb.
2. Pain that becomes worse with light touch or exposure to cold.
3. Swelling of the hand.
4. Tremor of the hand.

1126. Mechanism of action of TENSpain relief is thought to be:
1. Stimulates corticospinal system.
2. Stimulates reticulospinal system.
3. Inhibits large A fiber activity.
4. Inhibits C fiber activity.

1127. Sleep Studies (polysomnography) involve measurements of following parameters:
1. O2 saturation.
2. Heart Rate.
3. Eye movements.
4. Respiratory movement.

1128. Single fiber EMG is most useful in evaluating:
1. Carpal tunnel syndrome.
2. Multiple sclerosis.
3. Charcot Marie Tooth Disease.
4. Myasthenia gravis.
1129. A 70 year old woman with spinal stenosis and lumbar radiculopathy is hospitalized for TIA episodes. She is placed on intravenous low molecular weight heparin (LMWH) because she is at high risk for stroke. You are asked by the neurologist to perform a lumbar epidural injection prior to hospital discharge to treat her radiculopathy. Which of the following statements regarding heparin and spinal injection are true?
1. LMWH should be stopped for a minimum of 24 hours prior to spinal injection
2. Low dose, subcutaneous heparin (5000 units every 12 hours) creates minimal increased risk for spinal hematoma with spinal injection
3. There is a higher incidence of spinal hematoma associated with LMWH than with unfractionated (standard) heparin
4. An epidural catheter may be safely removed in a fully heparinized patient

1130. You practice in an area where alternative therapies are very popular. A local college teacher comes to you for a consult regarding chronic pain. He is willing to consider conventional medicine but he wants your opinion of some herbal and nutritional supplements he has been recommended by his friends. Which of the following may help any pain?
2. S-Adenosyl-L-Methionine (SAMe).
3. Magnesium.

1131. Spray and stretch is a therapeutic cold technique that uses
1. Ice massage
2. Cold water immersion
3. Cold Packs
4. Ethyl chloride

1132. In the approach to a patient with a history of previous lumbar spine surgery and continued low back and/or leg pain the following are true:
1. A significant minority, 10-20%, of spine surgery patients will have persistent pain or disability after their surgery
2. The best possible solution for preventing recurrent symptoms is to avoid inappropriate initial surgery whenever possible
3. Recurrent herniated disc, spinal instability, and spinal stenosis are the principal mechanical lesions likely to cause the pain and amenable to surgery
4. A conservative approach should be considered in patients with psychological co-morbidities or when there are compensation litigation factors.

1133. To lesion the L2 sympathetic ganglion, the final radiofrequency needle position should be:
1. On the upper third of the L2 vertebral body on the lateral view
2. On the lower third of the L2 vertebral body on the lateral view
3. In the middle of the L2 vertebral body on the lateral view
4. On the anterior border of the L2 vertebral body on lateral view

1134. The superior hypogastric plexus is located where?
1. Anterior to the fourth lumbar vertebra
2. Right of the midline of the vertebral column
3. In the posterior aspect of the peritoneal column
4. Just inferior to the aortic bifurcation

1135. Nociceptive input from the large intestine is conducted through which nerve/s?
1. Sympathetic afferents via superior and inferior plexi from T10-L2
2. Sympathetic afferents via inferior plexus from T12
3. Parasympathetic afferents to the pelvic plexus at S2-S4
4. Parasympathetic afferents to the inferior mesenteric plexus

1136. A cold pack is applied for 20 minutes to the anterior thigh of an athlete. You would expect a significant temperature drop at which of the following locations, 8 minutes into the application?
1. Skin surface underneath the cold pack
2. Skin surface 2 cm away from the cold pack
3. 1 cm deep to the cold pack
4. 2 cm deep to the cold pack

1137. Cervical traction would be useful in which of the following conditions
1. Arnold-chiari malformation
2. Cervical myelopathy
3. Rheumatoid arthritis
4. Cervical disc herniation

1138. Which of the following are resistive exercises?
1. Isometric
2. Active assisted
3. Isokinetic
4. Proprioceptive neuromuscular facilitation

1139. You are preparing to perform a provocative lumbar discogram on a 38 year old black male with low back and left leg pain. An MRI of the lumbar spine shows a degenerated and protruding disc at L5-S1 and a disc bulge with annular tear at L4-5. You plan to inject the discs at L3-4, L4-5, and L5-S1. In order to minimize the possibility of a falsely positive (or painful) disc you will modify the discogram by:
1. Using a 22 gauge or larger needle to decrease the pressure required to inject the dye through the needle
2. Limiting the injection to no more than 3.5 cubic centimeters of intradiscal injectate.
3. Stopping the injection when dye is seen to leak out of a degenerated disc
4. Limiting the injection to no more than 50 PSI above the opening intradiscal pressure
1140. In which of the following situations should heat be avoided?
1. Tissues with inadequate vascular supply.
2. Acute injury
3. Bleeding disorders
4. Regions of severely insensate tissue

1141. A wrist drop would suggest a problem with which peripheral nerve?
1. Axillary
2. Ulnar
3. Median
4. Radial

1142. Which heating method is contraindicated in patients with spinal cord stimulation?
1. Paraffin
2. Hydrotherapy
3. Heat Lamps
4. Diathermy

1143. Which of the following is not a deep heating method?
1. Ultrasound
2. Phonopheresis
3. Diathermy
4. Hot packs

1144. Which of the following describes a method of heat transfer?
1. Conduction
2. Convection
3. Conversion
4. Radiation

1145. Which of the following drugs are appropriate for the prevention of migraine?
1. Propanolol
2. Divalproex
3. Topiramate
4. Caffeine

1146. Which of the following scales is most appropriate for measuring the efficacy of tizanidine?
1. Ashworth
2. Borg
3. Numerical Pain Rating Scale
4. Nurick

1147. Which of the following can lead to significant elevations in tizanidine?
1. Ciprofloxacin
2. Fluvoxamine
3. Mexilitine
4. Acetaminophen

1148. A 42 year-old man develops excruciating pain extending from his buttocks to the dorsum of his foot. Which of the following would confirm the presence of a disc protrusion?
1. The Lasegue’s sign
2. Thomas test
3. Milgram Test
4. Fabere Test

1149. Which of the following are true of transcutaneous electrical stimulation?
1. Is based on the gate theory of pain
2. Mechanistically activates large diameter afferent fibers, in order to suppress afferent small fiber input into the spinal cord
3. High intensity, low frequency stimulation is thought to work via a naloxone reversible mechanism
4. Low frequency, high pulse duration cause strong muscle contractions

1150. Complex pain presentations are generally optimally treated using:
1. A single medical specialist
2. Biofeedback
3. Polypharmacy
4. Interdisciplinary treatment

1151. The following are the methods of achieving hypnotic pain control
1. Alter the perception of pain
2. Substitute the painful sensation with a different or less painful sensation
3. Move the pain to another area of the body
4. Distortion of time

1152. Potential complications associated with an ophthalmic nerve block include:
1. Orbital Perforation
2. Bradycardia
3. Ptosis
4. Miosis

1153. Which of the following is true about performing a ‘carpal tunnel’ injection?
1. It is indicated for analgesia of the 5th digit
2. The target nerve lies medial to the palmaris longus tendon
3. The injection is superficial to the flexor retinaculum
4. The target nerve lies medial the flexor carpi radialis tendon

1154. Which of the following electrodiagnostic studies is typically used to assess radicular pain involving the spine and related extremities?
1. Selective tissue conductance tests
2. Nerve conduction velocity studies
3. Somatosensory evoked potentials
4. Needle EMG recordings
1155. Appropriate indications for intrathecal opioids include:
1. Post laminectomy syndrome
2. CRPS
3. Cancer pain
4. Spasticity from spinal cord injury

1156. A young female presents with a severe left-sided throbbing headache associated with nausea, vomiting, and photophobia. She has tried taking ibuprofen without relief. On further questioning, she relates that she has been having similar headaches three to four months:
1. Appropriate therapy for this patient’s present headache includes Ergotamine tartrate.
2. Appropriate therapy for the present headache includes Amitriptyline hydrochloride
3. Appropriate long-term management includes a prescription for daily use of Amitriptyline hydrochloride.
4. Appropriate long-term management includes prescription for daily use of Sumatriptan and metoclopramide.

1157. Which of the following are late responses?
1. H-reflex
2. A-wave
3. F-wave
4. M-wave

1158. Which of the following are advantages of intravenous PCA over conventional IM therapy?
1. Decreased work load for health care personnel
2. Avoids excess drowsiness
3. Rapid pain relief
4. Equipment cost

1159. If you use the inion as a point of reference and march anteriorly, you will encounter several nerves innervating the cranium. Which of the following sequences would be correct?
1. Greater occipital nerve, Least occipital nerve, Lesser occipital nerve, Greater auricular nerve
2. Lesser occipital nerve, Greater occipital nerve, Least occipital nerve, Auriculotemporal nerve
3. Least occipital nerve, Lesser occipital nerve, Greater auricular nerve, Auriculotemporal nerve
4. Greater occipital nerve, Least Occipital Nerve, Auriculotemporal, Greater auricular nerve

1160. Constipation can be lead to?
1. Nausea
2. Increased Pain
3. Delirium
4. Hypercalcemia

1161. A patient on tramadol (Ultram) and sertraline (Zoloft) develops confusion. Your diagnosis is:
1. Drug abuse
2. Drug withdrawal
3. Cardiac side effects
4. Serotonin syndrome

1162. Which of the following blocks can be performed by both intra-oral and extra-oral approach?
1. Sphenopalatine ganglion block
2. Glossopharyngeal nerve block
3. Infra-orbital nerve block
4. Greater palatine nerve block

1163. Which of the following complications may be attributable to unrelieved constipation?
1. Chronic abdominal Pain
2. Headache
3. Back Pain
4. Lower extremity weakness

1164. Sacral nerve root stimulation for rectal pain is achieved by:
1. Bilateral stim-cath to S2 nerves
2. Bilateral stim-cath to S3 nerves
3. Bilateral S5 nerves with stim-cath
4. Bilateral S4 nerves with stim-cath

1165. Opioids that are commonly used intrathecally include:
1. Morphine
2. Fentanyl
3. Hydromorphone
4. Tramadol

1166. Treating patients with painful conditions and underlying Personality Disorders is made complicated because of which of the following?
1. The more bizarre patients appear to be the more likely they are to be assaultive.
2. There are no objective means to confirm compliance with treatment provided.
3. Insurance companies rarely provide defined benefits for “dual diagnosed” patients.
4. Borderline personality disorders are prone to exaggerated complaints, inappropriate attachments and impulsivity making their care very difficult.

1167. Which of the statements are true concerning cluster headache
1. The pain is always unilateral but can occur on either side at any given time
2. Unlike migraine, cluster headaches do not induce nausea
3. The only abnormal physical sign seen between attacks is an ipsilateral partial Horner’s syndrome (a minor degree of ptosis and myosis).
4. The stabbing pain of cluster headaches occurs most commonly in the area innervated by the 3rd branch (V3) of the trigeminal nerve
1168. A 38-year-old white male with chronic low back pain and history of alcoholism, on total of 200 mg of morphine per day, was admitted to the emergency room because he was found by his neighbors to be acting agitated and confused. ER physician notifies you of his admission. Which of the following identifies delirium tremens in differential diagnosis of this patient’s condition?

1. Clear sensorium
2. Prominent tremor
3. Auditory hallucination
4. Dilated pupils with slow reaction to light

1169. During EMG testing, abnormal electrical activity includes the following:

1. Fibrillation potentials
2. Fasciculation potentials
3. Myokymic discharges
4. Miniature endplate potentials

1170. Anterior Spinal Artery Syndrome usually results in:

1. Unilateral impairment of position sense
2. Normal motor function below the lesion
3. Brain stem stroke
4. Bilateral impairment of pain and temperature

1171. Ganglion impar neurolytic block after successful diagnostic block for rectal pain may be performed by using:

1. 25 ml of 50% alcohol
2. 10 ml of absolute alcohol
3. 4 ml of 25% phenol in glycerol
4. 4 ml of 6% phenol

1172. True entrapment of the ulnar nerve at as described by Guyon at Guyon’s canal could lead which of the following?

1. Loss of sensation on the dorsum of the 5th digit
2. Wrist pain that radiates to the forearm
3. Paralysis of the hypothenar
4. A positive Froment’s sign

1173. The true statements with regards to EMG findings with cervical nerve root involvement.

1. With C7 nerve root irritation, fibrillation or sharp waves are detected in triceps
2. With C8 involvement, fibrillation or sharp waves are detected in intrinsic hand muscles
3. With C6 involvement, fibrillation or sharp waves are detected in biceps
4. With C5 involvement, fibrillation or sharp waves are detected in biceps and triceps

1174. With seizures following lidocaine injection, hyperventilation with 100% O2 is recommended. The rationale for this therapy is to

1. Decrease delivery of lidocaine to the brain
2. Prevent hypoxia
3. Hyperpolarize the nerve membranes
4. Convert of lidocaine to the protonated (ionized) form

1175. The multiaxial distinction among Axis I, II and III disorders implies the importance given to which of the following statements?

1. Mental disorders are related to physical or biological factors, or that general medical conditions are related to behavioral or psychosocial factors.
2. General medical conditions are rarely the direct etiologic causes for the development or worsening of mental symptoms.
3. Enhanced communication among healthcare providers of different specialties is essential for the care of patients with pain.
4. Axis I disorders are not psychological reactions to an Axis III general medical conditions.

1176. Contact thermography

1. Is more reliable than infrared thermography
2. It best performed at normal room temperatures
3. Can picture the entire body
4. Is less expensive than infrared thermography

1177. Regarding Nerve Conduction Studies:

1. Slowing of conduction velocity most often implies demyelination
2. Diminished amplitude of the action potential implies axonal damage
3. Prolonged distal latencies are seen in entrapment neuropathies
4. Needle electrodes are used only in morbidly obese individuals due to attenuation of the AP signal secondary to adipose tissue transduction blockade

1178. A patient with history of chronic low back pain of several years starts complaining of lower extremity pain with radiation into lateral foot. Examination showed loss of reflex of Achilles tendon with reduced sensation on the lateral foot with weakness on foot eversion. The true statements with reference to EMG findings with lumbar spine evaluation are as follows:

1. S1 nerve root involvement shows fibrillation or sharp waves in peroneus longus and brevis
2. L4 nerve root involvement shows fibrillation or sharp waves in tibialis anterior
3. L5 nerve root involvement shows fibrillation or sharp waves in extensor hallucis longus
4. S1 nerve root involvement shows fibrillation or sharp waves in extensor hallucis longus
1179. During which of the following upper extremity motions is scapular posterior tilting most prevalent?
1. Abduction elevation
2. Extension elevation
3. Internal rotation
4. Flexion elevation

1180. A 42-year-old female patient presents with an 12 month history of elbow pain on the lateral aspect, resulting from repetitive strain at work. Symptoms were worse at night. Physical examination revealed mild provocation with resisted dorsal extension, but significant provocation with resisted forearm supination.
1. Tendopathy of the extensor carpi radialis brevis
2. Tendopathy of the flexor carpi ulnaris
3. Humeroradial joint chondropathy
4. Posterior interosseus nerve entrapment

1181. Twenty years ago, a patient was informed by her dentist that she was allergic to local anesthetics. True statements include:
1. The local anesthetic solution most likely contained methylparaben
2. The antigenic local anesthetic was most likely an amide
3. Skin testing is unreliable in confirming the diagnosis
4. Enzyme-linked immunosorbent assay (ELISA) will confirm the diagnosis

1182. Landmarks for stellate ganglion block include the
1. Cricoid cartilage
2. Mastoid process
3. Transverse process of C6
4. Hyoid bone

1183. What are the advantages of performing a stellate ganglion block at C7 compared to C6?
1. Easier to identify anatomic landmarks by palpation
2. Increased risk of recurrent laryngeal nerve palsy
3. Decreased risk of pneumothorax
4. Reduced volume of local anesthetic is needed

1184. Each of the following items describes pain in the abdominal viscera:
1. Pain is transmitted via the vagus nerve
2. The nerve fibers are type C versus A-delta
3. Pain is in a dermatomal distribution
4. Pain is characterized by a dull aching or burning sensation

1185. The visual analog scale is characterized by all of the following
1. It is a progression of the numeric pain scale
2. It uses a 10-cm line with 0 on one side and 10 on other
3. The patient is asked to place a mark along the line to denote the level of pain
4. It is a multidimensional pain scale

1186. The incidence of postdural puncture headache is increased in which of the following situations?
1. Pregnancy
2. Young age
3. Use of large-bore spinal needle
4. Use of paramedian instead of midline approach

1187. Which of the following statements are true regarding atypical facial pain?
1. The pain is constant, non-paroxysmal and poorly localized, even if generally unilateral.
2. It is usually resistant to uni-modal approaches to care whether medical, surgical or behavioral.
3. Patients appear less distressed than one might expect from the descriptors of pain which include ‘crushing’ or ‘ripping’
4. Depression is believed to be the underlying cause.

1188. Regarding polysomnography (PSG), which of the following is true?
1. This is a good test to order prior to seeing a sleep specialist given the information it can generate
2. It is a poor choice of testing if the patient has trouble sleeping because the data will be invalid unless he or she gets at least 4 hours of sleep.
3. The strength of the test is that two night’s testing results are averaged for accuracy
4. With a history of restless legs syndrome, periodic leg movements of sleep will likely show up

1189. Which of the following is true regarding neurolytic blocks?
1. Target is the ventral root
2. Lumbar subarachnoid neurolysis is performed at the vertebral level corresponding to the level of desired blockage.
3. Lower potential for motor deficits using the epidural approach
4. Less predictable spread of the neurolytic agent with an epidural approach

1190. Which of the following are true regarding segmentation abnormalities of the spine?
1. Vertebro-column abnormalities due to congenital malformations
2. Classic finding is scoliosis with deformed vertebral bodies
3. Posterior element defects best seen on axial CT views
4. Most common form is an indeterminate (transitional) vertebra

1191. Loss of resistance to air or saline describes a method to access the epidural space. What are the characteristics of the ligamentous structure that offers ‘resistance’?
1. A ligament that is weaker than the supraspinous ligament
2. A ligament that is composed of 20% elastin
3. A ligament that spans from the anterior surface of the caudal lamina to the posterior surface of the cephalad lamina
4. A ligament that is referred to as the yellow ligament
1192. Which of the following is true about cerebrospinal fluid?
1. CSF is reabsorbed by the choroidal plexi in the ventricles
2. CSF passes from the lateral to the 3rd ventricle via the foramen of Lushka
3. CSF is formed by arachnoid villi
4. The total volume of CSF is 150 ml., of which 25-30 cc are in the spinal subarachnoid space

1193. Subdural blockade is typically characterized by:
1. Immediate onset of sensory and motor block
2. Motor paralysis and sensory preservation
3. Upper motor neuron signs
4. Occurrence following the injection of a small volume of local anesthetic

1194. An elderly man has had many years of deteriorating kidney function due to diabetes. Dialysis was begun because of electrolyte abnormalities, approximately ten years ago. True statements about his pain problems
1. The most common neurologic complication of chronic renal failure is Seizures and Delirium.
2. The most common neurologic complication of chronic renal failure is Peripheral neuropathy.
3. His symptoms of restless legs syndrome may be controlled with either Haloperidol or Nifedipine
4. The most reliable treatment for the peripheral neuropathy of chronic renal failure is Renal transplant.

1195. FDA approved indications for spinal cord stimulation include
1. Angina
2. Peripheral vascular disease
3. Chronic pelvic pain
4. Neuropathic leg pain associated with multiple lumbar spine surgeries

1196. Pain originating from which of the following viscera can be treated with a celiac plexus block?
1. Pancreas
2. Gall bladder
3. Ascending colon
4. Sigmoid colon

1197. Which of the following is/are a component/s of a Horner's Syndrome?
1. Mydriasis
2. Ptosis
3. Facial anhidrosis
4. Enophthalmos

1198. Pain behaviors can include all of the following:
1. Reduced activity level
2. Verbal behavior
3. Nonverbal behavior
4. Pain beliefs

1199. A patient with constant supraorbital pain comes into your office. Possible etiologies include:
1. Frontal sinusitis
2. SCM pathology
3. Supraorbital neuralgia
4. Spinal accessory neuralgia

1200. Which of the following modalities does not use ionizing radiation:
1. MRI
2. CT scan
3. Ultrasound
4. Radiography

1201. Which of the following is or are true with respect to post lumbar puncture headaches (PLPH)?
1. Sprotte or Whitacre needles increase the risk of PLPH as compared to Quincke needles because they cut rather than spread apart the longitudinal fibers of the dura mater.
2. While strict bed rest, IV caffeine and IV theophylline may help reduce or stop a PLPH, the quickest and most effective method is a blood patch.
3. Lying prone for 3 hours after a lumbar puncture reduces the incidence of PLPH by 30-50%.
4. Cranial nerve 6 is the most likely cranial nerve to be affected by low CSF levels because it is the longest one exposed to low CSF levels and can be stretched over the petrous ridge of the temporal bone when the CSF levels fall.

1202. Which of the following are true regarding multiple myeloma?
1. Most common primary bone tumor
2. Bone scan is normal in majority of cases
3. MRI more sensitive than plain radiographs
4. Long bones more often involved than axial skeleton

1203. Which of the following are common findings on MRI with an epidural abscess?
1. Discitis
2. Dural enhancement
3. Vertebral osteomyelitis
4. Epidural fluid collection

1204. Which of the following is or are true regarding Pseudotumor Cerebri (PTC) a.k.a. Benign Intracranial Hypertension (BIH)?
1. It is strongly associated with obesity at all ages.
2. It is in part due to overproduction of CSF rather than poor drainage of CSE
3. It can occur without evidence of papilledema.
4. It is usually self-limited with only transient headaches.
1205. The criteria for diagnosing hypochondriasis include:
1. Pseudoneurological presentation
2. Persistent preoccupation despite medical reassurance
3. The preoccupation is delusional
4. The preoccupation has a duration of six months or more

1206. Effects of spinal cord stimulation on circulation include:
1. Increase in capillary blood flow within stimulated region
2. Increase in red cell volume within microcirculation at stimulation target
3. Increase in number of capillaries perfused within stimulated region
4. Increase in mean arterial blood pressure

1207. Which of the following are true about deep brain stimulation?
1. Good results are obtained with Dejerine-Roussy syndrome
2. Short term pain relief exceeds 60%
3. Tactile allodynia is not responsible to deep brain stimulation
4. Poor results are obtained with complete spinal cord injury pain

1208. Subacute combined degeneration due to vitamin B12 deficiency typically produces which of the following spinal cord changes on imaging?
1. Atrophy of the cord on CT scan
2. MRI T2-weighted hyperintensity of dorsal columns
3. Hyperintensity of ventral cord on T2-weighted MRI
4. Mild cord enlargement with abnormal signal in dorsal cord

1209. AIDS-induced vacuolar myelopathy, involving the posterior columns of the spinal cord, results in the loss of which sensory modalities?
1. Pain and temperature sensation contralateral to and below the side of the lesion
2. Proprioception and vibratory sensation of the lower and upper extremities
3. Inability to detect a full bladder
4. Two point discrimination

1210. The MMPI is a psychological test that assesses:
1. Pain tolerance
2. Beliefs and attitudes about pain
3. Psychotic process
4. Personality

1211. A patient presents with complaints of chronic widespread pain for more than 3 months and has 12 of 18 tender points positive with palpation on physical exam. Which of the following laboratory tests must be found normal before the patient can be diagnosed with fibromyalgia?

1212. Potential complications with aggressive percutaneous thermal lesioning of the trigeminal ganglion include the following:
1. Corneal keratitis
2. Weakness of ocular abduction
3. Difficulty chewing
4. Palsy of the 4th cranial nerve

1213. With regards to NCS's:
1. Slowing of conduction velocity most often implies demyelination.
2. Diminished amplitude of the action potential implies axonal damage
3. Prolonged distal latencies are seen in entrapment neuropathies
4. Needle electrodes are used only in morbidly obese individuals due to attenuation of the AP signal secondary to adipose tissue transduction blockade

1214. Secondary gain can include:
1. Financial compensation
2. Responsibility avoidance
3. Reinforcement from family
4. Reinforcement from friends

1215. Interventionsal pain management techniques used to treat pelvic pain include:
1. Splanchnic Nerve Block
2. Hypogastric Plexus Block
3. Celiac Plexus Block
4. Ganglion Impar Block

1216. Which of the following factors are capable of inducing pain in visceral structures?
1. Abnormal distention and contraction of hollow visceral structures
2. Rapid stretching of the capsule of solid visceral organs
3. Ischemia of visceral musculature
4. Traction or compression of ligaments, vessels, or mesentry

1217. The criteria for diagnosing hypochondriasis include all of the following:
1. Preoccupation with the fear of having a serious disease
2. Persistent preoccupation despite medical reassurance
3. The preoccupation has a duration of 6 months or more
4. The preoccupation is delusional
1218. Psychophysiologic assessment might include:
   1. Malingering indices
   2. Depression scales
   3. The MMPI
   4. Biofeedback assessment

1219. Regarding Evoked Potentials in general, which of the following is true?
   1. The BSAEP’s anatomic pathway is the middle ear, 8th cranial nerve, brainstem and auditory cortex
   2. The P300 waveform latency in CP’s can be delayed by autism, Schizophrenia and dementia
   3. The most commonly used peripheral nerve in SSEP testing is the posterior tibial
   4. The most important peak of electrical activity in VEP’s is the P120 with a maximum latency of 100 msec

1220. Which of the following statements is true regarding peripheral nerve stimulation:
   1. Positive response to TENS is a reliable predictor for positive response to peripheral nerve stimulation
   2. Pain relieving effects are caused by local anesthetic-like blockade of neural conduction within the peripheral nerve.
   3. Pain due to nerve root injury often responds well to PNS
   4. The best indication is pain in the distribution of a single traumatized peripheral nerve

1221. Assumptions underlying cognitive-behavioral therapy include:
   1. Cognitions interact with emotions, sensations and behavior
   2. Individuals must be active participants in treatment
   3. The interaction between an individual and the environment is reciprocal
   4. Behavior is influenced by expectations of outcomes and consequences

1222. Which of the following about hypophysectomy is true?
   1. Stereotactic instillation of phenol is the most commonly described method
   2. Gamma knife stereotactic radiotherapy of the hypothalamus is administered percutaneously
   3. The analgesic mechanism is thought to be due to interruption of limbic pathways
   4. One of the best described indications is diffuse pain due to bone metastases from breast or prostate carcinoma

1223. What are the main types of cervical spine pathology found in rheumatoid arthritis?
   1. Cranial settling
   2. Atlanto-axial subluxation
   3. Erosion or fusion of the facet joints
   4. Multilevel subluxations

1224. MRI findings in carpal tunnel syndrome include:
   1. Increased diameter of median nerve proximal to entrapment
   2. Flattening of nerve deep in carpal tunnel
   3. Increased signal on T2 images
   4. Decreased signal on STIR images

1225. Transcutaneous electrical stimulation:
   1. Is based on the gate control theory of pain
   2. Mechanistically activates large diameter afferent fibers, in order to suppress afferent small fiber input into the spinal cord
   3. High intensity, low frequency stimulation is thought to work via a naloxone reversible mechanism
   4. Low frequency, high pulse duration cause strong muscle contractions

1226. Congenital spinal stenosis
   1. May result in neurogenic claudication
   2. Is known as “short pedicle” syndrome
   3. Results in decreased anterioposterior canal narrowing
   4. Often is associated with acquired (degenerative) spinal stenosis

1227. A patient develops severe pain and swelling 24 hours after injection of a viscosupplement into the knee. Which of the following are required actions that MUST be undertaken EMERGENTLY?
   1. Intraarticular steroid injection.
   2. Joint aspiration
   3. Administration of NSAIDs
   4. Sending joint fluid in red and purple top tubes for culture, gram stain, crystal examination, and differential cell count

1228. There is increased risk of depression in chronic pain secondary to all of the following:
   1. The aversive nature of pain
   2. Sense of loss of control
   3. Disrupted sleep patterns
   4. Disability income

1229. Chronic pain syndrome includes all of the following:
   1. Disrupted activity levels
   2. Minor to moderate pathophysiology
   3. Excessive reliance on medications
   4. Minor to moderate pain complaining

1230. Which of the following is most likely to cause respiratory compromise?
   1. Unilateral percutaneous C1-2 cordotomy in a patient with a contralateral pneumonia
   2. Ipsilateral C1-2 cordotomy and contralateral C5-6 cordotomy
   3. Bilateral C1-2 percutaneous cordotomy
   4. Stereotactic mesencephalotection with ipsilateral diaphragmatic paralysis
1231. Indications for spinal imaging in pediatric patients with back pain include
1. Neurologic findings
2. Decreased function
3. Chronic pain
4. Fever

1232. The definition of pyogenic spondylitis includes which of the following structural findings?
1. Discitis
2. Osteomyelitis
3. Endplate erosions
4. Epidural

1233. The anatomic features contributing to the development of carpal tunnel syndrome include:
1. Abnormalities of the hamate hook
2. Capitate exostosis
3. Size and proximal insertion of the lumbricle muscles
4. Extensor digitorum communis tendon hypertrophy

1234. Post lumbar puncture headaches
1. Usually occur immediately following dural puncture
2. Are relieved 8 to 12 hours after an epidural blood patch is performed
3. Occur more frequently in nonpregnant compared with pregnant patients
4. Can be associated with neurologic deficits

1235. Benefits of continuous epidural analgesia for chest trauma includes:
1. Shorter ICU stay
2. Improved post-injury rehabilitation
3. Avoidance of endotracheal intubation
4. Earlier post-injury extubation

1236. Which of the following is/are signs and symptoms of a myelopathy?
1. Positive Babinski
2. Positive Hoffmann's sign
3. Clonus
4. Hyporeflexia

1237. The Beck Depression Inventory may slightly overestimate depression in pain populations because it
1. Family history of depression
2. A malingering scale
3. An interpersonal distress index
4. Somatic symptoms

1238. The true statements regarding management of low back pain secondary to spondylosis or spondylolisthesis are as follows:
1. Physical therapy initially using slight flexion bias with neutral spine position
2. Flexibility training program to improve hamstrings
3. Strength training to help to maintain segmental spinal mechanics
4. Spine extension program

1239. Which of the following statements about cachexia in the cancer patient is NOT true?
1. Cachexia in cancer patients may be managed by increasing caloric intake.
2. Cachexia is found in a majority of cancer patients and is a major contributing factor of death in 50% of these patients.
3. The main cause of cachexia in the cancer patient is depression leading to food aversion and apathy.
4. Corticosteroids may stimulate the appetite and decrease nausea in these patients.

