Neurosurgical Treatment of Pain

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No Disclosures
Neurosurgical Treatment of Pain

• First (and Last) Principle:

CALL PAIN MANAGEMENT DOCTOR!

Basic Spine Surgery
Diskectomy - Lumbar

- Traditional
- Lateral

Steps:
- Midline approach
- Muscle Stripping
- Spinolaminar junction
- Drill Lamina, Inferior Facet
- Remove Ligament
- Sweep Root, Dura
- Incise, remove HNP
Diskectomy - Lumbar

- Traditional
- Lateral

Steps:
- Paramedian approach
- Muscle Splitting
- Intertransverse Interval
- Expose Pars
- Drill Superior Facet
- Expose Nerve
- Remove HNP
Diskectomy - Anterior Cervical

Steps:
- Divide Platysma
- Avascular plane
- Longus Colli
- Diskectomy
- Distraction
- Osteophytes
- PLL
- Graft
- Plate
Diskectomy - Thoracic

**Approaches**
- Posterolateral
- Costotransversectomy
- Transthoracic
Foraminotomy - Cervical

Steps
- Midline incision
- Muscle stripping
- Facet exposure
- Facet drilling
- Dorsal root exposure
Laminectomy - Cervical

**Steps**
- Midline incision
- Muscle stripping
- Facet exposure
- Trough drilling
- Atraumatic Removal
- Gutter clearing
Laminectomy - Lumbar

Steps
- Midline incision
- **BILATERAL** muscle stripping
- Medial facet exposure
- Trough drilling
- Atraumatic Removal
- Gutter clearing
Interspinous Process Decompression

Steps
- Midline incision
- UNIATERAL muscle stripping
- Spinolaminar junction
- Laminotomy/facetectomy
- Microscope angulation
- Ligament removal
- Gutter clearing

Sublaminoplasty
Posterolateral Fusion - Lumbar

Posterolateral Fusion – Lumbar

Procedure

• Midline incision
• WIDE muscle stripping to TP’s
• Laminectomy
• Pars/inferior facetectomy
• Screw fixation
• Decortication
• Washout
• Autograft/supplements
Interbody Fusion

- PLIF
- TLIF
- ALIF
- XLIF

**Interbody Fusion – PLIF/TLIF Procedure**

- Laminectomy
- Facetectomy
- Dural retraction
- Diskectomy
- Interbody Graft
- Posterolateral Fixation
- Posterolateral Arthrodesis
Interbody Fusion – ALIF, XLIF

- Anterior incision
- Vessel, ureter, nerve risks
- Lateral, posterior incisions
- Vessel risks
- Additional fixation

Vertebral Augmentation

Procedure:
- Xray localization
- Cannulate pedicles
- Inflate balloons
- Inject cement
“Failed Back Surgery”

I HAVE NO PATIENTS TO PRESENT

SCS

• Rationale
  – Gate Control Large Fibers vs. Small

• Technique
  – Awake laminotomy
  – Paddle lead insertion
Pumps

• Rationale
• Technique
• Problems
  – Leak, Infection
  – Abuse, Dependence
  – Refills
• Cocktails

Facial Pain
Tic Doloreux

- AED
- Injection, RFA
- MVD
- SRS
Tic Doloreux

- AED
- Injection, RFA
- MVD
- SRS

Functional & Ablative Procedures

**Brain**

- Pontine Tractotomy
- Mesencephalotomy
- Thalamotomy
  - Parvicellular ventrocaudal
  - Medial
- Cingulotomy
Other Intracranial Ablations

- Hypothalamotomy
- Pituitary Alcohol
- Other thalamotomy sites
- Subthalamotomy

DBS

- Indications
- Technique
  - Sensory Thalamus (VPL, VPM)
  - PAG/PVG
Motor Cortex Stimulation

• Indications
  – Central Pain
  – Post Stroke Pain
• Technique

Functional & Ablative Procedures

*Peripheral*

• Sympathectomy
• Dorsal Rhizotomy
• Dorsal Root Ganglionectomy
DREZ

• Indications
  – Brachial plexus injury
  – Post s.c.i. Pain

• Technique

Cordotomy, Myelotomy

• Indications
  – Cancer Pain

• Techniques
  – Commissural

1.1 L2 = length of the subarachnoid portion of the subarachnoid
  – Distance from the sagittal midline tip to the cord surface

1.2 L2 = height of cord penetration