1240. Which of the following approaches would likely be used by a psychologist treating a chronic pain patient?
1. Thermal biofeedback
2. Progressive muscle relaxation
3. Challenging catastrophic cognitions about pain
4. Exploring patient's relationship with his or her parents

1241. The initial treatment for leg pain associated with sickle cell crisis should include:
1. NSAIDs
2. Opioids
3. Hydration
4. Hydroxyurea

1242. Potential complication(s) of a stellate ganglion block include
1. Recurrent laryngeal nerve paralysis
2. Subarachnoid block
3. Brachial plexus block
4. Pneumothorax

1243. Spinal cord stimulation has been demonstrated to produce which of the following changes?
1. Temperature increase
2. Peripheral vasodilation
3. Increased peripheral blood flow
4. Blockade of noxious pain sensations

1244. The following statements are true regarding contraindications for TENS:
1. TENS should not be used in patients with cardiac pacemakers
2. TENS should not be used in the vicinity of peripheral arteries
3. TENS should not be used in the anterolateral neck
4. TENS should not be used for more than one hour at a time

1245. Which of the following is (are) true of osteochondritis (Scheuermann's Disease)?
1. Abnormality at junction of vertebral body and disc
2. Irregularity of ossification and endochondral growth
3. Thoracic spine involvement in teenagers
4. Anterior wedging and kyphosis
1246. Rehabilitation exercises recommended for lumbar spondylolysis and spondylolisthesis include the
1. Stretches to reduce impairments of trunk mobility, hip flexors, hamstrings, quadriceps, and calves
2. Modalities including ultrasound and electrical stimulation have been shown to improve symptoms and are generally of great value
3. Improving back and abdominal strength can help decrease the discomfort associated with the lumbar spine instability
4. Exercises to improve back and abdominal strength can be very painful and increase lumbar spine instability

1247. The true statements regarding conversion disorder are:
1. An alteration in physical functioning occurs as a consequence of psychological conflict.
2. Limb paralysis and blindness can be symptoms of conversion disorder.
3. Sexual dysfunction is a common conversion symptoms encountered clinically.
4. The patient is conscious of the connection between the physical dysfunction and the psychological stress at the time it occurs.

1248. Which of the following would be a focus of treatment using Fordyce’s Operant Model of chronic pain?
1. Panic disorder
2. Exaggerated limping in a patient whose spouse has taken over all household chores
3. Major depression secondary to chronic pain
4. Increased pain complaints every time return to work issues are raised by the physician

1249. The visceral afferent fibers of the heart are transmitted through what nerves
1. Vagus
2. Middle and inferior cervical ganglia
3. Thoracic cardiac nerves
4. Thoracic ganglia 3-6

1250. As a part of a psychological evaluation, a clinical interview includes:
1. Pain distribution and pattern
2. Financial and legal information
3. General medical status
4. Psychosocial history

1251. Which of the following reduce the rate of post-dural puncture headache, actually or theoretically?
1. Using a Whitacre needle instead of a Quincke-Babcock
2. Using a 25 gauge needle instead of a 24 gauge
3. Advancing a Quincke-Babcock needle parallel to the dura instead of perpendicular
4. Using a 6 inch needle instead of a 4 inch needle

1252. Conus Medullaris Syndrome differs from Cauda Equina Syndrome in that the former:
1. Is less likely to be painful, but if present, is a relatively mild perineum and thigh pain
2. Results in earlier and more severe sphincter dysfunction
3. Generally presents with symmetrical and bilateral sensory deficits
4. Generally presents with radicular pain

1253. The presence of positive sharp waves during needle electromyography of a patient who describes debilitating pain and weakness of the limb while being tested is significant because
1. This waveform is only found in patients with muscular dystrophy and never in pain syndrome
2. This type of activity is an objective sign of denervation or reinnervation
3. This pattern is an integral component of Waddell’s signs of nonorganic pain behavior
4. This pattern cannot be created fictitiously, even during reduced voluntary motor effort

1254. Indications for prophylactic treatment in migraine are:
1. Upcoming job interview
2. Five migraine attacks a month
3. Tension type headache
4. Headaches associated with nausea

1255. Thrombosed external hemorrhoid pain:
1. Has an abrupt onset
2. Is of an aching or burning quality
3. Is a localized anal pain
4. Is associated with a tender, almond shaped mass extruding outside the canal

1256. Dyspnea, a common symptom in patients with advanced cancer may be caused by:
1. Pleural effusion
2. Psychological distress
3. Pneumonia
4. Intracranial metastases

1257. On T2-weighted images of the lumbar spine
1. Intervertebral disc height is usually greatest at L4/5
2. Disc signal intensity is greatest at its central aspect
3. The nuclear cleft is normal in most cases
4. The conus usually ends at or above L1

1258. After a cervical plexus block, it is noted that the patient is unable to elevate the shoulder. Following nerves were blocked during the cervical plexus block
1. Thoracodorsal
2. Anterior cervical
3. Supraclavicular
4. Accessory
1259. The true statements regarding the N-methyl-D-aspartate (NMDA) receptor include the following
1. Glutamate and aspartate act at the NMDA receptor
2. NMDA may be involved in injury-induced wind-up
3. Wind-up is prevented by NMDA antagonists
4. Ketamine is an NMDA receptor agonist

1260. A pain psychologist might use the Millon Behavioral Health Inventory to assess:
1. Basic coping style
2. Psychogenic attitudes
3. Psychosomatic correlates
4. Personality Disorders

1261. Trauma to the spinal accessory nerve would be expected to cause:
1. Spasm of the trapezius muscle
2. Winged scapula
3. Torticollis
4. Hoarseness

1262. During an intravenous lidocaine test, all the following monitors are recommended
1. Electrocardiography
2. Blood pressure
3. Pulse oximetry
4. Skin temperature

1263. In terminal abdominal cancer pain, celiac plexus neurolytic block is:
1. An accepted procedure
2. Performed with 50 percent alcohol 25 ml bilaterally
3. Performed with absolute alcohol 12 ml transaortic route
4. Its effectiveness has been shown to be 100%

1264. Which of the following statements about fatigue in the cancer patient is NOT true?
1. Fatigue refers to a subjective sense of decreased vitality in physical or mental functioning.
2. Symptoms of fatigue may be alleviated by dexamethasone.
3. Some selective serotonin-reuptake inhibitors (SSRIs) have been shown to be useful in treating fatigue.
4. Correcting underlying problems such as depression, anxiety, or sleep disturbances is rarely useful in treating fatigue

1265. Which of the following can be used to perform the sweating test, a special test of the function of the autonomic nervous system?
1. Cobalt blue papers
2. Iodine in oil and starch powder
3. Ferric chloride and tannic acid
4. Pilocarpine hydrochloride

1266. A young woman in her forties has a 20-year history of Crohn's disease, presents with the acute onset of right ankle and left knee pain. She recalls a worsening of her gastrointestinal symptoms a few days before the joint symptoms developed. Radiographs of the knee and ankle demonstrate soft tissue swelling and small effusions but no bone destruction. The true statements include:
1. The patient is HLA- B27 positive
2. The patient is experiencing the most common extraintestinal manifestation of inflammatory bowel disease
3. Controlling the intestinal symptoms will eliminate the knee and ankle arthritis
4. The patient will go on to develop bone erosion and destruction of the knee and ankle
680. **Answer: E**

Explanation:
The term thunderclap headache implies the headache is sudden and severe. This pattern should alert the physician to the possibility of SAH. Although LP with CSF exam is the most definitive diagnostic study for SAH, CT was done and showed findings characteristic of ruptured middle cerebral artery aneurysm. Since 20% of aneurysms are multiple, a four-vessel angiogram is needed to study the entire cerebral circulation; whereas a left carotid angiogram would likely show the causal aneurysm only and not screen for the possibility of multiple aneurysms. (Lancet 2, pp. 1247-1248, 1986; postgraduate Medicine 86, pp. 93-100, 1989).
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

681. **Answer: C**

Source: Day MR, Board Review 2005

682. **Answer: D**

Explanation:
In cluster, patients awaken with severe short-lived headache. This is associated with autonomic dysfunction and Horner syndrome. The presence of headache with diplopia should suggest ruptured carotid aneurysm with oculomotor nerve dysfunction (ptosis, pupillary dilation, and extraocular muscle dysfunction). (Neurologic Clinics of North America 75, pp. 579-591, 1991; Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

683. **Answer: B**

Source: Sizer et al - Pain Practice - March & June 2004

684. **Answer: D**

Source: American Board of Anesthesiology, In-training examination

685. **Answer: D**

Source: American Board of Anesthesiology, In-training examination

686. **Answer: C**

Source: Janata JW, Board Review 2005

687. **Answer: D**

Explanation:
Frequent dosing by a patient receiving postoperative analgesia through a PCA pump suggests the need to increase the magnitude of the dose.

A patient also should be given a sufficient loading dose of narcotic before initiative therapy with a PCA pump.

688. **Answer: C**

Explanation:
It is believed that there is unstable serotonin neurotransmission in migraine, with increased raphe neuronal firing rates. During acute migraine attack, platelet serotonin levels fall and urinary serotonin increases. Serotonin transmission abnormalities in the gastrointestinal system explain prominent GI symptoms, and affective-mood disturbances are also due to unstable CNS serotonin changes. Drugs that treat migraine affect serotonin receptors.
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

689. **Answer: A**

Source: American Board of Anesthesiology, In-training examination

691. **Answer: A**

Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 634)

Spinal anesthesia is usually instituted with a needle inserted at an easily palpable interspace below L2. Depending on the patient’s individual anatomical features, the second, third, or fourth lumbar interspace may be selected. After the most prominent point of the iliac crests is located, an imaginary line is drawn between them (Tuffier’s line), which usually crosses the L4 spinous process or the L4-L5 interspace.
Source: Shah RV, Board Review 2005

692. **Answer: E**

Explanation:
(Raj, Pain Review 2nd Ed., pages 309-311)
Cingulotomy, anterior capsulotomy (anterior limb of internal capsule), leucotomy (pre-frontal lobotomy), and hypothalamotomy have been used for intractable cancer pain in multiple sites and for psychiatric disorders, such as
obsessive compulsive disorders. Hypothalamotomy, in fact, may be beneficial if there is a strong emotional component to the pain. Subtemporal sensory rhizotomy was the main operation performed for trigeminal neuralgia before the 1950s. Unfortunately, recurrence rates ranged from 5-20% and there was a high incidence of complications: anesthesia dolorosa, dyesthesias, keratitis. Source: Schultz D, Board Review 2004

699. Answer: C  
Source: American Board of Anesthesiology, In-training examination

700. Answer: D  
Source: Day MR, Board Review 2006

701. Answer: D  
Explanation:  
Source: Day MR, Board Review 2005

702. Answer: A  
Explanation:  
Source: Day MR, Board Review 2003

703. Answer: A  
Explanation:  
(Raj, Practical Mgmt of Pain, 3rd Ed., page 802)  
Long term relief of brachial plexus avulsion pain with DREZ lesioning is 60-65% at 3-7 years. Phantom and stump pain success is about 50-60%. Spinal cord injury pain is usually not responsive, except for end zone pain (segmental) occurring just below the level of injury. 70-75% of patients report successful relief with end zone pain.  
Source: Schultz D, Board Review 2004

704. Answer: C  
Explanation:  
Sudden “thunderclap” headache suggests subarachnoid hemorrhage (SAH). Because the headache lasts only 10 min and then resolves, this suggests effort migraine, especially since the patient has no meningeal signs. It would be unlikely for pain of SAH to resolve rapidly. Lack of fever excludes meningitis; normal blood pressure excludes hypertensive encephalopathy; lack of papilledema excludes intracranial hypertension. (Lancet 2, pp. 1247-1248, 1998).  
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

705. Answer: E  
Explanation:  
The major disadvantage of the interscalene block for hand and forearm surgery is that blockade of the inferior trunk (C8-T1) is often incomplete. Supplementation of the ulnar nerve is often required.
The risk of pneumothorax is quite low, but blockade of the ipsilateral phrenic nerve occurs in up to 100% of blocks. This can cause respiratory compromise in patients with significant lung disease.

706. Answer: B
   Explanation: (Raj, Pain Review 2nd Ed., page 312)
   Glossopharyngeal neuralgia afflicts 1-1.3% as many individuals as trigeminal neuralgia. The lancinating, paroxysmal qualities are similar but the pain is located at the base of the tongue, throat, and deep in the ear. Triggers include chewing and swallowing. GPN may rarely be associated with syncope or bradycardia.
   Source: Schultz D, Board Review 2004

707. Answer: B
   Explanation:
   MRI provides the greatest imaging resolution and complete evaluation in the setting of shoulder pain. Although a rotator cuff tear may be diagnosed with ultrasound or MR arthrography, diagnostic MRI remains the best modality in MRI compatible patients.
   Source: Bieneman B, Board Review 2005

708. Answer: A
   Explanation: (Raj, Practical Mgmt of Pain, 3rd Ed., page 355-6, 371)
   A. Morton's neuroma is the most common form of interdigital neuritis. It typically occurs between the third and fourth toes and rarely between the second and third toes. Pain can be produced between the metatarsal heads, which differentiates this condition from metatarsalgia, in which pain is elicited with pressure against the plantar foot under the metatarsal heads.

   B. Pain along the plantar surface of the metatarsal heads causes weight-bearing discomfort with each step and can be replicated with manual compression. About 80% of the weight is borne by the first metatarsal head, but in pronation, weight is shifted over the second and third toes and painful repetitive trauma can accumulate. Pain is typically increased in combined pronation and eversion, and this gait.

   C. Plantar fasciitis is commonly found in those who must stand on hard floors for long periods of time and is an inflammation of tendon and fascia and as they insert into the calcaneal periosteum. Bone growth in the direction of pull is frequently found as a calcaneal spur. The examiner can elicit pain with plantar compression over the anterior calcaneus, but pain may radiate along the plantar fascia.

   D. Painful heel syndrome is often diagnosed in morbidly overweight people or those who stand or walk excessively. Degeneration of the normal heel compression allows injury to weight-bearing surfaces of the calcaneus. Frequently, symptoms are increased in the morning or after a prolonged rest. Examination findings are similar to those in plantar fasciitis, but pain tends to be posterior and localized to the plantar calcaneus.

   E. The posterior tibial nerve is derived from L4 through S3 roots and may be compressed in the tarsal tunnel. Nerve conduction studies show prolongation of the distal motor and sensory latency of the tibial nerve. There may be EMG changes in the appropriate foot muscles. This syndrome is relatively uncommon.
   Source: Shah RV, Board Review 2004

709. Answer: C
   Source: Goodwin J, Board Review 2005

710. Answer: C
   Source: American Board of Anesthesiology, In-training examination

711. Answer: A
   Source: Goodwin J, Board Review 2005

712. Answer: D
   Source: Day MR, Board Review 2005

713. Answer: E
   Explanation: Intermittent Horner syndrome is most likely to occur with cluster, due to distention of the internal carotid artery wall as the sympathetic fibers travel within the carotid artery. Horner syndrome is partial, with ptosis and miosis but no anhidrosis. Other autonomic signs are present (perspiration, tachycardia, bradycardia, lacrimation), which suggests autonomic instability. (Medical Clinics of North America 75, pp. 579-591, 1986).
   Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

714. Answer: A
   Explanation: Fortification spectra are the most characteristic visual disturbance of migraine. These consist of C-shaped serrated zig-zag arcs followed by scotoma (area of blindness). Visual disturbance recedes before headache develops. When headache precedes neurological disturbance, consider nonmigraine disorders. Amaurosis fugax is visual loss in one eye only and suggests severe carotid stenosis. Emotional stress may precipitate migraine. Migraine usually develops not at peak stress but during a period of relaxation (“let-down”). This is contrasted with tension headache, which correlates directly with severity of emotional stress. (Archives of Neurology 36, p. 784, 1979;)
   Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

715. Answer: E
   Explanation: CTS may simulate C-7 cervical radiculopathy. In cervical radiculopathy, there would be neck pain and reduced
triceps reflex. In CTS, pain is usually in the wrist and thumb but may extend to the forearm.

In CTS, Tinel sign (tapping over the demyelinated median nerve at the wrist) and Phalen sign (forced wrist flexion causing sensory symptoms in median nerve distribution) are positive.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

716. Answer: C  
Explanation:  
Head shocks or jolts are quite characteristic of migraine.  
Pain begins as unilateral headache but later becomes bilateral. Thunderclap pattern or sudden increase to maximal pain severity suggests subarachnoid hemorrhage.  
Visual phenomena suggest migraine with aura, and autonomic features suggest cluster.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

717. Answer: D  
Source: American Board of Anesthesiology, In-training examination

718. Answer: B  
Explanation:  
Noncontrast CT brain is the appropriate exam for any acute neurologic abnormality

Source: Bieneman B, Board Review 2005

719. Answer: A  
Source: Day MR, Board Review 2005

720. Answer: A  
Explanation:  
Trauma-induced radial tears in the annulus appear to initiate disk herniation. These may be imaged with high-resolution spinal MRI. With normal aging, disk desiccation may occur without disk herniation.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

721. Answer: C  
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

722. Answer: B  
Explanation:  
A. A verbal rating scale consists of a list of adjectives describing different levels of pain intensity. An adequate VRS of pain intensity should include adjectives that reflect the extremes of this dimension from no pain to extremely intense pain and sufficient additional adjectives to capture the graduations of pain intensity that may be experienced.  
B. A Visual Analogue Pain Scale consists of a line, usually 10 cm long, whose ends are labeled as the extremes of pain (e.g., “no pain” to “pain as bad as it could be”). A VAS may have specific points along the line that are labeled with intensity-denoting adjectives or numbers. Such a scale is called a graphic rating scale. Patients are asked to indicate which point along the line best represents their pain intensity. The distance from the no pain end to the mark made by the patient is that patient’s pain intensity score.  
C. A numeric rating scale involves asking patients to rate their pain from 0 to 10 (11 point scale), from 0 to 20 (21 point scale), or from 0 to 100 (101 point scale), with the understanding that the 0 represents 1 end of the pain intensity continuum with no pain while 10, 20, or 100 represents the other extreme of pain intensity. Verbal rating scales do not require paper and pencil. The patient is simply asked to verbally state his or her pain intensity on a 0 to 10 or one of the other scales. Nonetheless, a number of paper and pencil numeric rating scales exist. The validity of numeric pain rating scales has been well documented. They demonstrate positive and significant correlations with other measures of pain intensity.

D. Picture or face scales employ photographs or line drawings that illustrate facial expressions of persons experiencing different levels of pain severity. The patients are asked to indicate which one of the illustrations best represents their pain experience. Each face has a number representing the rank order of pain illustrated, and the number associated with the picture chosen by the patient represents that individual’s pain intensity score.

E. Descriptor Differential Scale of pain intensity consists of a list of adjectives describing different levels of pain intensity. Patients are asked to rate the intensity of their pain as being more or less than each word on the list. If their experienced pain is greater than that described by the word, they place a check mark on the right of the word in proportion to how much greater their pain is. The DDS-1 has many strengths because it is a multiple-item measure, it is possible to assess the internal consistency of the scale, and this consistency appears to be very high.

Descriptor Differential Scale of pain intensity DDS-1 consists of the words faint, moderate, barely strong, intense, weak, strong, very mild, extremely intense, very weak, slightly intense, very intense, and mild.

723. Answer: A  
Explanation:  
Immediately following spinal cord injury, there is electrical-chemical change which enhances inhibitory neurotransmission such that all reflexes are absent. Later, reflexes become hyperreflexive.

In adults, spine or brain traumatic injuries do not cause blood loss. With traumatic spinal cord injury, autonomic function occurs immediately, and these patients require catheterization.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

724. Answer: E
Pain-sensitive structures include:
Proximal portion of large extra-and intracranial arteries.
Large veins and venous sinuses.
Meninges.
Upper cervical nerve roots.
Cranial nerves V, IX, and X.

Brain parenchyma is pain-insensitive, as are ventricles and choroid plexus. Electrode stimulation of the periaqueductal gray (PAG) region and somatosensory thalamus may cause headache. The descending analgesic system includes the mid-brain PAG, medial medullary raphe nucleus, reticular formation, and dorsal horn neurons of the spinal cord.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

725. Answer: D
Explanation:
With cauda equina compression, multiple nerve roots are involved. Findings are asymmetrical and autonomic dysfunction occurs late, since the spinal cord is not compressed. (Ref 1, p. 449; Ref 2, pp. 593–594)
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

726. Answer: A
Explanation:
Penile erection as well as bladder (micturition) and rectum (defecation) emptying are controlled by parasympathetic (PS) outflow through S-2 to S-4 (pelvic nerves). Acetylcholine is the primary postganglionic PS neurotransmitter. Sympathetic fibers originating at T-10 through L-2 play a central role in seminal emission and ejaculation and are involved in retention of urine and feces.
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

727. Answer: D
Source: Day MR, Board Review 2005

728. Answer: C
Source: Janata JW, Board Review 2005

729. Answer: A
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed, pages 639-41)
A. The gastrointestinal tract is innervated by both the sympathetic and parasympathetic systems. Visceral afferent parasympathetic fibers transmit sensations of satiety, distention, and nausea (but not pain). Parasympathetic efferent outflow increases tonic contraction, sphincter tone, peristalsis, and secretions.

Pain is mediated via sympathetic afferents, whereas sympathetic efferent fibers inhibit peristalsis and gastric secretions, constrict vasculature, and increase sphincter tone.

Sympathetic denervation of the gastrointestinal tract by neuroaxial blockade conceivably may lead to generalized contraction of the bowel secondary to unopposed parasympathetic efferent outflow.

The degree to which the bowel is affected after neural blockade depends on the extent of the blockade.

C. It is conceivable that a high thoracic or cervical block may impair respiratory function by affecting sensory function (modifying respiratory drive), motor function (decreasing abdominal muscles, intercostal muscles, and diaphragmatic strength), and sympathetic function (unopposed cholinergic tone can lead to hyperreactive airways).

Sympathetic block may diminish pulmonary blood flow and ventilation-perfusion (V/Q) mismatch. All of these changes have the potential to lead to airway closure, atelectasis, decreased blood flow, and diminished functional reserve capacity (FRC), causing (V/Q)mismatch and hypoxemia.

Experimental evidence, however, does not support this scheme.

D. The principal cardiovascular consequences of extensive epidural blockade are hypotension and bradycardia.

E. The extent of sympathetic blockade, however, correlates very poorly with the sensory level. The amount of sympathetic denervation and sensory blockade might be larger than the classically taught two levels.

It has been demonstrated that the sympathetic block could extend six or more spinal segments above the level of sensory blockade.

Source: Shah RV, Board Review 2005

730. Answer: C
Source: American Board of Anesthesiology, In-training examination

731. Answer: D
Source: Day MR, Board Review 2005

732. Answer: E
Explanation:
Reference:
A. Segmental activation of large A-beta fibers within the dorsal columns which antidromically inhibit reception of small fiber nociceptive information at the substantia gelatinosa of the dorsal horn.

This was Melzack and Wall’s original hypothesis and is consistent with a classic “gate control” theory of spinal cord stimulation.

B. Segmental blockade of neurotransmission in the spinothalamic tract.

This theory is supported by studies that show there is inhibition of pain transmission locally within the cord during spinal cord stimulation.

C. Spinal cord stimulation produces changes in supraspinal neurons that either modulate supraspinal pain transmission or trigger supraspinal descending inhibition of the dorsal horn.

D. Activation of central inhibition of sympathetic efferent neurons could affect pain processing. The consistent effect of vasodilation supports a sympathetic inhibition effect of spinal cord stimulation.

E. Release of putative neurotransmitters and/or neuromodulators. This theory is based on the observation that pain relief often outlasts the duration of stimulation for minutes, hours and sometimes days.

Source: Schultz D, Board Review 2004

733. Answer: E
Explanation: Sexual dysfunction occurs in all these conditions. Depression as well as medications used to treat depression should be considered as causal factors. MS causes spinal cord dysfunction and depression, and both conditions lead to sexual dysfunction. Diabetes may cause autonomic neuropathy with sexual dysfunction.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

734. Answer: C
Source: American Board of Anesthesiology, In-training examination

735. Answer: A
Source: American Board of Anesthesiology, In-training examination

736. Answer: C
Source: Day MR, Board Review 2005

737. Answer: A
Source: Janata JW, Board Review 2005

738. Answer: C

Source: Janata JW, Board Review 2005

739. Answer: A
Explanation: The pain history should include temporal, provocative, alleviative, and causative (initiative) parameters/factors of a particular patient’s pain. Expectational values and educational features of the patient may contribute to pain intensity, duration, expression, and amenability to treatment, but are not constituents of the pain history.

Source: Giordano J, Board Review 2006

740. Answer: A
Explanation: With occipital nerve stimulation, the lead is placed transversely in the subcutaneous tissue plane overlying C1-2. Unilateral or bilateral leads can be placed depending on the patients’ pain pattern. Paresthesias are typically felt in the occiput and sometimes in the posterior neck and shoulder but do not radiate down the arm. The technique is extraspinal so it can be used in patients’ who have undergone previous posterior cervical spine surgery. As with all neurostimulation, a successful trial of stimulation is a necessary prerequisite for implant.

Source: Schultz D, Board Review 2004

741. Answer: B
Source: Bieneman B, Board Review 2005

742. Answer: C
Explanation: Successful SCS implant requires a comfortable paresthesia sensation that overlaps the area of pain. This should be demonstrated in a trial of stimulation with the selected device prior to a decision to implant. The patient should have reasonably intact cognition because spinal cord stimulation requires the patient to turn on and off the device, keep track of the external programmer and be able to manage a certain amount of technology. Many patients with successfully implanted stimulators have paresthesia sensation in areas outside the pain target region. This is not necessarily a problem. Pain relief at low amplitudes is desirable but not required since an RF system with an external battery source can be used in these cases.

Source: Schultz D, Board Review 2004
743. Answer: A
Source: Goodwin J, Board Review 2005

744. Answer: B
Source: Janata JW, Board Review 2005

745. Answer: A
Explanation:
Source: Day MR, Board Review 2005

746. Answer: B
Source: Janata JW, Board Review 2005

747. Answer: C
Explanation:
Pain in the posterior aspect of the arm is likely due to a C7 root lesion, whereas medial anterior or lateral arm pain may be due to C6 or C7 nerve root lesion. A C7 nerve root lesion will also produce symptoms (pain and paresthesias) in the index and middle fingers as well as a diminished or absent triceps reflex. Absence of a brachioradialis reflex is an indication of a C6 nerve root lesion (Raj, pp 272-273).

748. Answer: E
Source: Racz G.Board Review 2003

749. Answer: E
Source: Racz G.Board Review 2003

750. Answer: E
Explanation:
The tip of the needle should touching the palatine bone adjacent to the middle turbinate.
Source: Day MR

751. Answer: E
Source: Racz G.Board Review 2003

752. Answer: E
Explanation:
Wrist extensors are supplied by C6 and partially by C7. The biceps has both C5 and C6 innervation. Under the radial extensors, extensor carpi radialis, longus and brevis, is supplied by radial nerve C6 in contrast to ulnar extensors supplied by extensor carpi ulnaris and C7 innervation.
C6 supplies sensation to the lateral forearm, the thumb, the index finger, and one half of the middle finger. To remember the C6 sensory distribution more easily, form the number 6 with your thumb, index, and middle fingers by pinching your thumb and index finger together while extending your middle finger.

753. Answer: E
Source: Racz G.Board Review 2003

754. Answer: D
Explanation:
- The use of relaxation techniques to reduce stress has proven very effective.
- Studies of diabetic patients who practiced progressive muscle relaxation showed significant improvement in glucose tolerance following relaxation training.
- Plasma cortisol levels were also reduced in patients trained in relaxation.
- Relaxation, however, did not affect insulin sensitivity or glucose-stimulated secretion of insulin.
- Stress reduction techniques, such as relaxation, are effective in reducing requirements for exogenous insulin and in the management of both insulin-dependent and non-insulin-dependent diabetes.
Source: Ebert 2004

755. Answer: A
Explanation:
Reference: Hardman, p 444.
This patient has the serotonin syndrome.
Serotonin is already present in increased amounts in synapses because of blockade of its reuptake by the SSRIs.
The amount of serotonin that is present further increased when breakdown by MAO is inhibited.
The serotonin syndrome can be life threatening.
Source: Stern - 2004

756. Answer: E
Explanation:
All listed agents are effective in treating migraine. Isometheptene in combination with acetaminophen and dichloralphenazone (Midrin) as well as caffeine are effective, possibly due to vasoconstrictive effect, despite the debate as to whether vascular factors are primary or secondary. These medications also affect serotonin receptors. Ergotamine is most effective when used parenterally and is less orally. Caffeine may enhance the effect of ergotamine is most effective and is a serotonin receptor agonist.
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD
757. **Answer: B**
Source: Janata J, Board Review 2006

758. **Answer: C**

Explanation:
All of the above are physical exam maneuvers to evaluate the median nerve compression in carpal tunnel syndrome.
Tinel’s involves tapping at the proximal wrist and eliciting paresthesias into the index and middle fingers including the thumb.
2-point discrimination can be easily performed with a paper clip.
Phalen’s involves wrist flexion to increase carpal tunnel pressure.
The ‘prayer’ maneuver involves wrist extension, aka, reverse Phalen’s.
Resisted thumb abduction is a way to test the abductor pollicis brevis reliably and involvement may mean that the median nerve is severely compressed.
Source: Shah RV, Board Review 2004

759. **Answer: B**

Explanation:
(Guyton, p 635.)

The flocculonodular lobe is known as the archecerebellum because it is, phylogenetically, the oldest portion of the cerebellum. It is connected to the vestibular nuclei and participates in the control of eye movements. Lesions to the flocculonodular lobe will cause nystagmus. Lesions to the other regions of the cortex, the deep nuclei of the spino cerebellar tracts, cause a variety of abnormalities in motor coordination referred to as ataxia.

760. **Answer: D**

Explanation:
The C7 (radial nerve) supplies the triceps, which is the primary elbow extensor while the triceps, wrist flexors, and finger extensors are partially innervated by the C8, they are predominantly C7 muscles.

C7 supplies sensation to the middle finger. Since the middle finger sensation is also occasionally supplied by C6 and C8, there is no conclusive way to test the C7 sensation.

761. **Answer: E**
Source: Wright PD, Board Review 2004

762. **Answer: A**

763. **Answer: B**

Explanation:
Intrathecal baclofen is indicated for spasticity from cerebral palsy, multiple sclerosis, spinal cord injury, and hypoxic brain trauma. Peripheral neuropathy, central thalamic pain, and post laminectomy syndrome are not primarily spasticity issues. Although severe cases of fibromyalgia have apparently responded to intrathecal baclofen, it is not a primary treatment.
Source: Trescot AM, Board Review 2004

764. **Answer: E**

Explanation:
All of these conditions may respond to intrathecal clonidine except for Lumbar disc herniation.
Source: Trescot AM, Board Review 2004

765. **Answer: A**

Explanation:
The more lipid soluble the opioid, the faster the onset of analgesia. The duration of action is inversely related to the lipid solubility.
Source: Trescot AM, Board Review 2004

766. **Answer: B**

Explanation:
The recurrent laryngeal nerve innervates all the muscles of the larynx except the cricothyroid muscle, which tenses the vocal cords and is innervated by the external branch of the superior laryngeal nerve.
Bilateral transections of the recurrent laryngeal nerve would produce tense (because the superior laryngeal nerve remains intact) closed (because the muscle that opens the cords have been denervated) vocal cords. What is actually seen are flaccid closed cords.
The cricothyroid muscle is evidently unable to tense the vocal cords without resistance from the other muscle in the larynx.

767. **Answer: D**
Source: Janata J, Board Review 2006

768. **Answer: C**

Explanation:
Hypogastric plexus blockade is useful in blocking pelvic pain due autonomic dysfunction.
The hypogastric plexus is formed by postganglionic sympathetic fibers, preganglionic parasympathetic fibers, and visceral afferent fibers.
Hypogastric plexus is located at the anterior aspect of the 5th lumbar vertebra, just inferior to the aortic bifurcation.
Source: Raj P

769. **Answer: E**

Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 535-536)
Indications
Prolonged immobilization leads to adhesions and contractures.
Restricted mobility.
Connective tissue or neuromuscular diseases.
Structural damage secondary to trauma.
Congenital or acquired bony deformities.

Contraindications
Restricted motion secondary to a bony block.
After a recent fracture.
Evidence of an acute inflammatory or infective process, either in or around a joint.
Patients in whom contractures are the chief means of providing joint stability

Source: Shah RV

770. Answer: E
Source: Janata JW, Board Review 2005

771. Answer: A
Explanation:
(Baum, pp 144-148.) Among the psychosocial variables considered to be risk factors for coronary heart disease, the type behavior pattern is most prominent. The type A behavior pattern consists of extremes of competitiveness, a chronic sense of time urgency, easily evoked hostility, aggressiveness, explosive speech, and increased rate of activity. More recent studies have shown that aggressiveness and hostility (especially unexpressed hostility) are the most consistent and important factors
Source: Ebert 2004

772. Answer: A
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 530-1)

In a study of rheumatoid arthritis patients, statistically significant improvements in ROM and grip function were noted after paraffin treatment in conjunction with active ROM exercises.

After 20 minutes, the temperature of the underlying tissue is elevated 2°C at 1 cm and 1°C at a depth of 2 cm. Prolonged exposure to hot packs may cause burns.

Temperatures above 50 degrees C may cause injury. Patients with diabetic neuropathy may be relatively insensitive, which is a contraindication to heat therapy. Malignancy is a contraindication to hydrotherapy.
Source: Shah RV

773. Answer: B
Source: Wirght PD, Board Review 2004

774. Answer: D
Source: Giordano J, Board Review 2003
Reference: Hardman, p 188.
Malignant hyperthermia (hyperpyrexia), a syndrome that is associated with the use of a general anesthetic (e.g., halothane) in conjunction with a skeletal muscle relaxant, is characterized by tachycardia, hyperventilation, arrhythmias, fever, muscular fasciculation, and rigidity. It is caused by a sudden increase in the availability of calcium (Ca) ions in the myoplasm of muscle. Dantrolene, which interferes with release Ca ions from the sarcoplasmic reticulum, is indicated in treatment of the disorder. The first three agents are centrally acting skeletal muscle relaxants that are not useful in the treatment of malignant hyperthermia. Source:Stern - 2004

783. Answer: D
Explanation:
(Guyton, pp 639-640.) Spasticity results from over activity of the alpha motoneurons innervating the skeletal musculature. Under normal circumstances, these alpha motoneurons are tonically stimulated by reticulospinal and vestibulospinal fibers originating in the brainstem. These brainstem fibers are normally inhibited by fibers originating in the cortex. Cutting the cortical fibers releases the brainstem fibers from inhibition and results in spasticity. Cutting the fibers from the reticular formation, vestibular nuclei, or the la afferents will reduce the spasticity.

784. Answer: B
Source: Sizer et al - Pain Practice - March & June 2004

785. Answer: A
Explanation:
(Guyton, pp 655-656.) Ataxia, dysmetria, and an intention tremor all are classic findings in a patient with a lesion involving the cerebellum. Affected persons also exhibit adiadochokinesia, which is a loss of ability to accomplish a swift succession of oscillatory movements, such as external and internal rotation of the foot. These symptoms all result from destruction of the normal feedback mechanisms that are coordinated in the cerebellum.

786. Answer: A
Explanation: The sympathectomy produced by a celiac plexus block causes hypotension by decreasing preload to the heart. Subarachnoid injection is the most serious complication of celiac plexus block. Seizure is possible with an intravascular injection. Retroperitoneal hematoma is also possible but extremely rare.

Celiac plexus block frequently relieves constipation by interrupting the sympathetic fibers and leaving the parasympathetic fibers unopposed. Source: Hall and Chantigan.

787. Answer: D
Explanation: Reference: Katzung, p 482. Although many antipsychotic agents can cause orthostatic hypotension, chlorpromazine is the most likely choice of the agents above for causing this adverse effect. Source: Stern - 2004

788. Answer: C
Source: Janata J, Board Review 2006

789. Answer: B
Source: Wirght PD, Board Review 2004

790. Answer: E
Source: Bieneman B, Board Review 2005

791. Answer: A
Source: Giordano J, Board Review 2003

792. Answer: A
Explanation: Because of its high vascularity, bone marrow is involved first, with extension to pedicle and posterior elements. Extension to epidural space may occur from vertebra or through foramen. Source: Bieneman B, Board Review 2005

793. Answer: B
Source: Bieneman B, Board Review 2005

794. Answer: A
Source: Bieneman B, Board Review 2005

795. Answer: C
Source: Janata JW, Board Review 2005

796. Answer: E
Source: Janata JW, Board Review 2005

797. Answer: A
Source: Day MR, Board Review 2005

798. Answer: C
Source: Janata JW, Board Review 2005

799. Answer: A
Explanation: (Raj, Pain Review 2nd Ed., page 309) Thalamotomy is useful for intermittent, shooting, hyperpathic or allodynic pain. Thalamotomy may not be useful for burning, dysesthetic, central, or deafferentation pain. Thalamotomy is not useful for peripheral nociceptive
pain. One of the most effective targets is the inferior posteromedial thalamus.
Source: Schultz D, Board Review 2004

800. Answer: B
Source: Bieneman B, Board Review 2005

801. Answer: C
Source: Day MR, Board Review 2006

802. Answer: C
Source: Bieneman B, Board Review 2005

803. Answer: A
Source: Bieneman B, Board Review 2005

804. Answer: B
Source: Bieneman B, Board Review 2005

805. Answer: A
Source: Bieneman B, Board Review 2005

806. Answer: C
Source: Bieneman B, Board Review 2005

807. Answer: D
Explanation:
(See lecture notes)
Source: Bieneman B, Board Review 2005

809. Answer: D
Explanation:
(Raj 2nd Ed., page 313)
Midline or commissural myelotomy sections those midline fibers just dorsal to the central canal of the spinal cord. The original intent was to lesion crossing spinothalamic neurons, which would eliminate pain, but preserve sensory function. However, pain relief extended caudally, without demonstrable caudal analgesia. This lead several investigators to postulate several alternate pain pathways. A multisynaptic short tract afferent pathway or an anterior tract located in between the posterior columns were proposed. The latter mediate pelvic and epigastric visceral pain. Nonetheless, myelotomy is indicated for bilateral pelvic and perineal pain of malignant origin.

Unilateral percutaneous cordotomy is among the most useful procedures for unilateral cancer pain below C5. It targets the spinothalamic tract. Radiofrequency energy is used. Electrical stimulation (sensory to obtain a feeling of warmth or coolness on the contralateral side and motor to obtain ipsilateral cervical muscles; ipsilateral contraction of muscles below the neck implies the probe is in the corticospinal tract) is used to identify the lesion target

Lissauer tractotomy is the goal of the dorsal root entry zone (DREZ) procedure...but all dorsal horn lamina (I-V) may be affected. The DREZ lesion is classically indicated for central nervous system damage related pain: brachial plexus avulsion, stump pain, spinal cord injury pain.

Hypophysectomy is recommended in the treatment of metastatic prostate and breast cancer, irrespective of the hormonal responsiveness of the tumors. The analgesic mechanism is unknown, but limbic system or psychological effects are unlikely to be the reasons for pain relief.

Cingulotomy, anterior capsulotomy (anterior limb of internal capsule), leucotomy (pre-frontal lobotomy), and hypothalamotomy have been used for intractable cancer pain in multiple sites and for psychiatric disorders, such as obsessive compulsive disorders.
Source: Schultz D, Board Review 2004

810. Answer: A
Explanation:
(Raj, Pain Review 2nd Ed., pages 311; Bonica 3rd Ed., pages 122, 130-2, & 153-4; Raj, Practical Mgmt of Pain 3rd Ed., pg 795)
The periaqueductal and periventricular grey are located in the midbrain. The PAG and PVG can be excited by endogenous opioids or electrical stimulation to initiate descending antinociception. The VPM and VPL located in the thalamus are useful for deafferentation or neuropathic pain. The caudalis subnucleus, also known as the trigeminal spinal nucleus, is thought to be integral for a variety of head pain syndromes. The reticular formation may be responsible for some of the affective and motivational responses to pain and the regulation of spinal motor, respiratory, and autonomic functions: arousal and escape. Pos-synaptic touch and proprioception fibers (dorsal column) project to the dorsal column nuclei: cuneatus and gracilis: lumbar and thoracic fibers to the gracilus and cervical to the cuneatus.
Source: Schultz D, Board Review 2004

811. Answer: C
Explanation:
Aortic dissection is an acute abdominal emergency and best imaged with CT due to the speed of examination and ability to characterize the type of dissection without delay. MRI and ultrasound may provide appropriate imaging of an aortic dissection in the non acute setting. Angiography is reserved for cases with clinical questions not answered by the initial imaging modality and for cases where further intervention is planned such as fenestration of a dissection of placement of a stent graft for aortic aneurysm.
Source: Bieneman B, Board Review 2005

812. Answer: A
Explanation:
Pain transmitted through the hypogastric plexus and celiac plexus along the sympathetic afferent fibers and enters the CNS at T10
813. Answer: D
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed, pages 641-6, 634)
A. Midline and paramedian approaches to the epidural space have been described.

B. The Bromage grip is a useful technique for slow, controlled advancement of an epidural needle towards the ligamentum flavum. The needle is firmly gripped between the thumb and index finger of the nondominant hand. The dorsum of the wrist is placed against the patient's back.

The needle is advanced by extension of the wrist while the dominant hand provides intermittent or constant pressure on the plunger, depending on whether one uses the loss-of-resistance technique to air or to saline solution, respectively.

C. The negative pressure often found within the epidural space is the basis for the hanging-drop technique. This hanging-drop sign of Gutierrez is used to identify the epidural space and is usually applied for cervical epidural blockade in the seated patients.

A winged needle is usually used and is advanced with both hands, as with the intermittent technique.

A drop of fluid is placed at the end of the needle once it is anchored in the interspinous ligament. Because of the persistent subatmospheric pressure within the epidural space, penetration of the ligamentum flavum and entrance of the epidural space cause the drop to be sucked into the hub of the epidural needle.

Injection of air or fluid without resistance confirms the position in the epidural space.

D. The Taylor is used to identify the subarachnoid space by way of the L5 interspace, which is the largest interspace in the vertebral column.

To enter this space, the operator introduces the spinal needle through the skin wheal approximately 1cm medial and 1cm inferior to the posterior superior iliac spine.

The spinal needle is directed medial and cephalad to enter the subarachnoid space at the midline at the L5-S1 interspace.

E. Identification of the sacral hiatus is important for caudal epidural procedures.

The sacral hiatus is formed secondary to nonfusion of the fifth sacral vertebral arch.

The hiatus is covered by the sacrococcygeal membrane and bordered by two cornua (large bony processes on each side of the hiatus).

The sacral hiatus is most easily identified with the patient lying in the prone or lateral position.

Firm pressure is used to identify the coccyx with the nondominant index finger. The first pair of bony protuberances in moving cephalad are the two cornua, surrounding the sacral hiatus.

Source: Shah RV, Board Review 2005

814. Answer: C
Source: Janata JW, Board Review 2005

815. Answer: E
Source: Janata JW, Board Review 2005

816. Answer: D
Explanation:
(Raj, Pain Review 2nd Ed, page 311)
Radiofrequency thermocoagulation of the trigeminal ganglion is the most widely practiced percutaneous intervention. MVD and radiosurgery are not percutaneous methods.

Source: Schultz D, Board Review 2004

817. Answer: A
Source: Day MR, Board Review 2006

818. Answer: D
Source: Sizer Et Al - Pain Practice March & June 2003

819. Answer: B
Source: Day MR, Board Review 2006

820. Answer: B
Explanation:
Headache is more commonly aching than throbbing. Jaw pain may occur with chewing, but TMJ tenderness is not usually present. The patient complains of joint pain and stiffness (polymyalgia rheumatica), but no active arthritis is found. The temporal artery is nonpulsative and frequently tender. ESR is usually markedly elevated.

(American Journal of Medicine 67, pp. 839-845, 1972; Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

821. Answer: A
Explanation:
With conus medullaries lesion, the lowest portion of the spinal cord would be involved; therefore there would be leg weakness with upper motor neuron sings (plantar extensor sings) with early autonomic signs and loss of ankle reflexes.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

822. Answer: D
Explanation:
Explanation: Arnold-Chiari malformation can cause occipital headaches. It is the prolapse and impaction of posterior fossa contents and brainstem onto the foramen magnum. Surgery for this problem usually involves an occipital craniectomy and posterior fossa decompression. Often the occipital bone is not replaced and the thick muscles of the upper cervical paraspinal and sub-occipital areas are closed over the dura. To perform an occipital injection in the same area could result in intra-cerebral injection of any drugs used. The procedure should be cancelled and the bony anatomy of the skull and upper cervical spine studied more thoroughly before proceeding.
Source: Ricardo M. Buenaventura, M.D

823. Answer: B
Explanation:
The patient has evidence of C6 root compression, most likely due to C5/6 disc protrusion.Pain in the neck, shoulder, medial scapula, anterior chest, lateral aspect of the upper arm, and dorsal aspect of the forearm associated with biceps and extensor carpi radialis weakness is frequently present.The patient may complain of numbness of the thumb and index finger.The biceps reflex may be diminished or absent (Wall, p 715)

824. Answer: D
Explanation:
Explanation: The greater splanchnic nerve is formed from preganglionic sympathetic axons from T5-9. The lesser splanchnic nerve from T10-11 and the least splanchnic nerve from T12
Source: Day MR

825. Answer: C
Explanation:
Spurling’s maneuver is a test to evaluate those patients with suspected cervical radiculopathy or cervical radicular pain. The patient’s neck is passively rotated and extended. The patient is then queried about whether the maneuver is reproducing their arm pain. Cervical radicular pain may be relieved with arm abduction and with the forearm resting on the head. Hoffman’s maneuver is used to evaluate upper motor neuron signs due to pathology above the thoracic spinal cord. Both tests would be complementary in a patient that may have cervical myeloradiculopathy, but they test different things: cervical myelopathy vs. cervical radiculopathy. Although no single physical exam maneuver should lead one to order an imaging study, Spurling’s should lead one to consider an MRI, X-ray, or less commonly, a myelogram.
Source: Shah RV, Board Review 2004

826. Answer: B
Explanation:
Source: Day MR, Board Review 2003

827. Answer: A
Explanation:
The site of injection of the local anesthetic is one of the most important factors influencing systemic local anesthetic absorption and toxicity.

The degree of absorption from the site of injection depends on the blood supply to that site. Areas that have the greatest blood supply have the greatest systemic absorption.

The greatest plasma concentration of local anesthetic occurs after an intercostal block, followed by caudal, epidural, brachial plexus, and femoral nerve block.

828. Answer: A
Explanation:
Morning stiffness greater than 1 hour is associated with inflammatory arthritis (IA), morning stiffness due to osteoarthritis (OA) typically lasts less than 30 minutes. OA pain worsens with activity, IA pain improves with activity. Joint swelling can be seen in both OA and IA. Joint cracking and popping are due to tendon movement and not joint abnormalities and is not necessarily associated with either IA or OA. While DIP erythema and pain can be associated with psoriatic arthritis, it is more commonly seen in osteoarthritis patients and cannot be used to identify inflammatory arthritis patients.
Source: Chad S. Boomershine, MD, PhD

829. Answer: A
Source: Feler C, Board Review 2005

830. Answer: B
Explanation:
Trigeminal neuralgia develops due to demyelination of the trigeminal nerve (sensory portion). This could be due to MS plaque, neoplasm in the cerebello-pontine angle, or vascular lesion compressing the trigeminal nerve. In most
cases of trigeminal neuralgia, no etiology is found and neurological examination is normal. Bursts of “electrical shock” pain usually last less than 30 sec and are confined to one division of the trigeminal nerve (mandibular is most common). Prior to diagnosis being established, dental origin for pain is considered, and many patients undergo unnecessary tooth extractions. Treatment includes carbamazepine, phenytoin, or baclofen. Surgical rhizotomy may be needed if medical therapy is not effective. There is a theory that the pain is due to compression of the trigeminal nerve by abnormal blood vessels, and if this is the case, microvascular decompression would be warranted.

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

831. Answer: D
Source: Wirght PD, Board Review 2004

832. Answer: D
Source: Day MR, Board Review 2006

833. Answer: A
Explanation: Nociception is probably via sympathetic fibers to the celiac plexus and spinal cord through the splanchnic nerves T5-9.

Source: Day MR

834. Answer: D

835. Answer: C
Source: Wright PD, Board Review 2004

836. Answer: D
Explanation: (Raj, Practical Management of Pain, 3rd Ed., page 632, 635)
Baricity of a local anesthetic is described as the density of a local anesthetic solution divided by the density of CSF. The density of CSF is 1.001 to 1.005 at 37°C. Local anesthetic solutions are characterized relative to CSF as hyperbaric, hypobaric, or isobaric. Understanding this density relationship allows the anesthesiologist to take advantage of the characteristics of the local anesthetic or the position of the patient to direct local anesthetic toward the dermatomes to be anesthetized. A hyperbaric solution has a higher specific gravity than CSF, so that it moves to low-lying parts of the subarachnoid.

Although prone may result in blockade of the sacral dermatomes, the sitting position would do this most effectively, by having the bulk of the local anesthetic dose go towards the sacral nerve roots.
Source: Shah RV, Board Review 2005

837. Answer: D
Explanation:
References:


838. Answer: B
Explanation:
Reference: Tollison, p 326.
If neural injury is suspected, electromyography and testing of neural conduction velocity can provide information as to the extent and location of injury. With neural injury, a decrease in motor potential in muscle groups and slowed conduction velocities occur. Neural conduction velocities are decreased quickly after neural injury. Electromyographic changes may take weeks to occur. Therefore, testing of neural conduction velocity is more sensitive than electromyography in the early stages of
neural injury.
Source: Kahn and Desio

839. Answer: C
Source: Wirght PD, Board Review 2004

840. Answer: D
Source: Wirght PD, Board Review 2004

841. Answer: D

842. Answer: D
Explanation:
(Goldman, 21/e, p 1558.) Hypertrophic osteoarthropathy is nail clubbing accompanied by a symmetrical polyarthritis involving the large joints and occasionally the metacarpophalangeal joints. Hypertrophic osteoarthropathy may be seen secondary to malignancy, endocarditis, vasculitis, and other pulmonary and cardiac diseases. Ankylosing spondylitis (AS) is a chronic and progressive inflammatory disease, seen mostly in men in their thirties, that most commonly affects the spinal, sacroiliac, and hip joints. It may go undiagnosed for many years, and bilateral hip pain due to sacroiliac involvement may be clinically undetectable. It is strongly associated with HLA-B27. Examination of the spine usually reveals limitation in movement; patients in advanced stages may have a characteristic bent-over posture. Patients with AS may present with an acute nongranulomatous uveitis and limited chest expansion due to involvement of the costovertebral joints. The Schober test is positive in AS (with the patient erect, marks are made 5 cm below and 10 cm above the lumbosacral junction between the posterior superior iliac spines; the patient bends, marks are measured, and if the distance between the two marks increases by less than 4 cm there is spinal immobility). The pathogenesis of reflex sympathetic dystrophy is unknown. The presentation may be seen after peripheral limb injury; early symptoms include pain in the limb and edema. This disorder may lead to contractures. Charcot joint is a complication of peripheral neuropathy seen in diabetic patients. Repetitive minor trauma to the foot causes deformities, which may lead to skin breakdown, erythema, edema, and callus formation.

843. Answer: D
Explanation:
(Braunwald, 15/e, pp 255-259, 1785. Kumar, 6/e, pp 550-552. Junqueira, 9/e, pp 318-319. Guyton, 10/e, pp 800-801.) The most probable diagnosis is gallstones. The pattern of elevated liver enzymes, alkaline phosphatase, and bilirubin are consistent with obstructive jaundice (see table below). The presence of pain (in the right upper quadrant radiating to the shoulder) after eating a meal consisting of fried foods makes gallstones the most probable diagnosis. Similar pain often occurs in these patients when they have not eaten for long periods of time and then have a large meal. The pain is caused by the obstruction of the cystic duct or common bile duct that produces increased luminal pressure within the bile vessels, which cannot be compensated for by cholecystokinin-induced contractions. The pain lasts for about one to four hours as a steady, aching feeling.

844. Answer: A
Source: Goodwin J, Board Review 2005

845. Answer: D
Explanation:
(Tierney, 42/e, p 792.) The most likely diagnosis in this patient is whiplash or cervical musculoligamental strain or strain. Whiplash-associated disorders begin after a symptom-free period following a hyperextension or hyperflexion injury, usually in an MVA. It is vital to perform a complete neurologic examination to exclude other causes of neck pain. Ankylosing spondylitis is a chronic and progressive inflammatory disease that most commonly affects spinal, sacroiliac, and hip joints. Osteoarthritis most often affects the weight-bearing joints. Reiter syndrome usually causes an arthritis of the hips, and there is often a history of urethritis, conjunctivitis, and foot involvement.

846. Answer: D
Source: Goodwin J, Board Review 2005

847. Answer: A

848. Answer: A
Explanation:
Goals of therapy include controlling the abnormal biomechanics of the foot, decreasing the inflammatory condition, and improving the flexibility. Various modalities of treatments mentioned include the following:
Non-steroidal anti-inflammatory agent
Rest
Night splint
Padding
Physical therapy with stretching and strengthening exercises
Physical therapy with ultrasound
Orthosis
Steroid injection
Surgical removal

849. Answer: A

850. Answer: A
Explanation:
the person is upright. Fracture of a lumbar vertebral body may be seen in vehicular accidents when the victim is restrained during a high-speed impact by a seat belt without a shoulder harness. The rapid and extreme forward flexion of the lumbar spine may produce a variety
of spinal injuries, ranging from fractures to dislocations. Fractures suffered during falls in which the person is upright, such as may occur when someone jumps off a building, are usually compression fractures of the vertebral body. Fracture of the vertebral body will usually produce pain coincidental with the injury. Patients with fractures of the vertebral body that occur without trauma or with inconsequential trauma must be investigated for malignant processes, such as metastatic carcinoma, multiple myeloma, and unsuspected osteomyelitis.

Source: Anschel 2004

851. Answer: C

Explanation:
A. The capitate is frequently fractured but does not tend to dislocate into the carpal arch.
B. The hamate provides an anchor for the transverse carpal ligament and is, therefore, located lateral to the carpal tunnel.
C. The lunate bone tends to dislocate anteriorly into the transverse carpal arch, thereby entrapping the tendons of the extrinsic digital flexors and compressing the median nerve.
D, E. The navicular (scaphoid) bone has a tendency to fracture but does not dislocate into the carpal tunnel.

852. Answer: E

853. Answer: C

Explanation:
Explanation: The maxillary branch of the trigeminal nerve exits the middle cranial fossa through foramen rotundum; the internal carotid artery and nerve plexus enter the cranial cavity via foramen lacerum; cranial nerves IX, X, and XI exit the cranial cavity via the jugular foramen; the middle meningeal artery and vein, and the meningeal branch of the mandibular nerve pass through foramen spinosum. Aside from the mandibular nerve, the accessory meningeal artery also passes through foramen ovale.


854. Answer: A

Source: Wirght PD, Board Review 2004

855. Answer: E

Explanation:
(Raj, Pain Medicine Review, 2nd Ed., page 236-238)

An interscalene block is performed with the patient supine and their head rotated away from the operator. The C6 level is palpated by identifying the cricoid cartilage. The non-dominant hand's index finger is used to gently palpate the posterior border of the sternocleidomastoid muscle. The finger is moved further posteriorly to identify the groove between the anterior and middle scaleni. The patient may be asked to deep breathly to accentuate this groove. The ext. jugular vein may run across this location.

A 22g needle is advanced medial, posterior, and slightly caudal (perpendicular to skin). Paresthesias should be elicited in the shoulder, or hand is obtained. 40-50 cc of local may be instilled incrementally.

The block is performed at the level of the cervical roots and is most likely to miss the C8 spinal nerve. Thus, one may get incomplete analgesia of the ulnar aspect of the hand. All the others are covered by the C5, C6 areas primarily.

Source: Shah RV, Board Review 2003

856. Answer: E

Explanation:
A herniated T-8 thoracic disk may compress the thoracic spinal cord, causing all the listed neurological disturbances. It can also cause thoracic radiculopathy resulting in bandlike sensory disturbance in the thoracic or abdominal region. This latter pattern may simulate shingles (herpes zoster without rash).

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

857. Answer: A

858. Answer: D

Explanation:
Studies of migraine have focused on vascular factors indicating that vasoconstrictive drugs reduce the amplitude of pulsation in the superficial temporal artery but that this does not always reduce headache. It is believed that extracranial vasodilatation is the cause of headache and intracranial vasoconstriction is the cause of neurological symptoms. Currently, the concept that “spreading cortical depression,” which is a primary neural (not vascular) event, is the major migraine mechanism. This cortical depression leads to hypometabolic state and hypoperfusion. The role of unstable serotonergic neurotransmission in this cortical depression in migraine is being explored. (Neurology 43 [suppl. 3], p. 51, 1993; Journal of Neurophysiology 7, pp. 359-390, 1941; Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

859. Answer: D

Explanation:
A. The sciatic nerve generally divides into the tibial and common peroneal nerves superior to the popliteal fossa. Damage to it might result in deficits in both plantar flexion and dorsiflexion.
B. The femoral nerve innervates the quadriceps muscles of the anterior thigh.
Damage to it would impair flexion of the thigh at the hip.
C. The common peroneal nerve innervates all muscles in the anterior and lateral compartments of the leg. The common peroneal nerve provides sensory innervation to the dorsum of the foot and the anterolateral surface of the legs via the superficial and
sural/lateral sural cutaneous nerves, respectively.

D. The common peroneal nerve is the lateral terminal branch of the sciatic nerve.

After arising near the apex of the popliteal fossa, it descends on the popliteus muscle and winds superficially around the fibular neck.

It is extremely vulnerable in this position and is the most often injured nerve in the lower extremity.

E. The tibial nerve innervates plantar flexors of the posterior compartment.

860. Answer: D
Explanation:
A. E. The optic foramen and superior orbital fissure open into the middle cranial fossa and transmit the optic nerve and the oculomotor, trochlear, and abducens nerves, respectively.

B. The ethmoidal sinuses are mucosa-lined cavities within the ethmoid and adjacent bones. They drain into the nasal cavity.

C. The pterygoid canal connects the middle cranial fossa with the pterygopalatine fossa and transmits the vidian nerve.

D. The infratemporal fossa communicates directly with the orbit via the inferior orbital fissure and the pterygopalatine fossa. The fissure normally transmits branches of the maxillary nerve and branches of the infraorbital vessels.

861. Answer: E
Explanation:
References:

3. The Anatomic Relation Among the Nerve Roots, Intervertebral Foramina, and Intervertebral Discs of the Cervical Spine


There are 7 cervical spinal levels and 8 cervical spinal nerves. The first two cervical nerves (C1 and C2) exit the spinal canal posterior to the atlanto-occipital and atlantoaxial joints respectively. These two nerves do not exit via a foramen. The first cervical foramen is C2-3 which transmits the C3 nerve. From C2-3 to C7-T1, the spinal nerve exiting the foramen is named by the last number of the level (i.e. C3 exits the C2-3 foramen, C4 exits the C3-4 foramen and C7 exits the C6-7 foramen). The C8 nerve exits the C7-T1 foramen. Below T1, the number convention reverses and the exiting nerve is named for the first number of the level (i.e. T2 exits the T2-3 foramen and L4 exits the L4-5 foramen).

The greater occipital nerve is the medial branch of the dorsal primary ramus of C2. It supplies most of the sensory innervation to the occiput. The C1 spinal nerve is primarily motor.

Degenerative changes of the intervertebral discs and nerve root impingement in the intervertebral foramen occur most commonly at the C5–C6 and C6–C7 levels. Kelsey et al investigated the epidemiology of prolapsed cervical discs in an attempt to provide descriptive statistics on this disorder and to identify possible risk factors. Most patients (75%) had prolapsed discs at either the C5–C6 or C6–C7 level. Likewise, according to Murphey et al, the frequency of cervical radiculopathy was 26% for C6, 61% for C7, and 8% for C8. The incidence of nerve root compression is high for C6 and C7.

Cadaveric dissection data from Tanaka et. Al. predicts a higher incidence of radiculopathy for the C5, C6 and C7 nerve roots. The C5 nerve roots were found to exit over the middle aspect of the intervertebral disc, whereas the C6 and C7 nerve roots were found to traverse the proximal part of the disc. The C8 nerve roots had little overlap with the C7–T1 disc in the intervertebral foramen. The C6 and C7 rootlets passed two disc levels in the dural sac. Also, a high incidence of the intradural connections between the dorsal rootlets of C5, C6, and C7 segments was found.

Source: Schultz D, Board Review 2004

862. Answer: B
Explanation:
Reference:
Gilbert, Complications and Controversies in Regional Anesthesia, in ASA Refresher Course, Chapter 6, Volume 3, ASA 2003


Total spinal anesthesia refers to the condition in which an overdose of intrathecal local anesthetic is administered, resulting in blockade of the entire intraspinal neuraxis. Patients with total spinal will manifest a complete and total, albeit temporary, paralysis. Manifestations include:

- Blockade of C3, C4 and C5 nerve roots (C3, 4 and 5 keep the diaphragm alive) as well as all thoracic spinal nerves resulting in diaphragm and chest wall paralysis with apnea.

- Blockade of sympathetic fibers with hypotension secondary to vasodilation and bradycardia.

- Complete muscle paralysis with loss of all voluntary movement including speech an eye opening.

- Unless hypotension is severe, the patient may remain awake and aware but completely unable to respond. Total
spinal is the most likely diagnosis here because of the significant risk of dural root sleeve injection with stellate ganglion block and the delayed and gradual onset of the event, taking several minutes to develop.

The other choices can be eliminated as follows:

Overdose of bupivacaine:

20 cc of 0.25% bupivacaine contains 50 mg of bupivacaine (one can easily calculate the mg/ml from the milliliters and percent of any local anesthetic. Simply multiply the percent (0.25) by 10. This will give the number of mg per milliliter (2.5). Multiply this number by the volume of 20ml to arrive at 50 mg).

The following are recommended maximum single doses for common local anesthetics:

- lidocaine: 300 mg without epinephrine, 500 mg with epinephrine
- bupivacaine: 175 mg to 225 mg

Although there are case reports of cardiac toxicity with direct intravascular injection of as little as 50 mg of bupivacaine, direct intravascular injection would have resulted in immediate, not delayed effects. Soft tissue infiltration overdose of bupivacaine would require a dose in the range of 175 mg.

Spinal cord infarction would be exceedingly unlikely from an injection of plain local anesthetic and the time course would be quicker.

Vertebral artery injection would cause immediate seizures.

Anaphylactic shock is a possibility but unlikely with the use of an amide local anesthetic.

Source: Schultz D, Board Review 2004

863. Answer: C
Source: Wirght PD, Board Review 2004

864. Answer: E

865. Answer: B
Explanation: (Tierney, 42/e, pp 813-814.)
The patient presents with symptoms suggestive of scleroderma or progressive systemic sclerosis (PSS). This disease, when diffuse, involves the skin, joints, lungs, heart, and gastrointestinal system. Limited systemic sclerosis (ISSc) was formerly known as the CREST syndrome (Calcinosis cutis, Raynaud’s phenomenon, Esophageal dysfunction, Sclerodactyly, and Telangiectasia). Raynaud’s phenomenon may be associated with tobacco use, medication use (ß-adrenergic blockers), or diseases such as systemic lupus erythematosus, rheumatoid arthritis, carpal tunnel syndrome, or thromboangiitis obliterans.

Dermatomyositis is a systemic disease characterized by a violaceous rash of the eyelids and periorbital areas (heliotrope) and flat, violaceous papules over the knuckles (Gottron sign). The rash seen in ulcerative colitis is pyoderma gangrenosum. These painful ulcers are large and irregular and drain purulent, hemorrhagic exudates.

Sarcoidosis is a systemic disease with skin manifestations, bilateral hilar adenopathy, and pulmonary disease. Patients with sarcoidosis may present with erythema nodosum, which typically takes the form of multiple firm, red, painful plaques that are bilateral and most frequently distributed on the legs. Musculoskeletal findings in sarcoidosis include arthritis and tenosynovitis.

866. Answer: A
Explanation: (Shah, Musculoskeletal Examination Presentation)
The wrist extensors are involved, typically due to overuse/inflammation/degeneration at their insertion on the lateral epicondyle of the humerus. Forearm flexors are involved in medial epicondylitis, ‘golfer’s’ elbow. The above corrective actions are true.

Source: Shah RV, Board Review 2004

867. Answer: C
Explanation: (Raj, Pain Review 2nd ed.)
The classic indication for celiac plexus block and neurolysis is pancreatic cancer. The liver and gallbladder are also indicated. The sigmoid colon is innervated by the lumbar sympathetic chain. Sympathetic innervation to the gut distal to the mid-transverse colon is supplied by the lumbar sympathetics. Note that the celiac plexus contains both parasympathetic and sympathetic fibers. However, preganglionic sympathetics coalesce to form the greater splanchnic (T5-T9) and lesser splanchnic (T10-T11) nerves. These do not synapse in the sympathetic chain but synapse in the celiac, aortico-renal, and superior mesenteric ganglia.

Source: Shah RV, Board Review 2003
the greatest influence are the baricity of the local anesthetic and the position of the patient.
Source: Shah RV, Board Review 2005

869. Answer: A
Source: Sizer et al - Pain Practice - March & June 2004

870. Answer: D
Explanation:
(Carlson, pp 259-267.)
- The human research on sleep has demonstrated that after a few days of sleep deprivation people report perceptual distortions or, in a few cases, even hallucinations. These studies have documented statements such as “the floor seems wavy” or “steam seems to be rising from the floor,” indicating that sleep deprivation affects cerebral functioning.
- Sleepiness can occur even without any activity and sleep deprivation does not appear to interfere with the ability to perform physical exercise. Likewise, there is no evidence of a physiologic stress response to sleep deprivation, indicated by little change in blood levels of cortisol and epinephrine. Sleep does appear to be necessary for the brain to function normally.
- After a period of sleep deprivation a rebound phenomenon does occur. The individual will sleep longer and spend a much greater time in REM sleep, but will not regain the number of sleepless hours lost.
Source: Ebert 2004

871. Answer: C
Source: Wirght PD, Board Review 2004

872. Answer: A
Explanation:
(Raj, Pain Review, 2nd Ed., page 226)
The temporo-mandibular joint is innervated by the auriculotemporal nerve a branch of V3. All the others are indications for a maxillary nerve block
Source: Shah RV, Board Review 2003

873. Answer: E
Explanation: On the lateral fluoroscopic image, identify the styloid process which is just posterior to the ramus of the mandible, and inferioranterior to the condylar process.

874. Answer: B
Explanation: Local spine tenderness elicited when palpating directly over the vertebral body is highly suggestive of vertebral body neoplasm or infection. Neoplastic conditions or infectious-inflammatory disorders (osteomyelitis) may distend the periosteum, causing local tenderness. This discrete local tenderness should be differentiated from more diffuse muscle spasm seen with a herniated disk.
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

875. Answer: C
Source: Janata J,Board Review 2006

876. Answer: E
Source: Janata J,Board Review 2006

877. Answer: D
Explanation: A. Five to ten percent of individuals with a single episode of major depression will eventually develop bipolar disease.
B. The National Comorbidity Survey carried out a structured psychiatric interview of a representative sample of the general population and reported a lifetime rate of major depression of 21.3% in women and 12.7% in men producing a female-to-male ration of 1.0 to 1.7. A gender difference was found beginning in early adolescence and persisting through the mid-50s. Although this increased tendency for depression in women reflects a long-term trend, over the short term, an increase has also been seen in the rate of depression among young women. The highest rate occurs in adult women aged more than 44 years.
C. 50% of cases of major depression will have full recovery by 6 months.
D. Major depression is a recurrent illness; the risk of relapse after one episode is about 50%, whereas it is greater than 80% after 3 episodes. The average lifetime number is 4.
E. The average age of onset of unipolar depression is 29 years
Source: Laxmaiah Manchikanti, MD

878. Answer: A
Source: Goodwin J, Board Review 2005

879. Answer: B
Source: Bieneman B, Board Review 2005

880. Answer: A
Source: Goodwin J, Board Review 2005

881. Answer: B
Explanation: The advantages of the supraventricular block are fourfold. The plexus is blocked where it is most compact, namely at
the level of the trunks. A small volume of anesthetic is required and no part of the plexus is spared as with axillary or interscalene block. The block can be performed with the arm in any position.

882. **Answer: B**

**Explanation:**
Axial T2-weighted MRI scan at the lumbosacral level. The arrow shows the degree of disc protrusion and the effect that it is having on the pain sensitive anterior part of the dural tube (D) and, to some extent, on the S1 nerve roots (small white arrows). R = right side of patient. The rectangle shows the approximate area shown in C.

Lateral T2 weighted MRI scan showing the lumbosacral spine. S1 = first sacral segment. The posterior disc protrusion at the L5/S1 level is shown by the black arrow; it can be seen compressing the anterior part of the dural tube (D) (thecal sac). Note that the disc is becoming ‘black’ between L5 and S1 which indicates that it is undergoing dehydration (desiccation) as a result of injury. The L4/5 disc shows some early desiccation with essentially normal disc hydration at the levels above.

A 200-micron thick histological section from a cadaver with a similar but less extensive, disc protrusion; this is to orientate the reader to the various anatomical structures. The histological section is represented approximately by the area within the rectangle on (D). R = right nerve roots budding off from the dural tube (D) containing small nerve roots from the cauda equina (C). H = hyaline cartilage on the zygapophyseal joint facet surfaces. L = ligamentum flavum; N = spinal nerve; S = spinous process. Open arrow head = intervertebral disc protrusion.


883. **Answer: B**


884. **Answer: A**

Source: Feler C, Board Review 2005

885. **Answer: D**

Source: Feler C, Board Review 2005

886. **Answer: C**

**Explanation:**
A. The nucleus ambiguus is the source of preganglionic parasympathetic neurons that innervate the heart via the vagus nerve and cardiac plexus.
B. Neurons arising in the cervical intermediolateral cell column are sympathetic preganglionics.
C. Preganglionic parasympathetic neurons to the lower colon arise from the spinal cord at sacral levels two to four and reach the wall of the colon via pelvic splanchnic nerves.

D. Preganglionic parasympathetic neurons arising from the motor nucleus of the vagus innervate the upper GI tract.

E. Neurons arising from the ventral horn are primary somatic motor neurons to skeletal muscle.

887. **Answer: E**

**Explanation:**
(The Baum, pp 264-271.)

The DSM-IV is a multiaxial classification and categorization manual for a wide variety of psychological disorders. One of its newer contributions is that each individual is scored according to broad categories and axes so that an individual may be classified as having several disorders rather than being forced into a single category or disorder.

The various categories of axes are

Axis I: Primary psychiatric disorders (including physical and sexual abuse, medication-induced disorders, noncompliance)

Axis II: Personality disorders and mental retardation (can also be used for maladaptive personality and defense mechanisms)

Axis III: General medical conditions (general physical health important to the total diagnostic picture)

Axis IV: Psychosocial and environmental problems (family, personal, or situational problems that might affect the diagnosis, treatment, or program)

Axis V: Global assessment of functioning (a scale of the level of functioning at the time of evaluation and at other time periods)

Source: Ebert 2004

888. **Answer: B**


889. **Answer: B**

**Explanation:**
Lidocaine patches should only be used on intact skin. Similarly, capsaicin should not be used on broken skin. Peripheral nerve blockade, such as intercostal blocks, is the best choice of the options provided. SCS and intrathecal steroids may be appropriate for postherpetic neuralgia.

890. **Answer: B**

Source: Racz G. Board Review 2003

891. **Answer: C**

Source: Racz G. Board Review 2003

892. **Answer: E**

Source: Racz G. Board Review 2003
893. **Answer: E**
Explanation:
Sumatriptan is closely related to serotonin (5-HT) in structure, and it is believed that the drug is effective in the treatment of acute migraine headaches by virtue of its selective agonistic activity at 5-HT1D receptors. These receptors, present on cerebral and meningeal arteries, mediate vasoconstriction induced by 5-HT. In addition, 5-HT1D receptors are found on presynaptic nerve terminals and function to inhibit the release of neuropeptides and other neurotransmitters. It has been suggested that the pain of migraine headaches is caused by vasodilation of intracranial blood vessels and stimulation of trigeminovascular axons, which cause pain and release vasoactive neuropeptides to produce neurogenic inflammation and edema. Sumatriptan acts to reduce vasodilation and the release of neurotransmitters and, therefore, reduces the pain that is associated with migraine headaches. Other antimigraine drugs (e.g., ergotamine and dihydroergotamine) also exhibit high affinities for the 5-HT1D-receptor site.
Source: Katzung, pp 280-281.

894. **Answer: C**
Explanation:
A disc bulge is not a herniation
Source: Bieneman B, Board Review 2005

895. **Answer: D**
Source: Sizer Et Al - Pain Practice March & June 2003

896. **Answer: D**
Explanation:
Explanation: Spondyloylosis means there is a defect in the pars interarticularis at the affected level. Spondylolisthesis is the condition in which all or part of a vertebra has slipped on another. These are common conditions seen in a spinal pain clinic and an interventional spine physician should be familiar with these terms in order to deal with them appropriately.
Source: Ricardo M. Buenaventura, M.D.

897. **Answer: D**
Explanation:
(Seidel, pp 264-266. Ebert, pp 341-350.) Posttraumatic stress disorder (PTSD) is a cluster of symptoms that can occur in a person after exposure to a severely stressful event (e.g., rape, combat, natural disaster). There are three categories of symptoms: reexperiencing the event (e.g., nightmares, daydreams, obsessions, flashbacks), withdrawal (e.g., avoiding movies about war and rape and feeling detached from others who have not experienced the event), and hyperarousal (e.g., insomnia, irritability, hypervigilance, severe anxiety). Most patients with PTSD recover, especially those with good premorbid functioning and support. The greatest risk for PTSD among combat veterans is among those who killed noncombatants, participated in atrocities, or were wounded. Another factor associated with increased risk for PTSD is violence or behavioral problems, sociopathy, or psychiatric disorders prior to the trauma. Substance abuse, including alcoholism, is also relevant. It is estimated that as many as 480,000 American veterans of the war in Vietnam have PTSD.
Source: Ebert 2004

898. **Answer: D**
Source: Malanga G, Board Review 2003

899. **Answer: D**
Explanation:
The first dorsal interosseous muscle is innervated by the ulnar nerve. The fibers of the ulnar nerve reaching this muscle originate at the C8 and T1 roots. If the ulnar nerve itself is the neural element injured, it is usually because of damage at the elbow, where the ulnar nerve runs superficially in the groove over the ulnar condyle. All the interosseous muscles of the hand are supplied by the ulnar nerve: complete transection of that nerve will produce interosseous wasting and impaired finger adduction and abduction. Although the lumbrical muscles are situated alongside the interosseous muscles of the hand, only two lumbricals – those on the ulnar metacarpals – are innervated by the ulnar nerve. The other two lumbricals are innervated by the median nerve. All four lumbricals insert on the extensor sheaths of the fingers and participate in extension of the digits.
Source: Anschel 2004

900. **Answer: D**
Explanation:
(Tierney, 42/e, pp 961-967.) There are three types of stroke: subarachnoid hemorrhage, cerebral infarction, and intracerebral hemorrhage. This patient presented after complaining of a severe headache. She has neck stiffness and no focal deficit on neurologic exam. The loss of consciousness requires bihemispherical dysfunction, and this along with the abrupt history is most consistent with a subarachnoid hemorrhage (SAH). Common causes of SAH include ruptured aneurysm (i.e., berry) and arteriovenous malformation (AVM). Intracerebral hemorrhage (ICH) rarely produces coma (must be significantly large to do so), and patients do not complain of headache (does not involve the meninges). Patients with ICH have focal deficits that appear abruptly slowly progress over hours. An embolic stroke can involve any carotid artery but must be bilateral to cause loss of consciousness. Patients have a history of atrial fibrillation or cardiac problems.
Source: Anschel 2004

901. **Answer: B**

902. **Answer: A**
Explanation:
(Seidel, Sle, pp 791-792.)
A. Atactic gait is often characterized by clumsiness; when steps are taken, the advancing foot is lifted high.
The foot is then brought down in a slapping or stamping manner. Spastic hemiplegic gait is the result of spasticity of the involved limb. The limb is moved forward by abduction and circumduction.

B. Parkinsonian gait is noted for the forward stoop of the head and shoulders, with arms slightly abducted and forearms partially flexed; there is decreased arm swing as the feet shuffle.

Steppage gait occurs with footdrop (paralysis of the peroneal nerve); the affected foot is raised higher than normal to prevent dragging of the toe. Bilateral footdrop results in a gait resembling that of a high-stepping horse.

C. Spastic diplegia gait or scissor gait occurs with extrapyramidal disorders. The patient uses short steps and drags the foot; the legs are extended and stiff and cross on each other.

903. Answer: D
Explanation:
The sympathetic supply to the upper extremity is through the grey rami communicantes of C7, C8 and T1 with occasional contributions from C5 and C6. This innervation is through the stellate ganglion. Blocking the Stellate ganglion would effectively cause a sympathetic denervation of the upper extremity.

In some cases the upper extremity maybe supplied by the T2 and T3 grey rami communicantes. These fibers do not pass through the stellate ganglion. These are Kuntz's fibers and have been implicated in inadequate relief of sympathetically maintained pain despite a good stellate ganglion block.

These fibers can be blocked by a posterior approach.

Successful block of the sympathetic fibers to the head is indicated by the appearance of Horner's syndrome. Successful block of the sympathetic block of the upper extremity is indicated by a rise in skin temperature, engorgement of veins on the back of the hand, loss of skin conductance response and a negative sweat test.

Source: Chopra P. 2004

904. Answer: C

905. Answer: C
Explanation:
(Raj Pain Review, 2nd Ed.,)

Primary (idiopathic) and secondary (oropharyngeal cancer) glossopharyngeal neuralgia (cranial nerve 9) are indications for the block of this nerve. Atypical facial pain and tonsillectomy (pre-emptive analgesia) are also indications. Maxillary nerve block is indicated for upper teeth extraction and mandibular is indicated for lower teeth extractions.

Source: Shah RV, Board Review 2003

906. Answer: D
Source: Janata JW, Board Review 2005

907. Answer: D
Explanation:
Source: Day MR, Board Review 2003

908. Answer: B
Explanation:
Reference: Hardman, p 484. Intravenously administered diazepam is the drug of choice for treatment of status epilepticus. Diazepam increases the apparent affinity of the inhibitory neurotransmitter GABA for binding sites on brain cell membranes. The effects of diazepam are short-lasting. Continuing therapy is usually with phenytoin. Other drugs suggested for use in status epilepticus are lorazepam and lidocaine. Chlorpromazine is an antipsychotic. Succinylcholine is a neuromuscular blocking agent. Tranylcypromine is an antidepressant. Ethosuximide is used in petit mal epilepsy.

Source: Stern - 2004

909. Answer: C
Explanation:
Explanation: The sympathetic fibers are carried to the sphenopalatine ganglion via the deep petrosal nerve. The greater petrosal nerve carries the parasympathetic fibers to the ganglion. The greater and lesser palatine nerves innervate the hard palate and the maxillary nerve carries sensory fibers from the middle third of the face.

Source: Day MR

910. Answer: A
Explanation:
(To be continued.)

Progressive muscle relaxation, or a reasonable variation, can serve as a powerful therapeutic technique for treating generalized anxiety, insomnia, headaches, neck tension, and mild forms of agitated depression. It has also effectively been used to reduce pain.

Relaxation therapy is based on the premise and observation that muscle tension is a physiologic response to anxiety and stress. There is a significant reduction in experienced anxiety if tense muscles can be relaxed.
Muscle relaxation also can change the physiologic activation process.

Other effective methods of relaxation include systematic deep breathing, transcendental meditation, and yoga.

Source: Ebert 2004

911. Answer: C
Explanation: (Seidel, 51e, p 785.) The corneal reflex is normal when touching the cornea (trigeminal nerve provides sensation) causes bilateral eye closure (facial nerve provides motor). This reflex will not occur on the side of a facial nerve paralysis.

912. Answer: D
Source: Malanga G, Board Review 2003

913. Answer: E

Here is a pneumonic for cardiac resuscitation of ventricular fibrillation from the ACLS manual: Please Shock-Shock-Shock, EV erybody Shock, And Let's Make Patients Better

Source: Schultz D, Board Review 2004

914. Answer: C
Explanation: A. Ataxic gait is often characterized by clumsiness; when steps are taken, the advancing foot is lifted high. The foot is then brought down in a slapping or stamping manner.

B. Parkinsonian gait is noted for the forward stoop of the head and shoulders, with arms slightly abducted and forearms partially flexed; there is decreased arm swing as the feet shuffle.

C. Spastic hemiplegic gait is the result of spasticity of the involved limb. The limb is moved forward by abduction and circumduction.

D. Steppage gait occurs with footdrop (paralysis of the peroneal nerve); the affected foot is raised higher than normal to prevent dragging of the toe. Bilateral footdrop results in a gait resembling that of a high-stepping horse.

E. Spastic diplegia gait or scissor gait occurs with extrapyramidal disorders. The patient uses short steps and drags the foot; the legs are extended and stiff and cross on each other.

Source: Seidel, Sle, pp 791-792.

915. Answer: C
Source: Giordano J, Board Review 2003

916. Answer: E
Source: Feler C, Board Review 2005

917. Answer: B
Source: Janata JW, Board Review 2005

918. Answer: E
Explanation: (Moore, Anatomy, 4/e, pp 451-453.) Intervertebral disks are strongly reinforced ventrally and laterally by the anterior longitudinal ligaments. The posterior longitudinal ligament, although it is denticulate and attenuated laterally, reinforces the posterior aspect of the intervertebral disk. Because the posterolateral region of the disk is supported least by ligamentous structures, a nucleus pulposus that is herniated through the annulus fibrosus of the intervertebral disk will take the line of least resistance and move posterolaterally into the intervertebral foramen. In so doing, the herniation is apt to impinge on a spinal nerve of the next lower vertebral level.


919. Answer: D
Explanation: (Tierney, 42/e, p 1305.)

A. Lyme disease can produce an encephalitis or demyelination that mimics multiple sclerosis, but infection follows a tick bite. Waterhouse-Friderichsen syndrome is hemorrhagic infarction of the adrenal glands due to fulminant meningococcemia.

B. Cysticercosis is characterized by multiple brain cysts produced by the larval form of the pork tapeworm (Taenia solium).

C. Progressive multifocal leukoencephalopathy (PML) is a human papovavirus (JC virus) seen in patients with AIDS.

Patients present with dementia, visual field defects, weakness, and spasticity.

D. Patients with herpes simplex encephalitis present with a subacute course consisting of personality changes, fever, headaches, and seizures.

Temporal lobes are primarily affected, and the disease is fatal without treatment.

E. Rabies causes personality changes, headache, dysphagia to even water (hydrophobia), and pharyngeal muscle spasm that makes patients appear to be frothing at the mouth.
920. Answer: A
Explanation:
A.Epidural abscess is an exceedingly rare complication of spinal and epidural anesthesia.
* Symptoms from an epidural abscess may not become apparent until several days after placement of the block.
  * The usual symptoms include severe back pain, sensory disturbances, and motor weakness.
  * Patients with epidural abscesses will complain of radicular pain approximately 3 days after development of the back pain.

B.In an epidural hematoma severe back pain is the key feature.

C.Anterior spinal artery syndrome is characterized predominantly by motor weakness or paralysis of the lower extremities.

D.Arachnoiditis starts as a minimal cellular inflammatory response.
  * It may follow trauma, surgery, tumors, infections, hemorrhage or some intrathecal compound administration
  * Onset of symptoms varies from hours to months, resulting in delay in diagnosis
  * Symptoms include:
    - Radicular pain
    - Perineal sensory loss
    - Lower extremity paresis or paralysis
  * Diagnosis can be made by CT, MRI or myelography

E.Meralgia paresthetica is related to entrapment of the lateral femoral cutaneous nerve as it courses below the inguinal ligament and is associated with burning pain over the lateral aspect of the thigh. It is not a complication of epidural anesthesia.

921. Answer: D
Explanation: In the family of conditions known as spina bifida, failure of the dural portions of the developing vertebrae may expose a portion of the spinal cord and its covering. This usually occurs near the caudal end of the neural tube. If there is no projection of the spinal cord or its covering through the bony defect, the condition is generally hidden (spina bifida occulta). However, it is termed spina bifida cystica when spinal material traverses the defect.

A.Rachischisis is an extreme example of spina bifida cystica in which the neural folds underlying the vertebral defect fail to fuse, leaving an exposed neural plate.

B.Anencephaly occurs when the cranial neural tube fails to fuse, thus resulting in lack of formation of forebrain structures and a portion of the enclosing cranium.

C.In a meningocele, this is a sac-like projection formed only by the meninges.

D.If the projection contains neural material, it is a meningomyelocele.

922. Answer: D
Explanation: (Rhoades, pp 118-120.) Activation of the sympathetic nervous system produces relaxation of the smooth muscles surrounding the bronchioles, leading to bronchiolar dilation. The parasympathetic nerves are responsible for penile erection, pupillary constriction, contraction of the ciliary muscle during accommodation for near vision, and gallbladder emptying. Sympathetic stimulation causes ejaculation and pupillary dilation but does not affect the activity of the ciliary muscle or the gallbladder.

923. Answer: C
Explanation: (Raj, Practical Mgmt of Pain, 3rd Ed., page 371;Stoelting, Pharmacology and Physiology of Anesthetic Practice, 3rd Ed., page 168-169)

A.Given the absence of any neurological or GU signs, one would most likely suspect transient radicular irritation and exclude cauda equina syndrome.

B.Anterior spinal artery syndrome often presents with isolated leg weakness.

C.Hyperbaric lidocaine that is injected intrathecally can present as severe low back, buttock, and groin pain, secondary to transient neurological irritation. Treatment is conservative.

D.Spontaneous intracranial hypotension presents with headache and neurological symptoms.

E.The MRI would exclude a new epidural hematoma.
Source: Shah RV, Board Review 2004

924. Answer: D
Explanation: Compression of the common peroneal nerve would affect all muscles innervated by this nerve, including tibialis anterior, peroneus longus, and extensor digitorum longus. Loss of dorsiflexion and eversion is usually complete. The extensors of the knee joint (quadriceps femoris) are supplied by the femoral nerve, whereas the flexors of the knee joint (the hamstrings and gracilis) are supplied by the tibial nerve and obturator nerve, respectively. The gastrocnemius and soleus muscles are the principal plantar flexors of the foot and are innervated by the tibial nerve. The popliteus is the prime medial rotator of the tibia and is also innervated by the tibial nerve.
925. **Answer: A**  
Explanation:  
A. The patient most likely has multiple sclerosis, a demyelinating disease characterized by visual impairment, an afferent pupillary defect (Marcus Gunn pupil), diplopia, nystagmus, limb weakness, spasticity, hyperreflexia, extensor plantar reflexes, vertigo, ataxia, dysarthria, scanning speech, emotional lability, and bladder dysfunction.  
Patients with optic neuritis are at risk for developing blindness.  

B. Friedreich’s ataxia is an autosomal recessive disease in which young patients present with pes cavus foot deformity, spasticity, areflexia, ataxia, and cardiomyopathy.  

C. Patients with acute transverse myelitis initially present with back pain followed by weakness and loss of sensation below the level of the pain.  
Often, there may be bladder and bowel incontinence.  
Transverse myelitis may be seen after vaccination or infections.  

D. Brown-Sequard syndrome (cord hemisection) is characterized by contralateral loss of pain and temperature and ipsilateral spasticity, weakness, hyperreflexia, extensor plantar reflex, and loss of proprioception (vibration and position sense).  

E. Patients with syringomyelia have bilateral paralysis, muscle atrophy, and fasciculations along with pain and temperature sensory loss in a shawl-like or capelike distribution.  
Source: Tierney, 42/e, pp 983–984.

926. **Answer: A**  
Explanation:  
(Bonica, 3rd Ed., page 1587; Raj, Pain Review, 2nd Ed., page 139)  
Source: Shah RV; 2003

927. **Answer: C**  
Source: Raj, Pain Review 2nd Edition

928. **Answer: D**  
Explanation:  
Explanation: The pterygopalatine fossa is bordered medial by the palatine bone, anteriorly by the maxillary sinus, posteriorly by the medial pterygoid plate and superiorly by the sphenoid sinus.  
Source: Day MR

929. **Answer: A**

930. **Answer: C**  
Explanation:  
the patient needs a head CT to evaluate for possible subarachnoid hemorrhage. The subsequent step would be a spinal tap, assuming no mass lesion or shift.

931. **Answer: C**  
Source: Malanga G, Board Review 2003

932. **Answer: C**  
Explanation:  
The pain noted by this patient may include musculoskeletal pain associated with spondylitis, as well as radicular pain or neurogenic claudication. The first approach should be noninvasive, and NSAIDs are appropriate, because acetaminophen was minimally helpful.

933. **Answer: D**  
Explanation:  
Catatonia, mania, major depression, and acute schizophrenia are established indications of electroconvulsive therapy (ECT). Other indications of electroconvulsive therapy with less evidence of its effectiveness include Parkinson disease, obsessive-compulsive disorder, neuroleptic malignant syndrome, and intractable epilepsy  
Source: Laxmaiah Manchikanti, MD

934. **Answer: E**  
Explanation:  
Bupropion is associated with grand mal seizures in approximately 0.4% (4/1000) of patients treated at doses up to 450 mg/day. This incidence of seizures may exceed that of other marketed antidepressants by as much as 4-fold. This relative risk is only an approximate estimate because of the lack of direct comparative studies. The estimated seizures incidence for Bupropion increases almost 10-fold between 450 and 600 mg/day, which is twice the usually required daily dose (300 mg).  
Source: Laxmaiah Manchikanti, MD

935. **Answer: B**  
Explanation:  
(A) Major depression is a comorbid condition of both somatization disorder and hypochondriasis, but not a major diagnostic feature.  

(B) Somatization disorder is characterized by the recurrence of multiple somatic complaints not accounted for by medical findings. It is a chronic condition with female predominance.  

(C) Delusion is not a common feature of either somatization disorder or hypochondriasis.  

(D) La belle indifference is an associated feature of conversion disorder, where symptoms do not conform to anatomic pathways. Delusional disorder may be a comorbid condition in body dysmorphic disorder.  

(E) Hypochondriasis is a chronic condition characterized by a fear or belief that one has a serious illness despite adequate medical evaluation. Its prevalence is 4% to 9%
of medical outpatients with equal incidence between men and women.
Source: Laxmaiah Manchikanti, MD

936. Answer: C
Explanation:
(A) Major depression is a comorbid condition of both somatization disorder and hypochondriasis, but not a major diagnostic feature.

(B) Somatization disorder is characterized by the recurrence of multiple somatic complaints not accounted for by medical findings. It is a chronic condition with female predominance.

(C) Delusion is the common feature of body dysmorphic disorder.

(D) La belle indifférence is an associated feature of conversion disorder, where symptoms do not conform to anatomic pathways. Delusional disorder may be a comorbid condition in body dysmorphic disorder.

(E) Hypochondriasis is a chronic condition characterized by a fear or belief that one has a serious illness despite adequate medical evaluation. Its prevalence is 4% to 9% of medical outpatients with equal incidence between men and women.
Source: Laxmaiah Manchikanti, MD

937. Answer: E
Explanation:
Blood level can be obtained for all antidepressant drugs. But not all of them have shown a correlation between the therapeutic effect and the blood level.

Plasma level measurements of imipramine, desmethylimipramine, and nortriptyline are unequivocally clinically useful in certain situations. For imipramine, the percentage of favorable responses correlates with plasma levels in a linear manner between 200 and 250 ng/mL, but some patients may respond at a lower level. At levels that exceed 250 ng/mL, there is no improved favorable response, and side effects increase.
Source: Laxmaiah Manchikanti, MD

938. Answer: E
Explanation:
(A) Major depression is a comorbid condition of both somatization disorder and hypochondriasis, but not a major diagnostic feature.

(B) Somatization disorder is characterized by the recurrence of multiple somatic complaints not accounted for by medical findings. It is a chronic condition with female predominance.

(C) Delusion is the common feature of body dysmorphic disorder.

(D) La belle indifférence is an associated feature of conversion disorder, where symptoms do not conform to anatomic pathways. Delusional disorder may be a comorbid condition in body dysmorphic disorder.

(E) Hypochondriasis is a chronic condition characterized by a fear or belief that one has a serious illness despite adequate medical evaluation. Its prevalence is 4% to 9% of medical outpatients with equal incidence between men and women.
Source: Laxmaiah Manchikanti, MD

939. Answer: B
Explanation:
(A) Major depression is a comorbid condition of both somatization disorder and hypochondriasis, but not a major diagnostic feature.

(B) Somatization disorder is characterized by the recurrence of multiple somatic complaints not accounted for by medical findings. It is a chronic condition with female predominance.

(C) Delusion is the common feature of body dysmorphic disorder.

(D) La belle indifférence is an associated feature of conversion disorder, where symptoms do not conform to anatomic pathways. Delusional disorder may be a comorbid condition in body dysmorphic disorder.

(E) Hypochondriasis is a chronic condition characterized by a fear or belief that one has a serious illness despite adequate medical evaluation. Its prevalence is 4% to 9% of medical outpatients with equal incidence between men and women.
Source: Laxmaiah Manchikanti, MD

940. Answer: A
Explanation:
(Goldman, 21/e, p 448.)
The signs and symptoms of fat embolism syndrome are those of adult respiratory distress syndrome (ARDS) in association with musculoskeletal trauma. It usually occurs 2 to 4 days after the injury. The predominant feature is respiratory failure. Petechiae are found in 50 to 60% of patients, generally on the anterior chest and neck, axillae, and conjunctiva. Although fractures of the pelvis may cause life-threatening blood loss and subsequent hypovolemic shock, the patient will probably have other symptoms, such as oliguria, hypotension, pale conjunctiva, clouded sensorium, and cool extremities.

941. Answer: C
Source: Malanga G, Board Review 2003

942. Answer: C
Elevation of pCO2 and acidosis tend to increase the toxic effects of local anesthetics by the following mechanisms: Elevated pCO2 causes cerebral vasodilation, delivering more local anesthetic to the brain.

Decrease in intracellular pH will convert more local anesthetic from the inactive base form to the cationic form which is active on the nerve membranes.

Hypercarbia and acidosis decrease protein binding of local anesthetics increasing the portion of free drug available.

Conversely, decreases in pCO2 and elevations in pH tend to elevate the seizure threshold for local anesthetics by the same mechanisms.

Lidocaine will almost invariably cause CNS effects prior to causing cardiac toxicity. First the patient may complain of dizziness, tinnitus and difficulty focusing eyes. Increasing toxicity causes muscle twitching and tremors involving the face and distal extremities which progresses to grand mal seizures. Cardiac arrhythmias occur late and only with massive overdose. The maximum dose for lidocaine soft tissue infiltration is 300mg without epinephrine and 500mg when epinephrine is added. This does not imply that 300mg can be given directly IV as a bolus dose. The toxic dose for direct intravenous injection of any local anesthetic is much lower than the toxic dose for tissue infiltration. For instance, the tissue infiltration maximum dose for bupivacaine is approximately 200mg whereas doses as small as 50mg have caused cardiac toxicity when administered directly IV.

Bupivacaine has a much higher potential to cause life-threatening cardiac arrhythmias than lidocaine. Whereas lidocaine is a fast-in/fast-out calcium channel blocker that reaches steady state block in one to two heartbeats. In contrast, bupivacaine is a fast-in/slow-out blocker manifesting a blocking action that increases with successive beats and with faster rates creating the potential for malignant re-entrant cardiac arrhythmias. Resuscitation from bupivacaine cardiac toxicity is difficult and may require prolonged efforts with high doses of epinephrine. There is no specific antidote or reversal agent for bupivacaine overdose.

Benzodiazepenes increase the seizure threshold in the brain and are the treatment of choice for local anesthetic induced seizures.

Source: Schultz D, Board Review 2004

943. Answer: A
Explanation: L4 nerve root involvement with L3/4 disc herniation shows weakness of tibialis anterior demonstrated by weakness of foot inversion. Reflexes are patellar and sensation is on the medial leg.

944. Answer: D
Explanation: (Carlson, pp 91-94.)
· The limbic system includes regions of the limbic cortex, as well as a group of interconnected structures that surround the core of the forebrain.
· The limbic system forms a circuit whose primary function was formerly regarded as modulating motivation and emotional responses.
· Studies have described that the hippocampal formation and the limbic cortex that surround it are involved in learning and memory, rather than emotional behavior. However, the remaining sections of the limbic system are responsible for emotions, feelings, moods, and motivation. Thus, limbic system is the site primarily responsible for his learning difficulty, lack of motivation, and emotional feelings.
Source: Ebert 2004

945. Answer: B
Explanation: MRI will most likely reveal a lesion of the parietal lobe. Parietal lobe lesions may produce contralateral hyperpathia and pain (thalamic syndrome) and Gerstmann syndrome (alexia, agraphia, acalculia, right-left confusion, and finger agnosia). Occipital lobe lesions produce partial field defects. Temporal lobe lesions produce seizures, lip smacking, olfactory or gustatory hallucinations, and behavioral changes. Frontal lobe lesions lead to intellectual decline and personality changes. The most common adult primary tumors are gliomas.

946. Answer: A
Explanation: With S-1 radiculopathy, there is reduction of ankle reflex due to gastrocnemius muscle weakness. Dorsiflexion of foot is normal, as this involves the L-4 and L-5 roots. Neurogenic bladder is seen with spinal cord or S-2, S-3, and S-4 root involvement. Babinski sign is seen with spinal cord, not spinal root lesions.
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

947. Answer: B
Source: Racz G. Board Review 2003
948. Answer: A
Explanation:
The tarsal tunnel is bounded by a flexor retinaculum that spans the medial malleolus and the calcaneus. The tibialis posterior, flexor digitorum longus, and flexor hallucis longus tendons and the posterior tibial artery and nerve pass through the tarsal tunnel.
Source: Shah RV, Board Review 2004

949. Answer: A
Explanation:
A. Complicated migraines may be preceded by aura and are headaches accompanied by sensory or motor deficits or muscle palsies.

The patient described is having a specific kind of complicated migraine called an ophthalmoplegic migraine.

A mnemonic for migraine is POUND (Pulsatile, lasts One day, Unilateral, Nausea, and interferes with Daily activities).

B. Basilar artery migraine is a variant of classic migraine in which the aura consists of drop attacks, confusion, blindness, and vertigo (all signs of basilar artery ischemia).

C. Classic migraine is a unilateral headache that is pulsatile and throbbing in nature and is preceded by a prodromal aura consisting of scotomas (black spots), scintillations (light flashes), or hemianopsia.

D. Common migraines lack a prodromal aura.

E. Patients with temporal arteritis are older (>50 years old) and have headaches along with jaw claudication and tenderness over the temporal artery.

950. Answer: C
Explanation:
Improper footwear results in lateral deviations of the great toe, extensor, and flexor hallucis longus tendons (bunion formation). Hammer toe often affects the second toe. The metatarsophalangeal joint is dorsiflexed and the proximal interphalangeal joint displays plantar flexion. A stress fracture of a metatarsal is called a march fracture. Stress fractures result in bone resorption followed by insufficient remodeling due to continued activity. Stress fractures occur in the tibia as well as the metatarsal; examination typically reveals point tenderness and swelling. In genu varum (bowleg), the lateral femoral condyles are widely separated when the feet are placed together in the extended position. In genu recurvatum, the knee hyperextends, and in genu impressum, there is flattening and bending of the knee to one side with displacement of the patella. Pes planus is a flattened longitudinal arch of the foot, often called flat foot. Morton’s neuroma causes pain in the forefoot that radiates to one or two toes with tenderness between the two metatarsals. The pain may be further aggravated by squeezing the metatarsals together.

951. Answer: B
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952. Answer: A
Explanation:
A. Persons with a strong sense of an external locus of control delegate responsibility for their health to an external force, such as fate, powerful others, chance, or God.

B. As outpatients they cannot be relied on to take responsibility for their own care.

C. They can be relied on to follow treatment orders in the hospital, where they are in an authoritarian system.

D. They prefer to make as few decisions as possible about their own health and prefer to accept the authority and orders of their own physician, except if the authority is not present to follow up on them.

E. Patients with a strong sense of internal control tend to
accept responsibility for and control their own health.

This information can be of help to physicians by allowing them to establish follow-up procedures that will ensure maximum compliance.

Source: Ebert 2004

953. Answer: B
Explanation:
(Baum, pp 211-220.)
- Psychophysiological disorders were formerly referred to as psychosomatic illnesses. They are characterized by physical symptoms from organs of the body that have become dysfunctional through an interaction between psychological, biologic (including genetic), and sociocultural factors.
- The most common psychophysiological disorders are hypertension, bronchial asthma, dysmenorrhea, headache, neurodermatitis, peptic ulcer, irritable bowel syndrome, rheumatic arthritis, and ulcerative colitis. Diabetes, along with many other diseases, has a strong psychological component, but is not considered to be a psychophysiological disorder.
Source: Ebert 2004

954. Answer: D
Explanation:
The transverse (palmar) carpal ligament bounds the carpal tunnel, at its volar surface. This ligament is attached to the tubercle of the scaphoid and trapezium on the radial side and the hamate on the ulnar side. This canal transmits the median nerve, but not its palmar branch. Additionally, the canal transmits the flexor digitorum superficialis x4, flexor digitorum profundus x4, and flexor pollicis longus. The radial artery and the FCR do not pass through the tunnel.
Source: Shah RV, Board Review 2004

955. Answer: A
Explanation:
Not all patients with back pain due to arthritic etiology have a herniated disk. There may be arthritic changes which occur in the superior and inferior articular facets that result in back pain.
Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

956. Answer: C
Explanation:
The pathology of trigeminal neuralgia is usually at the ganglion and no benefit is obtained using local anesthetics.
Source: Chopra P, 2004
962. Answer: D
Explanation:
Drugs used for preventive treatment of migraines are tricyclic antidepressants, beta blockers, anticonvulsants and calcium channel blockers. Some of the other drugs used are SSRI (class of antidepressants, NSAIDS, MAO (Monoamine oxidase) inhibitors. Amitriptyline is a tricyclic antidepressant, Topiramate is an anticonvulsant. Verapamil is a calcium channel blocker. Atenolol is a beta blocker. Isometheptene mucate is used for abortive therapy and has no role in prophylactic therapy.
Source: Chopra P, 2004

963. Answer: B
Explanation:
Management of Intrathecal Catheter-Tip Inflammatory Masses: A Consensus Statement
Hassenbusch et Al. Pain Medicine 2002

Inflammatory mass formation at the tip of an implanted intrathecal catheter is a rare but potentially devastating complication of intrathecal drug infusion. Hassenbush et Al. reviewed published and unpublished case reports and their own experiences to recommend methods to diagnose and treat catheter-tip inflammatory masses in the above article.

After comprehensive review, the Hassenbush consensus panel concluded that:

Fluctuations in patients’ subjective symptoms and underlying pain levels are common after the implantation of drug delivery systems, but the occurrence of new or extraordinary complaints that require unexpected analgesic dose changes should alert physicians to consider a catheter-tip mass among other possibilities in the differential diagnosis. Gradual, insidious neurological deterioration weeks or months after the appearance of subjective symptoms was the most common clinical course for catheter tip granulomas before the onset of myelopathy or cauda equina syndrome in cases reported to date.

Physicians should have a low threshold for performing an imaging study to confirm or rule out the presence of a catheter-tip mass in patients with suspicious symptoms or physical findings. Unless medically contraindicated, MRI with and without intravenous gadolinium contrast enhancement is the imaging procedure of choice. CT myelogram is an acceptable alternative and is equally sensitive and reliable. Catheter-tip masses are visualized best on intravenous contrast-enhanced T2-weighted images. The mass appears as an enhancing lesion having the tip of the drug administration catheter embedded within it.

Not all patients with catheter tip granuloma require catheter and pump removal. When catheter tip granuloma is diagnosed, optimal management should take into account the patient’s clinical condition, the wishes of the patient and the available options for chronic pain management. Mildly symptomatic patients with small masses that are diagnosed during investigation of diminished analgesic efficacy or other subjective complaints have been managed safely and successfully without open surgical decompression or removal of the mass. These masses did not significantly compress neural structures, nor compromise neurological function, and were treated with prompt discontinuation of intrathecal drug administration. Shrinkage or disappearance of the mass was documented on follow-up imaging studies after an interval of 2-5 months. Consequently, catheter-tip inflammatory masses that are detected early in the clinical course can be treated safely and effectively by maneuvers directed at modifying rather than removing the drug infusion system. If the decision is made to leave the infusion system in place, the responsible physician eventually must decide whether to continue intrathecal therapy and whether to change the dose, concentration, or the drug(s) being infused. Alternatives to complete removal of the catheter and pump include ceasing or changing drug infusion and:
1. Repositioning of the catheter at a different spinal level.
2. Placing a new catheter to replace the existing catheter.
3. Allowing the catheter and pump to remain dormant for a period of time.

In contrast, patients presenting with paraplegia or progressive myelopathy or with apparently fixed neurological deficits of short duration may require emergent operative intervention because of concern that delayed treatment could foreclose the possibility of neurological recovery. Surgical intervention to remove the mass and/or de-compress the spinal canal has restored neurological function or prevented further neurological deterioration in several reported cases. The extent of resection was limited in some cases owing to adhesions to the spinal cord or nerve roots or because of the ventral location of a mass beneath the thoracic spinal cord. Because the masses were not neoplastic, in several cases the postoperative residual mass gradually shrank or disappeared over time.
Source: Schultz D, Board Review 2004

964. Answer: B
Explanation:
Non-physiological signs described by Waddell include superficial tenderness, axial loading, positive distraction, and simulation.

Overreaction has been removed, thus, 2 positive signs indicate non-physiological behavior which may also be described as malingering.

Somatization disorder is different from malingering or...
conversion disorder.

Non-physiological signs do not confirm disc herniation or fibromyalgia.

965. Answer: B
Explanation: 
(Seidel, 5/e, p 311.) When defects are detected in only one eye, the lesion must be anterior to the optic chiasm. Lesions at the optic chiasm produce a bitemporal hemianopsia because this is where the nasal retinal fibers decussate. The medial longitudinal fasciculus (MLF) is involved with extraocular muscle contraction; a lesion to the MLF bilaterally will not allow either eye to look medially. Lesions between the geniculate body and the visual conecx produce a contralateral upper homonymous quadrantanopsia. A lesion in the visual cortex (occipital lobe) produces similar defects in each eye. Bilateral lesions of the occipital lobes result in complete loss of vision, but pupillary reflexes (fibers end in the midbrain) and extraocular muscle movements remain intact.

966. Answer: D
Explanation: 
Source: Day MR, Board Review 2003

967. Answer: A

968. Answer: C
Explanation: 

Data from cases of extensive cord infarction after transforaminal injection of particulate steroid suggest that large portions of the cervical spinal cord can be infarcted by intra-arterial injection of particulate steroid into the anterior segmental medullary artery. The anterior segmental medullary arteries course through various neural foramina to connect to the anterior spinal artery which in turn delivers blood to the cord parenchyma. Injection of particulate steroid into this artery can disrupt spinal cord blood flow by occluding end-arterioles with microcrystal particles. These particles may exceed 20 microns in diameter and, with intravascular coalescence and/or precipitation, much larger particles may be formed.

The anterior and posterior radicular arteries supply blood to the anterior and posterior spinal nerve roots at every spinal level bilaterally. These arteries do not supply blood to large portions of the spinal cord parenchyma.

The anterior and posterior spinal arteries are deep within the central spinal canal and are not directly accessible by intraforaminal injection.
Source: Schultz D, Board Review 2004

969. Answer: D
Explanation: 
(Fauci, pp 2486-2490.)

Anxiety symptoms are very common in both medically ill patients and those otherwise well. Five to 20% of inpatients have anxiety symptoms and 5 to 20% of general medical outpatients suffer from anxiety states. Patients with anxiety disorders are more likely to seek help from general physicians and to use emergency room services than are patients with other types of mental disorders. Furthermore, it has been documented that over the past 15 years, antianxiety medications have been the most frequently prescribed medication in the U.S. Also, primary physicians write over 80% of these prescriptions. In terms of other mental disorders, over 5% of the U.S. population suffers from mood disorders—including major depressive, bipolar, and dysthymic—yet they are less apt to seek medical help. Panic disorders occur in 1 to 2% of the population and 29% of these persons seek help from emergency room services. Obsessive-compulsive disorder usually begins in adolescence or young adulthood, but is not often recognized by general physicians. Help may not be sought because of the private nature of the disorder.
Source: Ebert 2004

970. Answer: D
Explanation: 
(Sierles, pp 266-269. Ebert, pp 366-377.)

Between 0.5 and 3% of the population experience many vague and fluctuating symptoms in multiple organ systems over time. They are explored with medical tests and treated, but are never cured. The unexplained symptoms can start in childhood, are usually diagnosed by 25 years of age, and can continue many years undiagnosed. The Diagnostic and Statistical Manual of Mental Disorders, 4/e (DSM-IV) lists many relevant symptoms from multiple organ and psychological systems. A diagnosis of somatization disorder (SD) can be made if a patient experiences the following medically unexplained symptoms: 4 pain symptoms, 2 gastrointestinal symptoms, 1 sexual symptom, 1 psychoneurologic symptom, and/or if the physical complaints and social or occupational impairments are in excess of the expected. This “lumping” of so many related and unrelated symptoms into one disorder has resulted in some disagreement among clinicians who argue that it is label-oriented and does not contribute to an understanding of causality or treatment. Nevertheless, it is a serious disorder that should receive more recognition and research.

The symptoms have to concern the patient enough to take
prescribed medication, to change behavior (e.g., to miss work), or to consult a physician. Episodes of symptoms, sometimes intense, typically last 6 to 9 months, with less intense, but continuing symptoms for 9 to 12 months. Generally, SD is a lifelong condition, and patients with SD consider themselves to be sick. Eighty-six percent report that their symptoms are so disabling that their work is limited. Seventy-five percent are not employed full-time, as compared with 33% of patients with other psychiatric diagnosis. When compared with the general population, they are more likely to visit doctors, be hospitalized, and receive unnecessary surgery. Eighty to 90% report past depression, 27% have hysterectomies for non-cancer-related causes, 17 to 25% have irritable bowel syndrome, and 12% experience chronic pain.

SD patients are also at increased risk for panic disorder, phobias, general anxiety disorder, obsessive-compulsive disorder, and alcoholism; 47% have coexisting personality disorders (avoidant, paranoid, and histrionic). Female-to-male ratios between 2: 1 and 20: 1 have been reported.

Patients should establish regular doctor visits (versus responding to symptoms). Physicians should direct conversation to the patients personal life and a healthy lifestyle, while de-emphasizing symptoms and praising tolerance for symptoms.

Source: Ebert 2004

971. Answer: A

Explanation:
Subacromial bursitis may occur as a primary disorder after a blow to the shoulder, but if, it most frequently occurs secondary to degenerative lesions of the rotator cuff and is part of the continuum of the many rotator cuff disorders.

It may be viewed as a separate yet related pathologic condition to calcific tendinitis. Most of the body’s bursae exists in or around the shoulder complex, and they are listed up to 12. The most commonly present bursae locations include the subacromial and subdeltoid.

The subdeltoid and subacromial bursae are really one but are separately named according to their adjacent anatomic structures.

Bursitis will have a swift onset of extremely severe shoulder pain with dramatic tenderness localized to the insertion of the deltoid at the upper middle third of the anterolateral proximal arm. This is in contrast to more diffuse involvement found with impingement of the supraspinatus or biceps tendon or pain found adjacent to the coracoid process at the medial aspect of the shoulder insubcoracoid bursitis.

The patient maintains the shoulder in an adducted position, which keeps the painful lesion away from the acromial undersurface. Elevation is hindered, abduction more so than forward flexion, and a painful arc between 50° and 130° is present whether the movement is active or passive. On palpation, the physician will find exquisite local tenderness over the subacromial bursae, which may feel thickened as compared to the contralateral shoulder. Tenderness may also extend as far down as the bicipital groove. Tests for supraspinatus tendonitis and impingement will be positive in this condition.


972. Answer: E

Explanation:
Four clinical interview questions, the CAGE questions, have proved useful in helping to make a diagnosis of alcoholism. The questions focus on Cutting Down, Annoyance by Criticism, Guilty Feeling, and Eye-Openers. The acronym “CAGE” helps the physician recall the questions:

“C”: Have you ever felt you should cut down on your drinking?

“A”: Have people annoyed you by criticizing your drinking?

“G”: Have you ever felt bad or guilty about your drinking?

“E:: Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover?

Source: Laxmaiah Manchikanti, MD

973. Answer: D

Source: Wirght PD, Board Review 2004

974. Answer: A

Explanation:
The patient most likely has tension headache.

975. Answer: A

Explanation:
(April, 3/e, pp 133, 140.) The deep incisure in the inferior border of the pedicle ensures that the spinal nerve associated with that vertebra will exit through the intervertebral foramen well above the intervertebral disk so that it will not be affected by a herniation at that level. However, a posterolateral herniation (the usual direction) will impinge on the next lower nerve as it courses toward its associated intervertebral foramen. In this case, pain was distributed along the medial side of the leg and foot as far as the great toe—the distribution of the saphenous branch of the femoral nerve (L4). Herniation of the third lumbar intervertebral disk between vertebral bodies L3-L4 would affect nerve L4.

976. Answer: B
Explanation: (Tierney, 421e, p 974.)

Patients with pseudotumor cerebri (benign intracranial hypertension) present with headache and papilledema. They are often obese women in their childbearing years. Other possible causes include hypervitaminosis A and the use of oral contraceptives or antibiotics (tetracycline). Lumbar puncture will reveal an elevated opening pressure. Treatment includes weight reduction and repeated lumbar punctures to reduce intracranial pressure. A complication of pseudo tumor cerebri is blindness; patients with visual changes may require emergency optic nerve sheath decompression.

Pituitary adenomas are benign tumors that may cause a bitemporal hemianopsia and endocrine disturbances, such as hyperprolactinemia (galactorrhea), acromegaly or gigantism, and Cushing’s disease. A ruptured berry aneurysm causes a subarachnoid hemorrhage (SAH). Patients present with the acute onset of severe headache, photophobia, and neck stiffness.

Adults commonly have supratentorial primary brain tumors (astrocytoma including glioblastoma multiforme is the most common), while children have infratentorial primary brain tumors (medulloblastoma is the most common). Overall, metastatic brain tumors are more common than primary brain tumors. The most common metastatic brain tumors come from the Lung, Breast, Skin, Kidney, or GI tract (mnemonic: Lots of Bad Stuff Kills Glia). The headache of tumor is often continuous; exacerbated by coughing, sneezing, movement, or the Valsalva maneuver; and worse in the morning.

977. Answer: B
Explanation: (Guyton, pp 669-671.)

Aphasia is a language disorder in which a person is unable to properly express or understand certain aspects of written or spoken language. It is caused by lesions to the language centers of the brain, which, for the majority of persons, are located within the left hemisphere in the portions of the temporal and frontal lobes known as Wernicke’s and Broca’s areas, respectively. Language disorders caused by memory loss, which could be the result of a hippocampal lesion, are not classified as aphasias.

978. Answer: B

Benzodiazepines, such as diazepam, bind to the GABA receptor/ion channel complex, enhancing GABA-induced Cl⁻ currents related to more frequent bursts of Cl⁻ channel opening by GABA. Kappa and µ receptors are opioid receptors.

979. Answer: E
Explanation: (Tierney, 42/e, pp 797-798.)

The patient most likely has carpal tunnel syndrome (CTS), which is compression of the median nerve by the transverse volar ligament of the wrist. Patients complain of pain and paresthesias of the hand and weakness and atrophy of the thenar muscles. The Tinel sign (tapping the median nerve at the wrist) and Phalen sign (forced wrist flexion) intensify the symptoms. Risk factors for CTS include pregnancy, diabetes mellitus, hypothyroidism, rheumatoid arthritis, amyloid infiltration as seen in patients with multiple myeloma, acromegaly, and repetitive trauma. Ulnar nerve paralysis causes a claw hand deformity. Radial nerve palsy causes wrist drop. Erb-Duchenne palsy (C5-C6) causes weakness of the shoulder and elbow and results in the waiter’s tip position (arm dangling at the side with palm in a backward position with fingers flexed). Klumpke-Dejerine palsy (C8-T1) is a triad of claw hand deformity, absent triceps reflex, and Horner syndrome. Patients with cervical radiculopathy (C6 or C7 root) complain of neck pain that radiates to the arm (radicular pain), dermatomal sensory loss, and decreased reflexes.

980. Answer: B
Explanation: Postherpetic neuralgia is defined as pain persisting beyond the healing of the herpes zoster lesions.

The incidence of postherpetic neuralgia increases with age and occurs in 20% to 50% of patients older than 50 years and greater than 50% in patients older than 80 years.

A, C, D, E. Treatment of established postherpetic neuralgia has been shown to be resistant to interventions and thus can be difficult. Proven therapies include tricyclic antidepressants, anticonvulsants, topical local anesthetics, topical capsaicin, and sympathetic blocks.

B. Oral clonidine, which is used to treat hypertension and opioid withdrawal, has not been shown to be an effective treatment for postherpetic neuralgia.

981. Answer: A
Explanation: Complex regional pain syndrome type I (reflex sympathetic dystrophy) is a clinical syndrome of continuous burning pain usually occurring after an injury or surgery. Patients present with variable sensory, motor, autonomic, and trophic changes.

Complex regional pain syndrome type II (causalgia) exhibits the same features of reflex sympathetic dystrophy, but the etiology is damage to a major nerve.
982. Answer: D

983. Answer: B
Explanation: (Kaplan, pp 885-888.)

In traditional psychoanalytic treatment, analysts purposely reveal very little about themselves to their patients. That is intended to help promote transference-to create an ambiance that facilitates a patient’s ability to transfer his or her past emotional attachments to the psychoanalyst. The analyst becomes a substitute for the parental figure. In positive transference, the patient becomes attached to the analyst to obtain love and emotional satisfaction, where as in negative transference the analyst is seen as an unfair, unloving, and rejecting parental figure. Interpretations of transference may help the patient see the positive or negative feelings as a reflection of previous of emotional entanglements.

Source: Ebert 2004

984. Answer: C
Explanation: Beta-adrenergic receptor blockers cause a slowing of heart rate, lower blood pressure, and lessened cardiac contractility without reducing cardiac output. There is also a buffering action against adrenergic stimulation of the cardiac autoregulatory mechanism. These hemodynamic actions decrease the requirement of the heart for oxygen.

Source: Hardman, pp 855-856

985. Answer: E
Source: Cole and Herring to the evaluation of Permanent Impairment, 2001.

986. Answer: D
Explanation: (Tierney, 42/e, pp 990-991.)

Amyotrophic lateral sclerosis(ALS) is a degenerative disease that is the result of lower (anterior horn cells) and upper (corticospinal tracts) motor neuron loss. Patients present with asymmetric muscle weakness, atrophy, fasciculations, spasticity, hyperactive reflexes, and extensor plantar reflexes. Patients may complain of dysphagia and difficulty holding the head up. Pott’s disease tuberculosis of the thoracic vertebral bodies. Todd’s paralysis is a transient paralysis following a seizure. Werdnig-Hoffmann disease is floppy baby disease; infants present with fasciculations. Poliomyelitis is a 1m motor neuron disease.

987. Answer: C
Source: Raj, Pain Review 2nd Edition

988. Answer: C
Explanation: Spinal shock is a transient phenomenon that occurs with damage to fibers from upper motor neurons. The spasticity that usually develops within a few days of the spinal cord injury is presumed to represent exaggeration of the normal stretch reflexes in the limbs disconnected from upper motor neuron control. The evolution from spinal shock to spasticity is much more typical of spinal cord injuries than it is of cerebrocortical injuries, but even within cerebrocortical injuries there is usually an interval of hours to days during which limbs that eventually become hyperreflexic and spastic are hyporeflexic and flaccid.

Source: Anschel 2004

989. Answer: C
Explanation: Water-soluble drugs such as morphine have a higher potential for inducing delayed respiratory depression through cephalad migration in the CNS.

990. Answer: A
Explanation: The celiac-plexus innervates most of the abdominal viscera, including the pancreas, liver, spleen, kidneys, adrenal glands, biliary tract, omentum, and small and large bowel.

The pelvic organs are supplied by the hypogastric plexus.

991. Answer: B
Explanation: (Raj, Practical Mgmt of Pain, 3rd Ed., page 803) Bilateral lumbar sympathectomies pose an undue risk of ejaculatory dysfunction. Lesions of S2, S3, and S4 parasympathetics may cause erectile dysfunction. Genitofemoral neuralgia may be a complication of lumbar sympathectomy either unilaterally or bilaterally. A left-sided lumbar sympathectomy may inadvertently injury branches of the aorta (including the artery of Adamkiwiecz). Damage to the kidney or ureter can occur on either side.

Source: Schultz D, Board Review 2004

992. Answer: C

This is not a benign procedure. Make sure you understand the difference between this procedure, dorsal rhizotomy, and dorsal ganglionectomy. In this procedure, one is targeting a mixed nerve. Spinal nerve more accurately more describes the entity referred to as a selective nerve root. The term, ‘selective nerve root’ should not be used since it lacks anatomic precision. Nonetheless, it may still be used in the exam.

Hence, lesioning the spinal nerve can cause motor and sensory dysfunction. It should be used to treat pain related to spasticity due to central nervous system damage. It
should be avoided in non-cancer conditions. Sciatic nerve transaction may lead to deafferentation pain and central sensitization. Denervation of those spinal nerves supplying the sciatic nerve may worsen this pain condition. Additionally, sciatic nerve transaction will not cause spasticity.
Source: Schultz D, Board Review 2004

993. Answer: C
Explanation:
(Raj, Pain Review, 2nd Ed., page 313)

Lissauer tractotomy is the goal of the dorsal root entry zone (DREZ) procedure…but all dorsal horn lamina (I-V) may be affected. The DREZ lesion is classically indicated for central nervous system damage related pain: brachial plexus avulsion, stump pain, spinal cord injury pain.

Midline or commissural myelotomy sections those midline fibers just dorsal to the central canal of the spinal cord. The original intent was to lesion crossing spinothalamic neurons, which would eliminate pain, but preserve sensory function. However, pain relief extended caudally, without demonstrable caudal analgesia. This lead several investigators to postulate several alternate pain pathways. A multisynaptic short tract afferent pathway or an anterior tract located in between the posterior columns were proposed. The latter mediate pelvic and epigastric visceral pain. Nonetheless, myelotomy is indicated for bilateral pelvic and perineal pain of malignant origin.

Post-central gyrectomy is not a primary neurosurgical procedure for pain relief and is used for central pain syndromes: thalamic or phantom pain. The post-central gyrus is the principal cortical area for the integration of sensory information.

Bilateral high cervical cordotomy may be responsible for Ondine's curse (sleep induced apnea) and is contraindicated unless performed in a staged fashion.

Unilateral percutaneous cordotomy is among the most useful procedures for unilateral cancer pain below C5. It targets the spinothalamic tract. Radiofrequency energy is used. Electrical stimulation (sensory to obtain a feeling of warmth or coolness on the contralateral side and motor to obtain ipsilateral cervical muscles; ipsilateral contraction of muscles below the neck implies the probe is in the corticospinal tract) is used to identify the lesion target.
Source: Schultz D, Board Review 2004

994. Answer: A
Explanation:
(Raj, Pain Medicine Review, 3rd Ed., 313, Raj, Practical Mgmt of Pain, page 800)

Poorly worded question. Nonetheless, expect a lot of questions to be worded poorly. Spondyloctic changes are common as we age. This finding would support an upper cervicogenic etiology for occipital pain. The other choices would change your management strategy, specifically the presence of an Arnold-Chiari Malformation, posterior fossa tumors, or foramen magnum lesion.
Source: Schultz D, Board Review 2004

995. Answer: D
Explanation:
(Raj, Pain Review 2nd Ed. Page 310, Raj, Practical Mgmt of Pain 3rd Ed., pg. 795)

The main indications for intraventricular infusion of opioids are (1) head and neck cancers and (2) failure of relief with intraspinal opioids in a patient with limited life expectancy, <3months. Typical daily doses range from 0.5 – 7 mg/day and target supraspinal pain pathways.

Duration of action of intraventricular morphine is longer than that administered intraspinally.
Source: Schultz D, Board Review 2004

996. Answer: C
Source: Day MR, Board Review 2005

997. Answer: B
Explanation:
Although plain films may reveal pars defects, CT is the imaging modality which best confirms and characterizes the abnormality.
Source: Bieneman B, Board Review 2005

998. Answer: E
Source: Janata JW, Board Review 2005

999. Answer: C
Explanation:

Explanation: The recommended dose for bupivicaine in peripheral nerve blocks is 175 mg (plain) and 225 mg (with epinephrine). The soldier is now stable and could tolerate a full dose of bupivicaine with epinephrine. The approximate number 200-250 mg of bupivicaine with epinephrine as a maximum dose should be familiar to all pain physicians performing nerve blockade.
Source: Ricardo M. Buenaventura, M.D

1000. Answer: C
Source: Racz G. Board Review 2003

1001. Answer: A
Explanation:
(Fauci, pp 21-24.) The most frequently diagnosed psychological disorders in women are depression, anxiety disorders, bulimia, and anorexia nervosa. Obsessive-compulsive disorders are almost equally distributed between adult men and women (prevalence about 2%), but with a slightly higher prevalence among boys than girls.
Psychological disorders may have a higher prevalence in women because men are more reluctant to consult a physician for emotional problems. Another explanation is that physicians may be more apt to diagnose vague mood and anxiety complaints as psychological if there is no obvious organic basis.

Source: Ebert 2004

1002. Answer: C
Explanation:
(Taylor, pp 108-114.) Negative emotional states of anxiety, depression, anger, frustration, and stress are related to relapse in the treatment of addictive behaviors involved in such disorders as alcoholism, smoking, obesity, and drug addiction. Most patients (about 70%) have negative affects preceding the relapse. The most common negative affect or mood state is anxiety related to the need for the addicting substance to relieve the anxiety. This is followed by anger, frustration, and depression. Furthermore, patients are at increased risk for relapse if they smoke, drink, eat, and so on in an attempt to reduce negative affect.

Source: Ebert 2004

1003. Answer: C
Explanation:
(Kaplan, pp 206-223.) Freud maintained that the superego begins to develop around the age of 5 or 6 as part of the resolution of the Oedipus complex. At the end of the phallic stage of psychosexual development (which lasts from around 211 years of age), children must abandon the sexual and aggressive impulses that were directed toward their parents to avoid the parents' strong disapproval. In abandoning these impulses, children identify with their parents. Part of this identification involves the internalization of parental standards of morality; this internalization marks the beginning of the superego.

Source: Ebert 2004

1004. Answer: A
Explanation:
Slowing of nerve conduction velocity occurs through the region of neurologic impairment. Needle EMG may not show evidence of membrane instability. Motor unit action potentials may have increased amplitude and duration because of collateral innervation, which occurs over time. Somatosensory evoked potentials will be abnormal to varying degrees in the dermatomes of the affected nerve roots. Both F- and H-wave late responses will be abnormal. Fibrillation or sharp waves in tibialis anterior are seen with involvement of L4 nerve root.

Source: Ebert 2004

1005. Answer: C
Explanation:
(Goldman, 21/e, p 2240.)

Internuclear opthalmoplegia (INO) is caused by a lesion in the medial longitudinal fasciculus (MLF) and may be due to glioma in children, multiple sclerosis in young adults, or vascular infarction in the geriatric age group. INO commonly causes paresis of abduction of the ipsilateral eye (patients cannot look medially), horizontal nystagmus in the contralateral abducting eye, and vertical nystagmus with upward gaze, but convergence is intact.

1006. Answer: C
Explanation:
(Tierney, 42/e, pp 786-790.)
Tophaceous gout is characterized by the finding in synovial fluid of monosodium urate crystals that are needle-shaped and strongly negative birefringent (bright yellow when parallel to the axis). Gouty attacks may be precipitated by trauma, medications that inhibit tubular secretion of uric acid (aspirin, hydrochlorothiazide), surgery, stress, alcohol, or a high-protein diet. The patient may have an accumulation of tophi in and around the joints and earlobe. Radiographs may show "rat bite" erosions. Pseudogout is due to calcium pyrophosphate dihydrate (CPPD) deposition disease; the crystals here are rhomboid-shaped and weakly positive birefringent (blue when parallel to the axis). Calcium oxalate deposition disease is usually seen in patients with end-stage renal disease; calcium phosphate deposition disease causes calcific tendinitis or Milwaukee shoulder.

1007. Answer: B

1008. Answer: E
Explanation:
The early signs of digitalis toxicity include loss of appetite and nausea and vomiting. In some patients there may be pain that is similar to trigeminal neuralgia. Pain or discomfort in the feet and pain and discomfort in the extremities may be a feature of digitalis toxicity. Transient visual disturbances have been reported in patients with digitalis toxicity.

Source: Hall and Chantigan.

Source: Hall and Chantigan

1009. Answer: B
Explanation:
(Tierney, 42/e, pp 948-949.)

Cluster headaches are often referred to as "suicide headaches" because of the severity of the symptoms. These recurring headaches are accompanied by facial flushing, nasal stuffiness, tearing, and a partial Horner syndrome (there is no anhidrosis). They are more common in men (the usual age is 20 to 50) than women and are exacerbated by alcohol use. Migraine headaches do not have this timing or duration. Tension headaches are bilateral, nonthrobbling, and symmetric. They are usually located in the frontal or occipital areas of the skull and are thought to be related to muscle contraction. They are often described as being viselike. The headache of sinusitis is not abrupt in
onset or cessation, and patients often have tenderness with percussion of the sinuses. Trigeminal neuralgia (tic douloureux) is a paroxysmal severe facial pain over the distribution of the trigeminal nerve. Women are affected more than men, and patients are usually over the age of 40. The pain of trigeminal neuralgia can be triggered by simply touching the skin near the nostril.

1010. Answer: B
Source: Sizer Et Al - Pain Practice March & June 2003

1011. Answer: B
Explanation:
(Tierney, 42/e, pp 829-831.)
C. A septic joint will usually produce systemic symptoms such as fever.
A. Osteoarthritis produces a short period of morning stiffness and often affects the distal interphalangeal joints.
D. Chondrocalcinosis is a radiologic finding (destructive arthropathy) associated with pseudogout or CPPD crystals.
B. The patient most likely has rheumatoid arthritis since she meets four of the seven criteria as classified by the American College of Rheumatology:
Symmetric polyarthritis for over 3 months
Morning stiffness lasting more than 1 h
Rheumatoid nodules
Arthritis of more than three joint areas
Involvement of the joints of the hands and wrists; patients may have swan-neck deformity (hyperextension of the proximal interphalangeal joints with compensatory flexion of the distal joint), boutonniere deformity (extension of the distal interphalangeal joint), or ulnar deviation of the digits
A positive rheumatoid factor (RF)
Erosions or decalcification on radiographs

1012. Answer: B
Explanation:
(Berne, 3/e, pp 117-118.)
The gamma motoneurons innervate the intrafusal fibers of the muscle spindles. When a skeletal muscle contracts, the intrafusal muscle fiber becomes slack and the Ia afferents stop firing. By stimulating the intrafusal muscle fibers during a contraction, the gamma motoneurons prevent the intrafusal muscle fibers from becoming slack and thus maintain firing during the contraction.

1013. Answer: B
Source: Malanga G, Board Review 2003

1014. Answer: B
Source: Malanga G, Board Review 2003

1015. Answer: E (All)
Source: Goodwin J, Board Review 2005

1016. Answer: E (All)
Source: Goodwin J, Board Review 2005

1017. Answer: A (1, 2, & 3)
Explanation:
Source: Day MR, Board Review 2005

1018. Answer: D (4 only)
Explanation:
Explanation: A Horner’s Syndrome consists of ptosis, miosis, and facial anhydrosis. Other evidence of a sympathectomy of the face includes conjunctival injection and nasal congestion.
Source: Day MR

1019. Answer: B (1 & 3)
Explanation:
Inflammatory arthritis can involve the MCPs, PIPs (proximal interphalangeal), wrists, elbows, MTPs (metatarsalphalangeal), and IPs (interphalangeal) joints of the feet but osteoarthritis does not. Osteoarthritis can involve the base of the thumb (carpometacarpal joint) and hips, but inflammatory arthritis does not. Both inflammatory and osteoarthritis can involve the DIPs (distal interphalangeal), knees, ankles, and shoulders.
Source: Chad S. Boomershine, MD, PhD

1020. Answer: A
Explanation:
Explanation: Acupuncture is believed to work by a counterirritant mechanism that causes pain and a release of endogenous endorphins. The rise of endorphins in the CNS causes the pain relief. This effect can be blocked by naloxone. Acupuncture has been associated with complications such as pneumothorax and pericardial tamponade due to organ perforation. Alternative therapies are becoming more popular and are frequently used by the public. Doctors should ask about the use of alternative therapies in their patients.
Spinal cord stimulation is effective for neuropathic pain. It is most likely to be effective for single or bilateral extremity neuropathic pain but has a reasonable chance for success in cases of intractable neuropathic back and leg pain. It is not indicated for axial somatic, nociceptive pain except in the case of intractable angina where it has proven to be efficacious.

Source: Schultz D, Board Review 2004

The early signs and symptoms of lithium toxicity include coarse tremor, dysarthria, and ataxia; the later signs and symptoms include impaired consciousness, muscular fasciculations, myoclonus, seizures, and coma. The higher the lithium levels (and the longer they have been elevated), the worse the symptoms of lithium toxicity.

Source: Laxmaiah Manchikanti, MD

Massage is the scientific application of force by the hands to soft tissue, usually the skin, fascia, muscles, tendons, and ligaments, to produce a therapeutic effect. Several types exist:

- Stroking or Effleurage
- Kneading and Pétrissage
- Friction Massage
- Percussion, Tapotement, or Clapping
- Stroking and Vibration
1036. **Answer: C (2 & 4)**  

1037. **Answer: D (4 Only)**  
Source: Bieneman B, Board Review 2005

1038. **Answer: D (4 Only)**

Explanation:
1. In factitious disorder, the patient intentionally produces physical or psychological signs or symptoms that are under voluntary control and are not explained by any other underlying physical or mental disorder.

2. There is no serious organic disorder.

3. The primary motivation of the behavior is to assume the sick role. In factitious disorder however, there is no secondary gain such as economic benefit or avoidance of legal responsibilities. In malingering, the patient has an obvious recognizable secondary gain in producing their signs and symptoms such as avoiding work or prosecution, or obtaining financial gain.

4. Absence of secondary gain is the main feature that differentiates factitious disorder from malingering.

Source: Laxmaiah Manchikanti, MD

1039. **Answer: E (All)**  
Source: Wirght PD, Board Review 2004

1040. **Answer: E (All)**  
Source: Racz G, Board Review 2003

1041. **Answer: B (1 & 3)**

Explanation:
Wallerian degeneration occurs following axonal loss hence, Sunderland class 1 (conduction block) is false. Sunderland class 5 implies complete nerve transection, which is false.

Other truisms would be Sunderland class 2,3,4—the epineurium is intact in all of these. Seddon’s axonotmesis would be true, because Wallerian degeneration would occur and the epineurium, endoneurium, and perineurium are intact.

Source: Shah RV, Board Review 2004

1042. **Answer: A (1, 2, & 3)**

Explanation:
The 4 findings include superficial, nonanatomic tenderness; a positive simulation response; a discrepancy between results of examination of the same body part in two different positions; and non-physiologic regional disturbances of sensation, pain or weakness.

1. Positive Waddell’s signs greatly increase the likelihood that psychosocial factors are playing a major role in the patient’s complaints.

2. Patients with two or more positive test results may not respond favorably to surgery.

3. Positive Waddell’s signs are indicative of the need for a comprehensive evaluation.

4. Patients with positive Waddell’s signs may not respond well.

1043. **Answer: A (1, 2, & 3)**

Explanation:
S1 nerve root injury may be associated with weakness of plantar flexion, occasional cramping in the calf, and absent ankle jerk. Atrophy of the gastrocnemius, soleus, and hamstrings may occur. Sagging of the gluteal fold and loss of gluteal muscle tone also suggest S1 involvement. Radicular pain in the knee is suggestive of L3 injury.

Source: Wall, p

1044. **Answer: D (4 Only)**

Explanation:
A peripheral nerve injury to the ulnar nerve causes weakness only in the ring and little fingers. However, a central lesion or disc herniation will cause weakness in all fingers. The flexor digitorum superficialis, which flexes the proximal interphalangeal joint, has only median nerve innervation, and is affected by root injury to C8 and peripheral injuries to the median nerve, but not peripheral injury to ulnar nerve.


1045. **Answer: C (2 & 4)**

Explanation:
The Quebec Task Force on Whiplash Associated Disorders graded the severity of whiplash, as follows:
Grade I (neck pain)
Grade II (neck pain + musculoskeletal injury)
Grade III (neck pain + neurological injury)
Grade IV (neck pain + bony injury)

1, 3. They recommended plain radiographic imaging in grades II, III, IV

2, 4. They recommended CT or MRI in grades III, IV

Source: Shah RV: 2003 (Bonica, 3rd Ed., page 1010)

1046. **Answer: C (2 & 4)**

Explanation:
To check the setup of a brachial plexus block, one can perform the four P’s (push, pull, pinch, pinch). Have the patient push or extend the forearm (triceps muscle is...
innervated by the radial nerve), pull or flex the forearm (biceps muscle is innervated by the musculocutaneous nerve), pinch the index or second finger (median nerve), pinch the little finger (ulnar nerve).
Source: Hall and Chantigan

1047. Answer: A (1, 2, & 3)
Source: Sizer Et Al - Pain Practice March & June 2003.

1048. Answer: C (2 & 4)
Source: Malanga G, Board Review 2003

1049. Answer: A (1, 2, & 3)
Source: Sizer Et Al - Pain Practice March & June 2003

1050. Answer: A (1, 2, & 3)
Source: Sizer et al - Pain Practice - March & June 2004

1051. Answer: E (All)
Explanation:
All can cause ulnar nerve palsy. Choice 4 is responsible for cubital tunnel syndrome.
Source: Shah RV, Board Review 2004

1052. Answer: D (4 Only)
Explanation:
The anterior interosseous nerve usually innervates the FPL, index and long finger FDPs, and PQ. It does not mediate superficial sensation. Patients may present with loss of flexion of the distal phalanxes of the thumb and index finger. They lose their pinching ability.
Source: Shah RV, Board Review 2004

1053. Answer: C (2 & 4)
Explanation:
Tadpole lesions occur as a consequence of myelin delamination and accumulation into the paranodal bulbous aspects of the internode. They are early signs of demyelination and remyelination, which occur as a consequence of chronic entrapment and ischemia. The myelin is of irregular thickness in the entire region of the entrapment: thinner near the area of entrapment and thicker away from the middle. These are polarized, such that it looks as if a tadpole is swimming away from the region of the entrapment.
During Wallerian degeneration, the axons in the distal segment breakdown and begin to look like ovoids. Nerve swelling proximal to the entrapped nerve can be visibly seen during surgery and it represents fibrosis, increased connective tissue, and endoneurial swelling.
Source: Shah RV, Board Review 2004

1054. Answer: B (1 & 3)

1055. Answer: A (1, 2, & 3)
Explanation:
CTS has variable clinical presentations, but patients often complain of numbness of the index finger, thumb, and ring fingers. Pain may extend from the wrist, hand, forearm, elbow, and shoulder. Sensory testing may reveal loss of 2 point discrimination in the thumb, index, and middle fingers. Hypothenar muscles are in the distribution of the ulnar nerve, whereas the thenar muscles are in the median nerve distribution.
Source: Shah RV, Board Review 2004
pattern.

Overreaction: inappropriate facial or verbal expressions, withdrawal of limbs from touch, or posture contortions. Flopping on the floor with twisting of the spine, limiting hypersensitivity to joint examination, and cries of pain or fear on superficial examination.

4. Cervical facet joint pain is diagnosed with a certain degree of certainty, utilizing controlled diagnostic blocks - but not by physical examination.

Source: Shah RV, Board Review 2004

1058. Answer: C (2 & 4)
Explanation:
The C5 neurological level supplies sensation to the lateral arm, from the summit of the shoulder to the elbow. The purest patch of axillary nerve sensation lies over the lateral portion of the deltoid muscle. This localized sensory area within the C5 dermatome is useful for indicating specific trauma to the axillary nerve, as well as general trauma to the C5 nerve root.

1059. Answer: C (2 & 4)
Explanation:
Reference:
Pyogenic cervical epidural abscess and discitis following stellate ganglion block
Vadodaria B.S., Bridgens J. and Richmond M. Anaesthesia 2001 56:9 (871-873)

Disc space infection (commonly called discitis) is a rare but potentially catastrophic complication of injection into the spinal region. Any time a needle enters an intervertebral disc there is a potential for this complication. Epidural abscesses and/or vertebral body osteomyelitis are common consequences of untreated disc space infection. Symptoms may include increasingly severe neck pain worse with movement, fevers and general malaise. Rapid diagnosis and aggressive treatment are of vital importance to prevent severe neurological consequences and life-threatening infection. The most important early diagnostic maneuvers include laboratory analysis with ESR and C-reactive protein and emergent MRI scan. ESR is a somewhat nonspecific test and C-reactive protein is more specific and sensitive for discitis. The MRI may be relatively normal early on in the course of discitis and repeat MRI scans may be used to re-evaluate and track progression or regression of disc space infection. MRI is also important to rule out epidural abscess which may require surgical intervention. Irradiation of disc space infection in the relatively avascular disc is difficult and treatment typically includes intravenous antibiotics for a period of many weeks.

Discitis is most commonly associated with discography but can occur after stellate ganglion block since the needle is in close proximity to the disc and disc penetration can occur. In the cervical region, the esophagus is a left-sided structure and any needle traversing the esophagus and entering a cervical disc has the potential to cause disc space infection. For this reason, cervical discography is always performed from the right side. Left-sided stellate ganglion block therefore has an inherently higher risk of discitis.
Source: Schultz D, Board Review 2004

1060. Answer: A (1, 2, & 3)
Explanation:
Carpal tunnel syndrome is one of the most common, best defined, and most carefully studied entrapment neuropathies. It affects middle-aged females between 40 and 60 years of age, that is menopausal women, a characteristic suggestive of a hormonal aberration as a causative development of this disorder. The most common cause of carpal tunnel syndrome is an idiopathic non-specific flexor tenosynovitis that may simply arise from chronic repetitive occupational stress, both in males and females. Carpal tunnel syndrome may occur acutely after lunate bone dislocation or from a Colles' fracture and requires immediate medical attention as to prevent acute nerve ischemia.

*Carpal tunnel syndrome may be subdivided into one of the four categories.
- An increase in volume or tunnel content secondary to non-specific tenosynovitis of the flexor tendons within the carpal tunnel
- Thickening or fibrosis of the transverse carpal ligament
- Alteration of the osseous modus of the carpus caused by fractures, dislocations or arthritic joint changes
- Tumor or systemic disease

*The median nerve has both sensory and motor branches. During median nerve compression at the carpal tunnel sensory, abnormalities usually occur first only to progress to motor involvement as the pathology evolves.

*Clinical findings are proportional to the degree of nerve damage, which in turn is related to the severity of compression and not to the duration of compression.

*The differential diagnosis includes C6 radiculopathy with reflex changes and EMG studies showing denervation out of the median nerve territory and sensory loss of the 6th cervical dermatome.

*Other diagnosis include:
- Pronator syndrome referring to compression of the median nerve by pronator muscle as it passes through the heads of that muscle and to a lesser extent, by fibrous bands near the origin of deep flexor muscles known as the
lacertus fibrosis and flexor digitorum superficialis arcade, and even less commonly by the ligament of Struthers, an anomalous structure found in about 1% of the population. Pronator syndrome may also be expressed with median nerve paresthesias mimicking those of CTS, it differs in several aspects. Night pain, symptoms brought on by wrist movement, intrinsic weakness of opponents and abduction movements, as well as positive Phalen and Tinel wrist signs are not common to this condition.

- Other conditions include anterior interosseous syndrome.

- Carpal tunnel is diagnosed with positive Phalen's test or Tinel's sign where the median nerve is easily depolarized when mechanically stimulated by direct tapping over the palmaris longus tendon over the flexor retinaculum. However, positive findings occur only in approximately 45% of all cases.


1061. Answer: D (4 Only)
Explanation:
Reference:
Horlocker, et al.
Regional Anesthesia in the Anticoagulated Patient: Defining the Risks (The Second ASRA Consensus Conference on Neuraxial Anesthesia and Anticoagulation)

At the 1998 Consensus Conference on Neuraxial Anesthesia and Anticoagulation, it was concluded that NSAIDs, in and of themselves, did not appear to present significant risk to patients for developing spinal-epidural hematomas. There is no recommendation to discontinue aspirin or other NSAIDS prior to spinal injection in the ASRA guidelines.

Normal clotting requires 40% or greater clotting factor activity. An INR value of 1.5 indicates approximately 40% activity of clotting factors and essentially normal ability to clot. This value has been derived from studies correlating hemostasis with clotting factor activity levels. INR below 1.5 is considered safe for spinal injection.

Cyclooxygenase (COX) exists in 2 forms. COX-1 regulates constitutive mechanisms, while COX-2 mediates pain and inflammation. NSAIDs inhibit platelet COX 1 and COX 2 and prevent the synthesis of thromboxane A2. NSAIDS inhibit platelet function. Celecoxib (Celebrex) and Rofecoxib (Vioxx) are anti-inflammatory agents that primarily inhibit COX-2, an inducible enzyme which is not expressed in platelets. Therefore COX 2 inhibitors do not cause platelet dysfunction. Platelets from patients who have been taking COX 2 inhibitors have normal platelet adherence to subendothelium and normal primary hemostatic plug formation. After single and multidosing regimens, there have not been findings of significant disruption of platelet aggregation, nor is there a history of undesirable bleeding events.

It has been suggested that the Ivy bleeding time is the most reliable predictor of abnormal bleeding in patients receiving antiplatelet drugs. However, there is no evidence to suggest that a bleeding time can predict hemostatic compromise and this test is not recommended to determine safety of spinal injection in the setting of platelet inhibition.

Source: Schultz D, Board Review 2004

1065. Answer: E (All)

1066. Answer: A (1, 2, & 3)
Source: Raj, Pain Review 2nd Edition

1067. Answer: C (2 & 4)

1068. Answer: B (1 & 3)
Source: Sizer et al - Pain Practice - March & June 2004

1069. Answer: E (All)
Source: Racz G. Board Review 2003

1070. Answer: C (2 & 4)
Explanation:
Short-term immobilization of the neck may be appropriate to provide relief. However, prolonged immobilization leads to weakening of the cervical spine musculature. Non-steroidal anti-inflammatory medications provide analgesia and reduce inflammation may be beneficial in the short-term. Benzodiazepines are not analgesics despite their purported efficacy in reducing muscle spasm. Rather, biofeedback and psychological counseling may be more appropriate. Other less addicting and sedating ‘muscle relaxants’ maybe more appropriate, e.g., baclofen or tizanidine. Cervical medial branch neurotomy in those selected with placebo controlled diagnostic blocks may benefit patients with whiplash.

Source: Shah RV: 2003 (Bonica, 3rd Ed., page 1010)

1071. Answer: B (1 & 3)
Explanation:
The term failed back surgery syndrome refers to persistent or recurrent chronic pain after one or more surgical procedures on the lumbosacral spine. Management is mired in controversy.
However, radiofrequency denervation of the lumbar facets compares favorably to re-operation in long-term follow-up. Spinal cord stimulation also compares favorably to re-operation. Although SCS is best described for radicular pain, it may also be useful for axial pain. Peripheral nerve stimulators are usually reserved for patients with a well-defined single peripheral nerve injury and complex regional pain syndrome. Placement must be proximal to the injured nerve. In radiculopathy, this would require placement in a retrograde approach parallel to the descending root, i.e., in the lateral recess and out towards the foramen. This technique, although described, is not widely practiced. Translaminar epidural steroids have been mired in controversy in patients without previous back operations. Only a few studies have demonstrated short-term benefit in failed back surgery syndrome and they too, probably won’t escape the attack of the evidence-based axe.

Source: Shah RV: 2003 (Bonica, 3rd Ed., pages 1544-1547)

1072. Answer: D (4 Only)
Explanation:
Flexor digitorum superficialis is supplied by a median nerve, C8. Similarly, flexor digitorum profundus are also supplied by median and ulnar nerves, C8. Lumbricals are supplied by median and ulnar nerve, C8 and T1. The flexor digitorum profundus, which flexes the distal interphalangeal joint, and the lumbricals, which flex the metacarpal phalangeal joint, usually receive innervation from the ulnar nerve on the ulnar side of the hand and from the median nerve on the radial side. If there is any injury to the C8 nerve root, the entire flexor digitorum profundus becomes weak, with secondary weakness in all finger flexors. If, however, there is a peripheral injury to the ulnar nerve, weakness will exist only in the ring and little fingers. The flexor digitorum superficialis, which flexes the proximal interphalangeal joint, has only median nerve innervation, and is affected by root injury to C8 and peripheral nerve injuries to the median nerve.

C8 supplies sensation to the ring and little fingers of the hand and the distal half of the forearm. The ulnar side of the little finger is the purest area for sensation of the ulnar nerve, which is predominantly C8, and is most efficient location for testing.


1073. Answer: D (4 Only)
Source: Racz G, Board Review 2003

1074. Answer: D (4 Only)
Explanation:
(Raj, Practical Mgmt of Pain 3rd Ed., page 347-9)

1. A drop arm test is consistent with a complete rotator cuff tear. A complete rotator cuff tear does not allow the arm to remain abduced, but partial tears can also be assessed by this test. The patient abducts the arm to 90 degrees and is asked to lower it slowly after the examiner taps the extended forearm. Complete tears in the supraspinatus tendon cause the arm to fall immediately to the side, and partial tears prevent full strength or range.

2. A ‘popeye’ deformity signifies a tear of the long head of the biceps tendon

Impingement is most pronounced with forward flexion and thumbs down or abduction. Mechanical entrapment of the rotator cuff occurs at the space between the humeral head and coracocromial arch narrows.

3. The Yergason Test for Biceps Tendon Stability—while the patient is sitting or standing, the examined elbow is flexed at the waist and a fist is made with the hand. The examiner has one hand on the patient’s elbow and the other on the distal forearm. The patient resists shoulder external rotation (examiner pulls outward on distal forearm) and pulls downward at the elbow. If the long biceps tendon pops out of its groove, pain arises near the anterior lateral humeral head.

4. Shoulder impingement produces pain with abduction.

Source: Shah RV, Board Review 2004

1075. Answer: A (1, 2, & 3)
Explanation:
Therapeutic exercises are beneficial and should include a lumbar flexion program, modified abdominal strengthening, trunk and lower extremity flexibility, bicycling, and uphill treadmill walking.

1076. Answer: B (1 & 3)
Source: Cole EB, Board Review 2003

1077. Answer: A (1, 2, & 3)
Source: Wirght PD, Board Review 2004

1078. Answer: E (All)
Explanation:
(Raj, Practical Mgmt of Pain 3rd Ed., Box 24-3)

COMMON SOURCES OF INGUINAL OR THIGH PAIN

FRACUTURE TO FEMUR

Traumatic
Pathological
Stress

MUSCLE
Strain
Fever-related myalgias
Dermatomyositis
Polymyositis

VASCULAR
Sickle cell crisis
Iliofemoral venous thrombosis
Avascular necrosis of femoral head

REferred
Inguinal or femoral hernia
Inguinal or femoral lymphadenitis
Degenerative arthritis of the hip joint (severe)

Source: Shah RV, Board Review 2004

1079. Answer: E (All)

1080. Answer: D (4 Only)
Source: Cole EB, Board Review 2003

1081. Answer: E (All)
Explanation:
Other factors that affect the incidence of spinal headache include the number of dural punctures and the position of the needle bevel.
The incidence of spinal headache increases as the number of dural punctures increases.
The incidence of headache has been shown to be less when the dural fibers are split longitudinally rather than when they are cut while the needle is held in a transverse direction.
The timing of ambulation relative to dural puncture has not been shown to affect the incidence of postspinal headache.

1082. Answer: B (1 & 3)
Source: Sizer et al - Pain Practice - March & June 2004

1083. Answer: B (1 & 3)
Explanation:
Morphine and baclofen are FDA approved for intrathecal use. Clonidine is approved for epidural but not intrathecal use. Ziconitide is still awaiting final approval.
Source: Trescott AM, Board Review 2004

1084. Answer: A (1, 2, & 3)
Explanation:
Source: Day MR, Board Review 2003

1085. Answer: B (1 & 3)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed.)
Special Tests

1. McMurray Test
   This maneuver was developed to assess for posterior meniscal tears and provides an excellent clinical evaluation. The patient lies prone. The examiner flexes the symptomatic knee and rotates the tibia on the femur in external and internal rotation. Valgus stress is added with the leg in external rotation, and the knee is then slowly extended. An audible or palpable click suggests a meniscal tear.

2. Patellar Femoral Grinding Test
   Chondromalacia patellae is a common problem in degenerative knees, and there are common complaints of increasing pain on arising from a chair or climbing stairs. Exacerbation of symptoms can be elicited by compressing the patella into the femoral groove. With the knee extended, pressure is placed over the patella, which is guided along the groove. Crepitance should also be palpated with flexion and extension of the knee while the examiner’s hand is over the patella.

3. Apley’s Compression or Grinding Test:
   A confirmatory test for meniscal tears can be accomplished by compressing the meniscus. The patient lies prone and the affected knee is flexed to 90 degrees. The examiner applies downward pressure against the heel as he or she rotates the tibia against the femur. Pain suggests a meniscal tear and correlates medially or laterally with the location of injury.

4. Drawer Signs
   These tests were designed to examine injury or disruption of the cruciate ligaments. The patient may be sitting or lying prone with the knee flexed at 90 degrees and the foot fixed in place (the examiner may sit on the foot). The tibia is then drawn toward the examiner; if the tibia slides beneath the femur, it is a positive anterior drawer sign and identifies a torn anterior cruciate ligament (ACL). If sliding occurs beneath the femur when the tibia is pushed away from the examiner, it is a positive posterior drawer sign and identifies a torn posterior cruciate ligament (PCL).

Source: Shah RV, Board Review 2004

1086. Answer: E (All)

1087. Answer: E (All)
Source: Nader and Candido – Pain Practice. June 2001

1088. Answer: A (1, 2, & 3)
Source: Sizer Et Al - Pain Practice March & June 2003

1089. Answer: E (All)
Source: Nader and Candido – Pain Practice. June 2001

1090. Answer: D (4 Only)

1091. Answer: E (All)
Explanation:
Diagnostic criteria for temporal arteritis (giant cell arteritis) include the presence of typical histopathologic features on temporal artery biopsy, a swollen and tender scalp artery, elevated
ESR, and the disappearance of the headache with 48 h
after steroid therapy.

The headache is usually temporal, of variable severity,
having a constant, boring quality, and is
temporarily relieved by analgesics such as aspirin.

Polymyalgia rheumatica as well as general malaise,
anorexia, or mild fever frequently
accompanies this systemic disease

1092. Answer: C (2 & 4)
Explanation:
1, 3. Numbness in the leg and inability to move it suggest
an accidental subarachnoid or epidural injection, a rare
but possible complication of this block.

2, 4. The completeness of a lumbar sympathetic block can
be ascertained by skin temperature measurements and
increases in blood flow. The latter can be determined by a
number of techniques, including laser Doppler flowmeter,
occlusion skin plethysmography, transcutaneous oxygen
electrodes, and mass spectrometry.

1093. Answer: B (1 & 3)
Explanation:
(Raj, Pain Review, 2nd Ed., page 267-269)

The SHP block is indicated for chronic pains in the pelvis.
It is composed of sympathetic fibers, unlike the inferior
hypogastric plexus. The IHP receives parasympathetic
branches of the sacral nerve: nervi erigentes. The ideal
placement should have the needle anterior to the L5-S1
disc, with dye spread inferiorly along the sacral
promontory. Needle entry is initially at L4-5, but this
procedure can be done transdiscally through L5-S1.
Source: Shah RV, Board Review 2003

1094. Answer: A (1, 2, & 3)
Source: Sizer et al - Pain Practice - March & June 2004

1095. Answer: B
Explanation:
Reference: Benzon HT, et al. Comparison of particle sizes
of different steroids and the effect of dilution.
Anesthesiology 2007; 106: 331-338.
Explanation: Benzon and colleagues looked at undiluted
and diluted forms of commonly used steroids in spinal
injections. Using a Zeiss LSM 510 laser scanning confocal
microscope they showed that dexamethasone sodium
phosphate and betamethasone sodium phosphate were
pure liquid with no identifiable particles. Depomedrol,
Kenalog, Celestone and a compounded form of Celestone
all had particles at every dilution
Source: Ricardo M. Buenaventura, M.D

1096. Answer: A (1, 2, & 3)
Explanation:
Administration of epidural steroids by interlaminar or
transforaminal approach is one of the commonest
approaches to treating spinal pain and radicular pain.
Steroids decrease inflammation by inhibiting
phospholipase A2, thus inhibiting the formation of
arachidonic acid, prostaglandins and leukotrienes.
Steroids reduce inflammatory edema around the inflamed
nerve root and improve microcirculation. They block the
conduction of nociceptive c fibers. By restricting the
formation of prostaglandins they may decrease
sensitization of the dorsal-horn neurons.
Source: Chopra P, 2004

1097. Answer: C (2 & 4)
Explanation:
Lateral epicondylitis, or tennis elbow, commonly involves
the origin of extensor-supinator muscle mass in the:
Extensor carpi radialis brevis
Extensor digitorum communis
Extensor carpi radialis longus
Extensor carpi ulnaris
Supinator

The extensor carpi radialis is most commonly involved.
Probably the position of wrist flexion, elbow extension,
and forearm pronation stretch the tendon over the
prominence of the radial head. The most common cause
of lateral epicondylitis is cumulative trauma.

Provocative testing involves elbow in extension. Further,
in lateral tennis elbow, pain is reproduced when one asks
the patient to make a fist and extend the wrist. Sudden,
severe pain is elicited at the lateral epicondyle when the
examiner forcefully extends the patient's wrist.
Source: Saidoff DC, McDonough AL.Critical Pathways in
Therapeutic Intervention.Extremities and Spine, St. Louis,

1098. Answer: C (2 & 4)

1099. Answer: A (1, 2, & 3)
Source: Wright PD, Board Review 2004

1100. Answer: A (1,2, & 3)

1101. Answer: A (1, 2, & 3)
Source: Sizer et al - Pain Practice - March & June 2004

1102. Answer: A (1,2, & 3)

1103. Answer: E (All)
Source: Racz G.Board Review 2003

1104. Answer: B (1 & 3)
Source: Saidoff DC, McDonough AL.Critical Pathways in
1105. Answer: D (4 Only)  
Source: Racz G. Board Review 2003

1106. Answer: C (2 & 4)  
Explanation:  
Waddell's signs were developed to suggest a possible non-organic etiology of back pain as opposed to suggesting malingering. These tests and the clinician's clinical impression may suggest a slower than expected recovery.

The Waddell's signs include (SONDSup, mnemonic):

Simulation  
Load the spine with the weight of your hand on top of the patients head to reproduce lowback pain

Simulation of twisting the trunk when rotating the shoulders and hips in unison to reproduce the back pain

Non-anatomic distribution of pain

Aberrant pain drawing

give away weakness, i.e., inconsistent effort during range of motion

Distraction

Sitting knee extension to test sciatic tension while distracting the patient with a knee, foot, or peripheral pedal pulse examination

If negative, then the supine straight leg maneuver should be negative

Superficial or subcutaneous tenderness, not deep muscle tenderness

1. Evoked back pain with deep palpation of the lumbar paraspinals is not a Waddell's sign

2. Evoked back pain with en-bloc trunk rotation, i.e., moving the shoulders and hips in unison is a Waddell's sign

3. Refusal to examination is not a Waddell's sign

4. Superficial tenderness is a Waddell's sign  
Source: Shah RV; 2003 (Bonica, 3rd Ed., page 1523)

1107. Answer: A (1, 2, & 3)  
Explanation:  
Surgical section of piriformis muscle is performed on extremely rare occasions.

1108. Answer: E (All)  
Explanation:  
Modern imaging studies have demonstrated that lesions in all regions of the brain can cause central pain. Bonica's Management of Pain, 3rd ed, page 441.

1109. Answer: D (4 Only)
adjacent digits. Specifically, a patient cannot pinch a piece of paper between the ulnar side of the thumb and radial side of the index finger. The patient compensates by using median nerve muscles: FPL, FDS, Index FD. Muscles in choices A,B,C are involved

Although the hypothenar muscles are affected by the ulnar nerve palsy, they are not part of Froment's sign

Source: Shah RV, Board Review 2004

1121. **Answer: A**

Explaination:

Explanation: Nortriptyline is a tricyclic antidepressant and can provide wanted sedation and analgesia. Alcohol and NSAIDS can cause gastritis. Alcohol is known to interfere with a person’s quality of sleep. Rare hydrocodone should not cause hyperalgesia.

Source: Ricardo M. Buenaventura, M.D

1122. **Answer: D (4 Only)**


1123. **Answer: E (All)**

Explaination:
As a result of vomiting, dehydration may be a significant problem. This should be corrected, and pain is frequently relieved by rehydration only. Subcutaneous Imitrex is effective, but injection may need to be repeated due to pain recurrence. Parenterally administered Phenothiazines may be effective but may cause postural hypotension. Dihydroergotamine (DHE) and antiemetic (metoclopramide) Reglan are usually effective in refractory migraine. (New England Journal of Medicine 329, pp. 1476-1482, 1993; Ref. 2, pp. 101-103).

Source: Neurology for the Psychiatry specialty Board Review By Leon A. Weisberg, MD

1124. **Answer: A (1, 2 & 3)**

Explaination:
Reference: Bonica, p 629.
The electromyogram (EMG), peripheral nerve conduction studies (NCs), late response studies, and somatosensory evoked potentials (SEPs) help to characterize the nature and location of the abnormality being studied. Determination of the cause of the abnormality can occur only after integration of the information obtained from the physical examination, history, and electrodiagnostic and radiologic studies. Muscle biopsy is not a component of electrodiagnostic evaluation.

Source: Kahn and Desio

1125. **Answer: A (1,2, & 3)**

Explaination:
(Shah, et. al. Recurrence and spread of CRPS, accepted to American Journal of Orthopedics)

Complex regional pain syndrome (CRPS) describes a constellation of sensory, motor, autonomic, and trophic disturbances, with spontaneous pain and hyperalgesia being the most persistent signs (Birklein). The term, 'CRPS', was introduced by a consensus group in 1996, to describe a variety of painful conditions that follow injury (Stanton-Hicks). They are characterized by spontaneous pain or hyperalgesia, a distal regional predominance, variable progression over time, impairment of motor function, and a magnitude and duration exceeding the expected clinical course of the inciting event; temperature, skin color, edematous, and sudomotor abnormality are or have been present (Stanton-Hicks 1998). The two subtypes include all the foregoing features but either exclude (CRPS I) or include (CRPS II) a peripheral nerve injury (Stanton-Hicks).

Motor dysfunction is not required for diagnosis, but is often present in most patients with CRPS

Source: Shah RV, Board Review 2004

1126. **Answer: D (4 Only)**

Source: Wirght PD, Board Review 2004

1127. **Answer: E (All)**

Source: Wirght PD, Board Review 2004

1128. **Answer: D (4 Only)**

Source: Wirght PD, Board Review 2004

1129. **Answer: A (1, 2, & 3)**

Explaination:
Reference: Horlocker, et. Al.
Regional Anesthesia in the Anticoagulated Patient: Defining the Risks (The Second ASRA Consensus Conference on Neuraxial Anesthesia and Anticoagulation)

When heparin is administered in the setting of spinal injection, there is increased risk for spinal bleeding in certain situations. The concurrent use of medications such as oral anticoagulants antiplatelet medications that affect other components of the clotting mechanisms may increase the risk of bleeding complications for patients receiving standard heparin. Guidelines for spinal injection in the patient receiving standard, unfractionated heparin were established over 2 decades ago and are well outlined in the ASRA article listed above.

Placement of a needle into the spinal canal and withdrawing a catheter from the spinal canal are both
possible causes for epidural hematoma in the heparinized patient and recommendations for performing either spinal injection or catheter removal are similar. The following table illustrates the relative risk of spinal injection in various scenarios involving heparin:

During SC heparin (mini-dose) prophylaxis, there is no contraindication to the use of neuraxial techniques. The risk of neuraxial bleeding may be reduced by delay of the heparin injection until after the block and may be increased in debilitated patients after prolonged therapy. Because heparin-induced thrombocytopenia may occur during heparin administration, patients receiving subcutaneous heparin for greater than 4 days should have a platelet count assessed prior to neuraxial block and prior to catheter removal.

With unfractionated heparin, administration should be delayed for 1 hour after needle or catheter placement. In patients receiving heparin pre-procedure, spinal injection and/or catheter removal should be performed after heparin cessation only after clotting status has returned to normal as determined by activated partial thromboplastin time (aPTT). Typically spinal injection should be delayed for at least 4 hours after the last heparin dose and indwelling neuraxial catheters should be removed 2 to 4 hours after the last heparin dose. Re-heparinization after spinal intervention should be delayed for 1 hour or longer.

The biochemical and pharmacologic properties of LMWH differ from those of unfractionated heparin and patients receiving LMWH heparin are considered to be higher risk for spinal hematoma. During the first 5 years of LMWH use in the United States, some 60 epidural hematomas were reported, prompting a “black box” warning label by the FDA. The most relevant differences with LMWH are its’ pro-longed half-life, its’ irreversibility with protamine and the lack of monitoring of the anticoagulant response with standard lab testing. Prolonged LMWH therapy may be associated with an accumulation of anti-Xa activity and fibrinolysis.

Patients on preoperative lower dose LMWH for thromboprophylaxis can be assumed to have altered coagulation. In these patients, needle placement should occur at least 10 to 12 hours after the last LMWH dose. Patients receiving higher doses of LMWH for anticoagulation, such as enoxaparin 1 mg/kg every 12 hours, enoxaparin 1.5 mg/kg daily, dalteparin 120 U/kg every 12 hours, dalteparin 200 U/kg daily, or tinzaparin 175 U/kg daily will require delays of at least 24 hours to assure normal hemostasis at the time of needle insertion. Source: Schultz D, Board Review 2004

1130. Answer: E
Explanation: Coffee can help reduce headaches. SAMe can help reduce pain and disability form osteoarthritis. Magnesium has been used in Fibromyalgia and other neuropathic states with anecdotal benefit. Glucosamine may help in knee joint arthritis of a moderate to severe degree.
Source: Ricardo M. Buenaventura, M.D

1131. Answer: D (4 only)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 532-533)
Vapocoolant Spray
Topical anesthetics like ethyl chloride and fluorine-methane are used in the technique of spray-and-stretch to treat the many myofascial and musculoskeletal pain syndromes typically characterized by the presence of trigger points. The trigger point and its referral zone are sprayed in unidirectional parallel sweeps while the muscle is maintained at a passive stretch.
Source: Shah RV

1132. Answer: E
Explanation:
Explanation: The above four statements are taken directly from the first few paragraphs of this section in Borenstein’s book. They are conservative common-sense statements that most pain physicians will agree with in the approach to recurrent back pain after lumbar spine surgery.
Source: Ricardo M. Buenaventura, M.D

1133. Answer: C (2 & 4)
Explanation:
Source: Day MR

1134. Answer: D (4 only)
Explanation:
Explanation: The superior hypogastric plexus is a retroperitoneal structure and lies anterior to the fifth lumbar vertebra, left of the midline, just inferior to the aortic bifurcation.
Source: Day MR

1135. Answer: B (1 & 3)
Explanation:
Explanation: Nociception thru sympathetic afferents via superior and inferior plexi to the spinal cord T10-L2 and via parasympathetic afferents to the pelvic plexus and
spinal cord at S2-S4

2nd Ed. Mosby 2003
Source: Day MR

1136. Answer: B (1 & 3)
Explanation:
A temperature drop can be expected underneath the cold pack and at a depth of 1 cm.
No temperature drop should be expected away from the cold pack or at depth of 2 cm.

BACKGROUND: Cold packs are commonly used by clinicians, trainers, and others, often as an interim treatment for many acute conditions, but the extent of temperature change associated with this form of treatment remains poorly understood. METHODS: In 16 healthy male and female volunteers aged 25.4 +/- 3.6 yr, we monitored skin temperature, and recorded the temperature of the quadriceps muscle at 1, 2, and 3 cm depths below the skin, before, during, and after 20 min of cold pack treatment. RESULTS: The results revealed a slight rise in temperature at all four levels during the 5 min pretreatment period, but significant temperature falls at the skin and 1 cm levels beginning from 8 min of treatment (P < 0.001). There was no significant change in tissue temperature at the 2.0 cm or 3.0 cm depths throughout treatment. However, after treatment, cutaneous temperature and the temperature at 1.0 cm depth rose rapidly, returning to baseline levels at variable intersubject times. As these superficial temperatures rose, there were concurrent falls in the temperatures at the 2.0 cm and 3.0 cm levels. Thus, the deeper tissues lost heat (cooled) simultaneously as the superficial tissues rewarmed; to the extent that 40 min after treatment, the deeper levels were cooler than the cutaneous and 1.0 cm levels.
CONCLUSION: 1) Cold pack therapy produces significant temperature falls in cutaneous and subcutaneous superficial tissues without directly changing the temperature of tissues at or more than 2.0 cm below the skin; and 2) the temperature gradients of both layers of tissue reverses after treatment, indicating that the deep tissue beneath is at least one of the sources of heat used to rewarmed the cooled superficial tissue. The latter finding underscores the importance of the hemodynamic interchange between superficial and deep tissues, and offers an explanation for the reduction of pain, muscle spasm, and edema observed with cold therapy in several clinical situations.
Source: Shah RV

1137. Answer: D (4 only)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 540)

TRACTION
In the therapy of traction, the soft tissues of the body (cervical or lumbar spine) are stretched by a pulling (traction) force. This force can be applied either manually or mechanically. Factors that determine the amount of separation (and thus pain reduction) include the position of the spine, the angle of pull, and the amount of force applied. Traction, when applied properly, may prevent adhesion formation, subdue painful muscle spasm, relieve pain, maintain anatomic alignment, and prevent or correct a deformity.
Contraindications to the use of these techniques include acute trauma, inflammation, hypermobility, increasing pain, and any spinal condition in which movement is to be avoided.
Source: Shah RV

1138. Answer: B (1 & 3)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 536-538)

All of the above are forms of therapeutic exercise.
Therapeutic exercise may be broken down into Range of Motion, Resistive, Endurance Activities, Desensitization, Breathing Exercises, Relaxation, Coordination Training, and Proprioceptive Neuromuscular Facilitation. The goals of therapeutic exercise include:
Strengthening the muscles.
Improving flexibility of muscles and tendons.
Increasing endurance.
Reinstating the normal pattern of motion to the affected muscles and to the body in general.
Active Assisted Range-of-Motion Exercises
Active assisted movement is movement through a ROM by means of a muscular contraction supplemented by an external force either manually or mechanically
Isometric Resistive Exercise
Isometric exercise is a static form of motion performed by contraction against an immovable object.
Isokinetic Resistive Exercise
Isokinetic exercise is a form of dynamic motion in which the velocity of muscle shortening or lengthening—and thus the velocity of the body part—is controlled by a rate-limiting device
Proprioceptive Neuromuscular Facilitation
In general, proprioceptive neuromuscular facilitation (PNF) is used to promote or hasten the response of the neuromuscular mechanism of the proprioceptors. It employs total patterns of movement, specific patterns of facilitation, and techniques for expediting motor learning.
Source: Shah RV

1139. Answer: C
Explanation:

Explanation: In a series of three elegant studies Derby and colleagues looked at ways to minimize false positive lumbar discograms. They found false positive discograms could be drastically reduced, if not eliminated, by limiting the injectate to 3.5cc, and maximum pressures to 50 PSI above opening in degenerated discs and 80 PSI in normal appearing discs. Pain score had to be 4 or greater in one study and 6 or greater in the other two to be positive so this was left out of the question. Six or greater seems to be the final number Derby settled on for a disc to be positive if the other criteria were met

Source: Ricardo M. Buenaventura, M.D

1140. Answer: E (All)
Explanation: (Raj, Practical Mgmt of Pain, 3rd Ed., page 530)
All of the above are contraindications to heat therapy, including scar tissue.
Source: Shah RV

1141. Answer: C (2 & 4)
Source: Wirght PD, Board Review 2004

1142. Answer: D (4 only)
Explanation: Diathermy is contraindicated in patients with spinal cord stimulation
Source: Shah RV

1143. Answer: D (4 only)

Superficial Deep
Hot Packs Ultrasound
Paraffin iathermy
Heat Lamps Phonophoresis
Hydrotherapy
Fluidotherapy
Source: Shah RV

1144. Answer: E (All)
Explanation: (Raj, Practical Mgmt of Pain, 3rd Ed., page 530)
Conduction is the transfer of thermal energy between two bodies in direct contact.
Convection uses movement of a transfer medium such as air or water to convey the change in temperature.
Conversion is the transformation of energy in one form, such as sound, into another, such as heat.
Radiation is the thermal energy given off by any object whose surface temperature is above absolute zero.
Source: Shah RV

1145. Answer: A (1, 2 & 3)
Explanation: Mayo Clinic Proceedings 2006;81(8):1086-1092
Propanolol, a beta-blocker, in divided doses that total 40-80mg/day (adults) or 1-3 mg/kg (child >6 y/o), has high quality evidence for migraine prophylaxis. This drug may help co-existing panic attacks, anxiety, and essential tremor. Reduce the dose with rizatriptan.

Divalproex sodium or valproic acid is an anticonvulsant, used for the treatment of seizures (e.g., absence, grand-mal or tonic-cloic), bipolar disorder and for the prophylaxis of migraine. The mechanism of action may be due to inhibition of GABA transaminase. Doses are slowly titrated. Divalproex is only FDA-approved for adults (250 mg BID), but are used in children (10-20 mg/kg/day in divided doses). Serious side effects include pancreatitis, fatal hepatotoxicity in the first six months of treatment (particularly for children age 0-2), fetal neural tube defects, and increase in androgen levels. Monitor liver function tests, particularly in the first six months.

Topiramate is an anticonvulsant that has recently been approved by the FDA, in adults, for migraine prophylaxis. Dose titration should be slow. For example, 25 mg qD x 1 week and then at weekly intervals, increase by 25 mg. Doses do not typically exceed 200mg/day, in adults. In children (not FDA approved), 0.25-1mg/kg in divided doses is typical. Patients may develop weight loss, fatigue, poor concentration, nausea, and paresthesias.

Other drugs for migraine prophylaxis( evidence ranking)
1.Beta blockers: timolol=propanolol>atenolol, metoprolol, and nadolol
2.TCAs: amitriptyline>nortriptyline, protriptyline, doxepin
3.Ca++ blockers: veerapamil
4.SSRIs: fluoxetine>paroxetine
5.Anticonvulsants: Divalproex, topiramate> gabapentin
6.NSAIDs
7.Magnesium, Vitamin B2 (riboflavin)

Caffeine may be used acutely in the treatment of migraine, but NOT in the prevention of migraine. In fact, caffeine is considered to be a trigger.
Source: Shah RV
1146. Answer: B (1 & 3)
Explanation:
The Ashworth Scale is a 5 point scale for muscle tone.
0 = normal tone.
1 = slight spastic catch.
2 = more marked resistance.
3 = describes considerably increased tone.
4 = muscle immobilized by spasticity.
Tizanidine is a short acting drug used for the management of spasticity and clinical trials use the Ashworth Scale.

The Nurick Scale is a 6 point scale for myelopathy/spinal cord compression. Spinal cord compression can cause spasticity, but it is not the only etiology of spasticity. Cervical spine myelopathy can lead to functional impairment. The Nurick Scale is used to track outcomes, following surgical treatment of surgical spondylotic myelopathy.

The Numerical Pain Rating Scale recognizes the off-label use of this drug. A number of studies have used pain rating scales to measure the efficacy of tizanidine: Fogelhold R, Murros K. Tizanidine in Chronic Tension Type Headache. Headache 32(10): 509-513

The Borg Scale is a simple method of rating perceived exertion. It is a 15 point scale used for perceived exertion during exercise and in assessing dyspnea in patients with COPD or emphysema.

Source: Shah RV

1147. Answer: A (1, 2 & 3)
Explanation:
Tizanidine is metabolized by the CYP1A2 enzyme system. CYP1A2 inhibitors, particularly ciprofloxacin and fluvoxamine, are contraindicated. Ciprofloxacin can raise the Cmax and AUC of 4mg of tizanidine by 7-fold and 10-fold, respectively. CYP1A2 inhibitors include fluoroquinolones, antiarrythmics (amiodarone, mexilite, propafenone, veerapamil), cimetidine, famotidine, acelyvor, and ticlopidine. Alcohol, not a CYP1A2 inhibitor, can elevate AUC by 20%. Acetaminopen does not affect the pharmacokinetics of tizanidine.
Source: Shah RV

1148. Answer: B (1 & 3)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., page 350 and 358)
1. Straight Leg Raising Test: Lasègue's Sign: This maneuver can test for sciatic irritation (pain radiating to the ankle of the tested leg), but sciatic nerve irritation must be differentiated from hamstring tightness (pain descending the posterior thigh only). The patient lies supine, with the examiner stabilizing the heel in one palm and helping to maintain knee extension with the other. Elevation is performed to 70 to 90 degrees at the hip, and radiating pain to the ankle confirms the test.
2. Thomas Test: The Thomas test evaluates flexion contracture of the hip. The patient lies supine with the pelvis level, allowing a T to form between the vertebral spine and the pelvic brim. The hip is passively flexed with the examiner's other hand beneath the small of the back, feeling the point where the lumbar curve is lost. The thigh is then placed against the abdominal wall. The other leg is flexed in similar fashion and allowed to descend to the examination table. If compensation is attempted by arching
3. MILGRAM TEST: The patient lies supine and attempts to hold the heels about 2 inches off the table for 30 seconds. Intrathecal pressure is elevated, and if a mass lesion or herniated disk is present, the patient lowers the affected side to the table.
4. Fabere (Flexion-Abduction-External Rotation [-Extension]) Test: This maneuver tests for sacroiliac or hip pathology. The patient is supine with the knee and hip flexed and the heel on the opposite knee, allowing the femur to lower to the examination table. This position results in hip abduction and external rotation. Groin pain suggests hip pathology, and sacroiliac pain suggests a problem with this joint.
Source: Shah RV, Board Review 2004

1149. Answer: E (All)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., pages 534-535)
The gate control theory explains the mechanisms of pain relief associated with TENS treatment for many conditions. Simply stated, this theory proposed the existence of a gating mechanism in the dorsal horns of the spinal cord, where there is an interaction between the small-diameter, unmyelinated C fibers, which mediate the transmission of pain, and the larger-diameter, myelinated A fibers, which mediate sensation of light touch and pressure.

High-intensity, low-frequency stimulation (frequently referred to as “acupuncture-like TENS”) also appears to offer pain relief, the effects of which can be reversed with naloxone, an opiate antagonist.

Central to the discussion of the rationale of TENS therapy are its various stimulation parameters. Low-frequency and high-pulse [width] energy cause strong, rhythmic muscle contractions.
Source: Shah RV

1150. Answer: D (4 only)
Source: Janata JW, Board Review 2005

1151. Answer: E (All)
1152. Answer: A (1, 2, & 3)

Explanation:
(Raj, Pain Review 2nd Ed.,)

The ophthalmic nerve block or the retrobulbar block is indicated for intraocular surgery and rarely, refractory eye pain.

The goal of the technique is to block the ophthalmic branch of V1, the oculomotor nerve, abducens nerve, and trochlear nerve. The ciliary ganglion (located in the intracone area) will also be blocked. If this latter parasympathetic output is blocked, then one will see papillary dilatation (mydriasis) and not contraction (miosis).

Cardiac arrhythmias have been reported with this block including the oculo-bradycardic reflex. Globe perforation is possible with needle entry. Lid ptosis occurs since the oculomotor nerve supplies the superior levator palpebra. Recall that the sympathetics supply the superior tarsal muscle (elevates the eyelid) and may be spared...nonetheless, the block of the oculomotor will cause ptosis.

Source: Shah RV, Board Review 2003

1153. Answer: D (4 Only)

Explanation:
(Raj, Pain Review 2nd Ed.,)

The median nerve is the target in carpal tunnel injections and is the compressed nerve in carpal tunnel syndrome. However, the nerve (with the hands in supinated anatomic position) is located LATERAL to the palmaris longus and MEDIAL to the flexor carpi radialis. It is not indicated for analgesia of the 5th digit. The median nerve that traverses the carpal tunnel provides sensory innervation to the radial 3 ½ digits on the palmar side, but distally on the radial side. The palmar branch of the median nerve does not go through the carpal tunnel and innervates the radial palm. The roof of the carpal tunnel is formed by the flexor retinaculum; hence the injection should be deep and not superficial to this structure.

Source: Shah RV, Board Review 2003

1154. Answer: C (2 & 4)


1155. Answer: A (1, 2, & 3)

Explanation:
Post laminectomy syndrome pain and cancer pain are well recognized indications for intrathecal opioids. CRPS is considered an indication if the trial gives good relief. Although MSO4 intrathecally may decrease some of the spasticity, intrathecal baclofen is probably more appropriate.

Source: Trescot AM, Board Review 2004

1156. Answer: B (1 & 3)

Explanation:
1. This patient has migraine without aura. Of the agents listed, only Ergotamine tartrate is generally considered of use to abort a headache.
2. Verapamil and amitriptyline hydrochloride may be used as prophylactic (preventive) therapy.
3. Several medications are effective as prophylactic agents in the treatment of migraine. These include amitriptyline hydrochloride, propranolol, verapamil, and valproate. Most experts recommend initiating prophylactic therapy only when headaches occur at least one to two times per month.
4. Metoclopramide hydrochloride, sumatriptan, and Ergotamine tartrate are appropriately used to treat an acute attack of migraine, and should not be prescribed on a daily basis. Daily use of these medications can establish a rebound syndrome that results in a daily headache. Oral contraceptives may be associated with either an increase or decrease in the frequency of migraines, but are not generally used as a treatment for migraine. Some experts recommend not prescribing OCPs for patients with migraine for fear of increasing the risk of a stroke, although OCPs are probably safe to use in most patients with common migraine.

Source: Wirght PD, Board Review 2004

1157. Answer: A (1, 2, & 3)

Source: Wirght PD, Board Review 2004

1158. Answer: A (1, 2, & 3)

Explanation:

Source: Day MR, Board Review 2003

1159. Answer: B (1 & 3)

Explanation:
(Raj, Pain Review 2nd Ed.,)

The correct order is greater occipital nerve (C2), least occipital nerve (C3), lesser occipital (C2-3), greater auricular nerve (C2-3), auriculotemporal (V3), supraorbital (V1), and supratrochlear (V1).

Source: Shah RV, Board Review 2003

1160. Answer: A (1, 2, & 3)


1161. Answer: D (4 Only)

Explanation:
Serotonin syndrome is a toxic hyperserotonergic state that develops soon after initiation or dosage increments of the offending agent. Patients may differ in their susceptibility to the development of serotonin syndrome. The (+) enantiomer of tramadol inhibits serotonin uptake. Tramadol is metabolized to an active metabolite, M1, by the CYP2D6 enzyme. If this metabolite has less
serotonergic activity than tramadol, inhibition of CYP2D6 by sertraline may cause increased levels of serotonin in the synaptic cleft.

1162. Answer: A (1, 2, & 3)  
Explanation:  
(Raj, Pain Medicine Review 2nd Ed.) The sphenopalatine ganglion and greater palatine nerve block can be performed intra-orally through the greater palatine foramen (on the hard palate). The greater palatine nerve block, however, can only be performed intra-orally. A glossopharyngeal nerve block can be performed extra- or intra-orally. The infra-orbital nerve block can be performed extra-orally or intra-orally  
Source: Shah RV, Board Review 2003

1163. Answer: A (1, 2, & 3)  

1164. Answer: D (4 Only)  
Source: Rac G. Board Review 2003

1165. Answer: A (1, 2, & 3)  
Explanation:  
Tramadol is not commonly used in intrathecal pumps.  
Source: Trescot AM, Board Review 2004

1166. Answer: D (4 Only)  
Source: Cole EB, Board Review 2003

1167. Answer: B (1 & 3)  
Source: Goodwin J, Board Review 2005

1168. Answer: B (1 & 3)  
Explanation:  
1. There is difficulty sustaining attention, disorganized thinking, and perceptual disturbances.  
2. Acute alcoholic hallucinosis may start without a drop in blood alcohol concentration, and without delirium, tremor, or autonomic hyperactivity  
3. Hallucinations are usually auditory and paranoid and may last more than 10 days.  
4. In delirium tremens, the patient is confused, with prominent tremor and psychomotor activity, disturbed vital signs, autonomic dysfunction with dilated pupils, and a slow reaction to light. Hallucinations are usually of the visual type  
Source: Laxmaiah Manchikanti, MD

1169. Answer: A (1, 2, & 3)  
Source: Wright PD, Board Review 2004

1170. Answer: D (4 Only)  
Source: Wright PD, Board Review 2004

1171. Answer: D (4 Only)  
Source: Rac G. Board Review 2003

1172. Answer: C (2 & 4)  
Explanation:  
(Dawson, Entrapment Neuropathies, The American Academy of Physical Medicine and Rehabilitation-- http://www.aapmr.org/education/archive/emg0102e.htm.)  
Okay, a Trick Question. Entrapment at the proximal aspect of Guyon’s canal before the deep motor branch sends a hypothenar motor branch could cause weakness of the hypotheners and intrinsics. However, even, then hypotheners are often mildly involved and can be overlooked. Froment’s sign occurs with ulnar palsies as described earlier  
Source: Shah RV, Board Review 2003

1173. Answer: A (1, 2, & 3)  
Explanation:  
1, 2, 3. With C7 nerve root irritation, fibrillation or sharp waves are detected in triceps. With C8 involvement, fibrillation or sharp waves are detected in intrinsic hand muscles. With C6 involvement, fibrillation or sharp waves are detected in biceps  
4. With C5 involvement, fibrillation or sharp waves are detected in deltoid and biceps.  

1174. Answer: A (1, 2, & 3)  
Explanation:  
1. Hyperventilation causes cerebral vasoconstriction and decreased delivery of local anesthetic to the brain.  
2. Administration of 100% O2, during a seizure helps to prevent hypoxia in a patient who otherwise might not be breathing.  
3. Hyperventilation includes hypokalemia and respiratory alkalosis, both of which result in hyperpolarization of nerve membranes and elevation of the seizure threshold.  
4. Hyperventilation also raises the patient’s pH (respiratory alkalosis) and converts lidocaine into the nonionized (nonprotonated) form, which crosses the membrane easily. This has no beneficial effect.  
Source: Cole EB, Board Review 2003

1175. Answer: B (1 & 3)  
Source: Cole EB, Board Review 2003

1176. Answer: D (4 Only)  
1177. **Answer: A (1, 2, & 3)**
Source: Goodwin J, Board Review 2006

1178. **Answer: A (1, 2, & 3)**

1179. **Answer: D (4 Only)**
Source: Sizer Et Al - Pain Practice March & June 2003

1180. **Answer: D (4 Only)**
Source: Sizer et al - Pain Practice - March & June 2004

1181. **Answer: D (4 Only)**
Source: American Board of Anesthesiology, In-training examination

1182. **Answer: D (4 Only)**
Source: American Board of Anesthesiology, In-training examination

1183. **Answer: D (4 Only)**
Explanation:
(Raj, Pain Review 2nd Ed.)
Since the stellate ganglion is located at C7-T1, a C7 approach requires less volume. The risk of recurrent laryngeal nerve palsy is less at C7. There is an increased risk of pneumothorax due to the dome of the lung. The landmarks at C6 are easier to identify by palpation. The C6 transverse process is easier to identify than C7; the C6 transverse process, specifically the tubercle, is known as Chassaignac’s tubercle. There is an increased risk of pneumothorax at C7 as is the case for a supraclavicular approach to the brachial plexus.
Source: Shah RV, Board Review 2003

1184. **Answer: C (2 & 4)**
Explanation:
1. Virtually all pain arising in the thoracic or abdominal viscera is transmitted via the sympathetic nervous system in unmyelinated type C fibers.
3. Visceral pain is caused by any stimulus that excites nociceptive nerve endings in diffuse areas.

Distention of a hollow viscus causes a greater sensation of pain than does the highly localized damage produced by transecting the gut.
4. Visceral pain is dull, aching, burning, and non-specific.
Source: Hall and Chantigan

1185. **Answer: A (1,2, &3)**
Source: Raj, Pain Review 2nd Edition

1186. **Answer: A (1, 2, & 3)**
Explanation:
1, 2. Patients who are at increased risk of headache after dural puncture include parturients and young patients.
3. Use of large-bore needles and glucose-containing local anesthetics also can raise the risk of spinal headache.

Spinal headaches result from leakage of CSF through the dural sheath.

The headache is typically frontal or occipital in location and is worsened by sitting or standing up.

4. There is some evidence that the incidence of spinal headache is less after a dural puncture made through the paramedian approach.
Source: Hall and Chantigan

1187. **Answer: A (1, 2, & 3)**
Source: Goodwin J, Board Review 2005

1188. **Answer: D (4 Only)**
Source: Goodwin J, Board Review 2005

1189. **Answer: D (4 only)**
Source: Day MR, Board Review 2005

1190. **Answer: E (All)**
Source: Bieneman B, Board Review 2005

1191. **Answer: D (4 only)**
Explanation:
(Raj, Practical Management of Pain, 3rd Ed., page 638)

The ligamentum flavum, which consists of more than 80% elastin, is the toughest of the three ligaments. It usually is easy to identify by its increased resistance to advancement of the epidural needle and ability to inject air or saline solution. It spans from the anterior surface of the cephalad lamina of an adjacent pair of vertebrae to the posterior aspect of the lower lamina. The ligamenta flava arise embryonically from two separate laminae. They fuse to a variable degree in the midline. Sometimes the fusion is incomplete, which may unintentionally lead to a dural puncture. The right and left halves meet at an angle of less than 90 degrees. The lateral edges wrap anteriorly around the facet joints.
Source: Shah RV, Board Review 2005

1192. **Answer: D (4 only)**
Explanation:
(Raj, Practical Management of Pain, 3rd Ed., page 632)

Cerebrospinal fluid (CSF) is a clear, colorless ultrafiltrate of blood formed by the choroid plexuses in the ventricles of the brain. CSF passes through the interventricular foramen of Monro into the third ventricle, then through the cerebral aqueduct to the fourth ventricle. It exits the fourth ventricle by way of the lateral and median foramina.
of Luschka and Magendie to reach the subarachnoid space. CSF is then absorbed by arachnoid villi that project from the subarachnoid space. The total volume of CSF is about 150ml, with about 25 to 35ml contained within the spinal subarachnoid space.

Source: Shah RV, Board Review 2005

1193. Answer: D (4 only)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Edition, page 648)
The subdural space is a potential space between dura and arachnoid mater. Injection of drugs into this space can cause extensive and erratic spread. The onset of a block after a subdural injection characteristically is slower (5 to 10 minutes) than after an intrathecal block (3 to 5 minutes) but significantly faster than an epidural injection (10 to 20 minutes). Moreover, a profound patchy sensory block with mild motor block may develop.

Diagnosis can often be made by subsequent injection of a radiopaque dye in case an epidural catheter was threaded into the subdural space. A small volume of dye (e.g., 5 ml) shows an extensive spread of a very thin film of the dye that is confined within the subdural space. The incidence of subdural injections is between 0.3% and 1%.

Motor paralysis and sensory preservation is typically due to anterior spinal artery syndrome, whereas motor preservation and sensory loss is associated with subdural blockade.

Source: Shah RV, Board Review 2005

1194. Answer: C (2 & 4)
Explanation:
1, 2. The type of peripheral neuropathy most commonly developing with chronic renal failure is a symmetric, distal mixed sensorimotor neuropathy. The legs are generally affected first and most severely. Men are more commonly affected than women. Most of the peripheral neuropathies in patients with chronic renal failure involve axonal degeneration.

3. The restless legs syndrome (Ekbom syndrome) is characterized by a feeling of discomfort in the legs that is relieved by movement. The sensation is felt deep within the limb, and is variably describes as pulling, stretching, or cramping. Restless legs syndrome occurs primarily at night, shortly after the patient lies down. It differs from akathisia, which is a restlessness that occurs during the daytime. It may be associated with peripheral neuropathy and anemia and is seen in patients with chronic renal disease, diabetes mellitus, and many other medical conditions. Exercise before going to bed may alleviate much of the discomfort. Agents that may be effective in alleviating symptoms include Clonazepam, gabapentin, L-dopa, and opiates. Neuroleptics, calcium channel blockers, and caffeine may worsen symptoms.

4. The neuropathy usually improves with dialysis or transplant.

B vitamins are generally replaced when patients receive dialysis. Thiamine is water-soluble and so is easily lost during dialysis, but even replacing thiamine is not nearly as effective in retarding or reversing the neuropathy of chronic renal failure as is renal transplantation. There are presumed to be neurotoxins in the blood of patients with uremia that are not removed by routine dialysis.

Source: Anschel 2004

1195. Answer: D (4 Only)
Explanation:
There is literature support for spinal cord stimulation to treat angina, peripheral vascular disease and chronic pelvic pain but none of these indications are FDA approved at present.

Source: Schultz D, Board Review 2004

1196. Answer: A (1, 2 & 3)
Source: Day MR, Board Review 2005

1197. Answer: C (2 & 4)
Source: Day MR, Board Review 2005

1198. Answer: A (1, 2, & 3)
Source: Janata JW, Board Review 2005

1199. Answer: E (All)
Explanation:
Frontal sinusitis, SCM spasms, and supraorbital neuralgia all can cause supraorbital pain. The spinal accessory nerve innervates the SCM and therefore could cause SCM pathology.

Source: Trescot AM, Board Review 2003

1200. Answer: B (1 & 3)
Explanation:
(See lecture notes)
Source: Bieneman B, Board Review 2005

1201. Answer: C (2 & 4)
Source: Goodwin J, Board Review 2005

1202. Answer: A (1,2, & 3)
Source: Bieneman B, Board Review 2005

1203. Answer: E (All)
Source: Bieneman B, Board Review 2005

1204. Answer: A (1, 2, & 3)
Source: Goodwin J, Board Review 2005

1205. Answer: C (2 & 4)
Source: Janata J, Board Review 2006
1206. Answer: A (1, 2, & 3)
Explanation:
Spinal cord stimulation causes vasodilation in the stimulated region. This effect is the result of microvascular changes occurring at the capillary level most likely as a result of central inhibition of sympathetic neurons. Spinal cord stimulation does not cause macrocirculatory changes and blood pressure and pulse remain unchanged.
Reference:
Source: Schultz D, Board Review 2004

1207. Answer: C (2 & 4)
Explanation:
Poor results are obtained with central thalamic and complete spinal cord injury pain. Peri-aqueductal grey mediated analgesia depends on both opioids and non-opioid systems. Short-term pain relief is 61-80%, but long term relief drops to 50-63%.
Source: Schultz D, Board Review 2004

1208. Answer: C (2 & 4)
Source: Bieneman B, Board Review 2005

1209. Answer: C (2 & 4)
Source: Goodwin J, Board Review 2005

1210. Answer: D (4 only)
Source: Janata JW, Board Review 2005

1211. Answer: A (1, 2 & 3)
Explanation:
While the patient meets diagnostic criteria for fibromyalgia, fibromyalgia is a diagnosis of exclusion and requires evaluation to be sure the patient has no other systemic disorder that could cause symptoms. Evaluations to rule out thyroid disease, vitamin D deficiency, anemia, leukemia, liver, and bone disease are necessary before the diagnosis of fibromyalgia is made. Testing for ANA and RF are only undertaken if the patient has signs and/or symptoms concerning for lupus or rheumatoid arthritis, respectively, and are not routinely used to evaluate patients with suspected fibromyalgia.
Source: Chad S. Boomershine, MD, PhD

1212. Answer: E (All)
Explanation:
The pain relieving effects of PNS are similar to those of SCS and are thought to be mediated by stimulation of A-beta fibers within the peripheral nerve with subsequent activation of local inhibitory circuits within the dorsal horn. Peripheral nerve stimulation is best used to treat pain caused by trauma to a single peripheral nerve although two peripheral nerves within the same region can successfully be treated with a single stimulation system (2
leads and 1 pulse generator or receiver). Pain due to nerve root injury or to spinal mechanisms usually does not respond to PNS. Patients who have a positive response to TENS may be somewhat more likely to respond to PNS although TENS response is not a reliable predictor of PNS effect and a negative response to TENS does not mean that PNS should not be tried.

Source: Schultz D, Board Review 2004

1221. Answer: E (All)
Source: Janata JW, Board Review 2005

1222. Answer: D (4 Only)
Explanation:
(Raj, Pain Review 2nd Ed., page 309)
Percutaneous stereotactic instillation of alcohol is the best described technique. Other percutaneous methods for hypophysectomy include the use of radiofrequency thermocoagulation, cryotherapy, or radioactive seeds. Gamma knife radiotherapy is a noninvasive method for creating hypophyseal lesions. The analgesic mechanism is unknown, but limbic system or psychological effects are unlikely to be the reasons for pain relief. Hypophysectomy is recommended in the treatment of metastatic prostate and breast cancer, irrespective of the hormonal responsiveness of the tumors.

Source: Schultz D, Board Review 2004

1223. Answer: E (All)
Explanation:
(reference Renfrew page 354)

Source: Bieneman B, Board Review 2005

1224. Answer: A (1,2, & 3)
Source: Bieneman B, Board Review 2005

1225. Answer: E (All)
Explanation:
(Raj, Practical Mgmt of Pain, 3rd Ed., pages 534-535)

1. The gate control theory explains the mechanisms of pain relief associated with TENS treatment for many conditions.

2. Simply stated, this theory proposed the existence of a gating mechanism in the dorsal horns of the spinal cord, where there is an interaction between the small-diameter, unmyelinated C fibers, which mediate the transmission of pain, and the larger-diameter, myelinated A fibers, which mediate sensation of light touch and pressure.

3. High-intensity, low-frequency stimulation (frequently referred to as “acupuncture-like TENS”) also appears to offer pain relief, the effects of which can be reversed with naloxone, an opiate antagonist

4. Central to the discussion of the rationale of TENS therapy are its various stimulation parameters. Low-frequency and high-pulse [width] energy cause strong, rhythmic muscle contractions.

Source: Shah RV, Board Review 2005

1226. Answer: E (All)
Source: Bieneman B, Board Review 2005

1227. Answer: C (2 & 4)
Explanation:
The question describes a likely pseudoseptic reaction that can follow intraarticular injection of Synvisc (hylan G-F 20). However, since septic arthritis can destroy the joint within 24 hours and it is impossible to discriminate the pseudoseptic reaction from septic arthritis, emergent joint aspiration with fluid sent for culture, gram stain, crystal examination, and differential is required to rule-out infection. While intraarticular steroids and NSAIDs are used for treatment of the pseudoseptic reaction, in septic arthritis these therapies can hasten joint destruction and should not be used until septic arthritis is ruled out.

Source: Chad S. Boomershine, MD, PhD

1228. Answer: A (1, 2, & 3)
Source: Janata JW, Board Review 2005

1229. Answer: A (1, 2, & 3)
Source: Janata JW, Board Review 2005

1230. Answer: B (1 & 3)
Explanation:
(Raj, Pain Review 2nd Ed. Page 313, Raj Practical Mgmt of Pain 3rd Ed., page 801)
In patients with diaphragmatic paralysis, pneumonectomy, pneumonia, extensive pulmonary carcinoma, contralateral high cervical cordotomies or mesencephelectomies can reduce ventilatory drive and cause respiratory demise. Bilateral high cervical cordotomies can lead to sleep-induced apnea (Ondine's curse). A staged high cervical cordotomy or a combination of a high and low cervical cordotomy can avoid this problem. Others have assessed the absence of the 2-3 fold rise in minute volume to CO2 as a marker for the development of sleep induced apnea.

Source: Schultz D, Board Review 2004

1231. Answer: E (All)
Source: Bieneman B, Board Review 2005

1232. Answer: A (1,2, & 3)
Source: Bieneman B, Board Review 2005

1233. Answer: A (1, 2, & 3)
Source: Sizer et al - Pain Practice - March & June 2004

1234. Answer: D (4 Only)
Explanation:
Postspinal headaches are characterized by frontal or occipital pain, which worsens with sitting and improves with reclining.
The etiology of postspinal headaches is unclear; however, they are believed to be caused by a reduction in CSF pressure and resulting tension on meningeal vessels and nerves (which result from leakage of CSF through the needle hole in the dura mater).

1. Usually occurs 24-48 hrs after lumbar puncture.

2. Conservative therapy for a postspinal headache includes bed rest, analgesics, and oral and intravenous hydration.

If conservative therapy is not successful after 24 to 48 hours, it is recommended that an epidural “blood patch” with 10 to 20 mL of the patient’s blood be performed. An epidural “blood patch” provides prompt relief of the postspinal headache.

3. Factors associated with an increased incidence of postspinal headaches include pregnancy, size and type of needle used to perform the block, age of the patient, the number of dural punctures.

4. Postspinal headaches may be associated with neurologic symptoms such as diplopia, tinnitus, and reduced hearing acuity.

Source: Hall and Chantigan

1235. Answer: E (ALL)

Explanation:

1236. Answer: A (1, 2, & 3)

Explanation:

1237. Answer: D (4 only)

Source: Janata JW, Board Review 2005

4. Strength training
A. Initially use a slight flexion bias with neutral spine position because this position decreases stress on the posterior elements and may help to decrease pain
B. Helps to maintain
i. Segmental spinal mechanics and lower extremity kinetic chain strength balance
5. Home program
6. Fluoroscopically guided epidural or transforaminal injections for associated discogenic or radicular symptoms
7. Facet joint injections if indicated
8. Surgery

1239. Answer: B (1 & 3)


1240. Answer: A (1, 2 & 3)

Explanation:
References:


Explanation:
A. Biofeedback, relaxation training, and challenging catastrophic cognitions are all a part of standard psychological pain management treatment. In addition to direct beneficial effects these treatments can have on distress and pain intensity, they have been shown to be effective in part because they give patients an increased sense of perceived control over their pain condition, thereby making it less threatening.
B. Relaxation training is also a common treatment.
C. Within the CBT and behavioral approaches which are the most commonly used in pain treatment, historical relationship issues with parents are not viewed as a primary contributor to how the patient is currently coping with pain. Controlled trials demonstrate that significant
improvement in pain intensity, distress, and function can be achieved without addressing such issues.
D. See C above.
E. See C above.
Source: Stephen Bruehl, Ph.D.

1241. Answer: A (1, 2, & 3)
Explanation:
Hydroxyurea stimulates fetal hemoglobin synthesis and will not provide acute relief of pain.

1242. Answer: E (All)

1243. Answer: A (1, 2, & 3)
Explanation:
SCS does not block afferent small fiber, high threshold, nociceptive input.

1244. Answer: B (1 & 3)
Explanation:
Reference:
1. TENS should probably be avoided in patients with cardiac pacemakers because of the risk of electrical interference with pacemaker function.
2. TENS can be used in the vicinity of other arteries.
3. TENS electrodes should not be placed over the anterolateral neck because the carotid sinus may be stimulated causing bradycardia, hypotension and syncope.
4. It is safe to use TENS for many hours.
The most common side effect is skin irritation at the site of the patches.
Source: Schultz D, Board Review 2004

1245. Answer: E (All)
Source: Boswell MV, Board Review 2004

1246. Answer: B (1 & 3)

1247. Answer: A (1, 2, & 3)
Explanation:
*Conversion disorder is the loss or alteration of physical functioning that is temporarily associated with psychosocial stressor. The patient is not conscious of intentionally producing the physical symptom in response to the psychic stressor.

*Paralysis and blindness are often described as classic symptoms of conversion disorder.

1248. Answer: C (2 & 4)
Explanation:
References:


1249. Answer: A (1, 2, and 3)
Explanation:
Source: Day MR, Board Review 2005

1250. Answer: A (1, 2, & 3)
Source: Janata J, Board Review 2006

1251. Answer: A (1, 2, & 3)
Explanation:
(Raj, Practical Management of Pain, 3rd Ed., page 633)
Needle length, as well as needle tip shape, may affect the length of time you have to wait before recognizing that you are subarachnoid, i.e., it takes longer for CSF to drip out of

*Sexual dysfunction is common.

*Pain is the least common conversion symptom encountered clinically. Patient may not be able to connect.
Spinal needles vary with regard to length, inside and outside diameters, as well as the shape of their tip. The latter affects the size and shape of the hole made in the dura as well as the speed with which CSF appears in the hub after dural puncture. The incidence of postdural puncture headache appears to be directly related to the size of needle used and the orientation of the needle in performing spinal anesthesia. A spinal needle oriented parallel to the dura separates the fibers rather than cutting them, as a perpendicularly oriented needle does, and produces a smaller defect in the dura.

All spinal needles come with a removable stylet, which must be close-fitting to prevent coring of the skin and the resultant obstruction of the needle and contamination of spinal space with epidermal tissue and skin bacteria. Several spinal needle types and sizes are commercially available, although only two different needle tip points are available. The tip points can have either a beveled cutting point or a noncutting, rounded pencil point.

The commonly used spinal needle with a cutting point is the Quincke-Babcock, which has a short bevel with cutting edges and a rounded heel. The cutting-point spinal needles appear to be associated with a high incidence of postspinal headache even when smaller needles are used. Spinal needles with a noncutting, rounded, pencil tip seem to cause less trauma to the dura mater and appear to be associated with a lower incidence of postspinal headache when larger-caliber needles are used.

The Greene, Sprotte, Whitacre, and Huber needles have a noncutting, rounded, pencil tip. The Sprotte and Whitacre needles have completely rounded non-cutting bevels with solid tips, and the opening on their side approximately 2 mm proximal to the tip. These are currently the most widely used needles for spinal anesthesia as a result of their association with a reduced incidence of postdural puncture headache.

Note: the Greene, Sprotte, Whitacre, and Huber needles do not have to be advanced parallel to the dura, since they are ‘pencil point’ needles.

Source: Shah RV, Board Review 2005

1252. Answer: A (1, 2, & 3)
Source: Goodwin J, Board Review 2005

1253. Answer: C (2 & 4)

1254. Answer: C (2 & 4)
Explanation: When deciding on the treatment of migraines, one must take into consideration the frequency and severity of the headaches. Prophylactic therapy is recommended if the headaches are more than 3 in a month, or are incapacitating requiring the patient to be hospitalized or miss work or the response to abortive medications is not satisfactory. A fine balance must be maintained between overmedicating and limiting acute attacks. It is not worthwhile to take prophylactic medication to prevent an occasional migraine once in two months. The aim of prophylactic therapy is to reduce the frequency and severity of the headaches by at least 50%. The best therapy for acute attacks is to use an abortive as in an upcoming job interview. Prophylactic therapy is not effective in tension type headaches. Migraines with prolonged aura can lead to permanent neurologic sequelae, in such cases prophylactic therapy maybe indicated.

Ref: Raj, Robbins
Source: Chopra P, 2004

1258. Answer: C (2 & 4)
Explanation: Blockade of the accessory nerve (CN XI) is useful for trapezius muscle block as an adjunct to interscalene nerve blocks of the brachial plexus for surgery on the shoulder.

The accessory nerve traverses the posterior triangle of the neck in a very superficial location. It emerges from the body of the sternocleidomastoid muscle at the junction of the superior and middle third of the posterior border of the muscle and therefore is frequently unintentionally blocked when a superficial cervical plexus block is performed.

Source: Kahn and Desio

1259. Answer: A (1, 2, & 3)
Explanation: NMDA receptors are involved in the activation of nociceptive neurons.

The action of excitatory amino acids such as glutamate and aspartate at the NMDA receptor in the dorsal horn is enhanced by the neuropeptides substance P, calcitonin gene-related peptide (CGRP), and dynorphins.

The corelease of excitatory amino acids and neuropeptides strengthens the synaptic connections in the dorsal horn and may increase the development of dorsal-horn hyperexcitability (cord wind-up).
There is an expansion of the receptive fields of the wide dynamic range (WDR) neurons.

Wind-up is prevented by NMDA receptor antagonists.

Both Mk-801 and ketamine are NMDA receptor antagonists.
Source: Kahn and Desio

1260. Answer: A (1, 2, & 3)
Source: Janata JW, Board Review 2005

1261. Answer: B (1 & 3)
Explanation:
1. The spinal accessory nerve innervates the trapezius muscle, and trauma will cause spasm of trapezius and torticollis.
2. Trauma of spinal accessory nerve cause torticollis – not winged scapula.
- It is caused by pathology of long thoracic nerve.
3. Trauma to spinal accessory nerve causes torticollis.
4. Hoarseness might come from the recurrent laryngeal nerve, but, not spinal accessory nerve.
Source: Trescot AM, Board Review 2003

1262. Answer: A (1, 2, & 3)
Explanation:
Intravenous lidocaine can be used to determine the efficacy of treatment with oral antiarrhythmics such as mexiletine or tocainide. It may be used as a treatment itself if weekly infusions provide longer relief after each treatment.

Some studies suggest that intravenous lidocaine may have predictive value as to the efficacy of anticonvulsants such as phenytoin or carbamazepine.

1, 2, 3.Because of the possibility of systemic toxicity and seizures, patients should be monitored by electrocardiography, blood pressure, and pulse oximetry.

4. Skin temperature monitoring is not necessary.
Source: Ramamurthy

1263. Answer: A (1, 2, & 3)
Explanation:
1. Neurolytic celiac plexus block is an accepted procedure in terminal carcinoma of abdomen.
2. Neurolytic celiac plexus block is performed with 50 percent alcohol 25 ml bilaterally.
3. Neurolytic celiac plexus block is performed with absolute alcohol 12 ml transaortic route.
4. Effectiveness has been reported to be as high as 90% in some studies.

1264. Answer: D (4 Only)

1265. Answer: E (All)
Explanation:
Evaluation of endocrine status, body temperature, vital signs, skin and mucous membranes, perspiration, hair and nail growth, salivation, lacrimation, and extremities, as well as documentation of autonomic reflexes involving the cranial nerves should be performed prior to special tests of autonomic function.

1. Several tests exist to supplement the information obtained on examination of the patient.

The sweating test will reveal areas of autonomic dysfunction.

Cobalt blue papers will turn pink when exposed to moisture and will remain blue in areas of anhidrosis.

2. Iodine in oil will turn bluish black in the presence of starch and moisture.

3. Ferric chloride turns black in the presence of tannic acid and moisture.

4. Sweating can be elicited by application of external heat, ingestion of hot fluids and aspirin, emotional stimuli, intellectual strain, painful cutaneous sensation, or subcutaneous injection of 5 mg of pilocarpine hydrochloride.

Other tests of autonomic function include assessment of the pilomotor response, vasomotor response, reflex erythema, histamine flare, skin temperature, skin resistance, capillary microscopy, and plethysmography.
Source: Raj, P

1266. Answer: B (1 & 3)
Explanation:
(Tierney, 42/e, pp 825-829)

· HLA-B27 diseases are easy to remember with the mnemonic PAIR (Psoriasis, Ankylosing spondylitis, Inflammatory bowel disease, and Reiter syndrome). These are called the seronegative spodylarthropathies. Reiter syndrome preceded by a bacterial infection (Yersinia, Salmonella, or gonococcus) has a high association with a positive HLA-B27. Ankylosing spondylitis has a 90% association with HLA-B27; overall, Reiter syndrome and
inflammatory bowel disease (IBD) have an 80% HLA-B27 association.

Patients with IBD (Crohn’s disease and ulcerative colitis) may develop a nonerosive oligoarthritis of the large peripheral joints that is usually eliminated after controlling the gastrointestinal symptoms. Arthritis is the second most common extraintestinal manifestation in patients with IBD (anemia is the most common extraintestinal manifestation). NSAIDs must be used with caution in patients with IBD.