

Back & Neck Pain Herniated Nucleus Pulposus

- I. Etiology of Back /Neck Pain
 1. Injury or trauma is the most common cause
 2. Risk Factors: Obesity, Stress, Posture issues, Age, Heredity?, Smoking, Work
- II. Common Terminology
 - A. Acute Back/Neck Pain- resolves on own, lasts 4 weeks or less
 - B. Chronic Back/Neck Pain- pain continues 3 months or more
 - C. Intervertebral disc- separates the vertebrae of the spinal column and absorbs shock
 - D. Nucleus Pulposus- gelatinous center of the intervertebral disc
 - E. Annulus fibrosus- strong outside portion of the intervertebral disc
 - F. Spinal Stenosis- narrowing of the spinal canal usually due to arthritis
 - G. Degenerative Disc Disease- Normal process of aging that results in disc changes
- III. Patho of a Herniated Nucleus Pulposus (HNP) –
 - nucleus pulposus bulges and eventually herniates thru the annulus fibrosis
 - disc material squeezes out into spinal canal
 - nerve root pressure then develops
- IV. Lumbar regions are most easily injured
 1. L4-5 and L5-S1 most common, but can also be C5-6 and C6-7
- V. Clinical Manifestations of HNP
 - A. Lumbar Disc Disease
 1. pain that can radiate down buttocks and leg
 2. Straight leg raise test positive for sciatic pain
 3. sensory deficits
 4. Reflexes
 5. Cauda Equina Syndrome
 - B. Cervical Disc Disease
 1. Pain, stiffness, weakness, paresthesia, radiation of pain down arms/hands
- VI. Diagnosis
 - A. S+S with physical findings, history
 - B. Imaging
 - C. EMG
- VII. Treatment
 - A. Conservative measures first if possible
 1. Limit Activity- don't bend, twist, lift heavy objects
 2. Position- flex knees up when resting, don't lay flat on back
 3. Medications
 - a. NSAIDS, analgesics, muscle relaxants, steroid injections
 4. Alternative therapies- acupuncture, ice/heat, physical therapy, massage

5. Attempt conservative therapies x 4 weeks

B. Surgery

1. Discectomy
 - a. removal of damaged disc portion to decompress impinged nerve root
2. Artificial Lumbar Disc replacements
 - a. Charite Disc, Prodisc- artificial disc types (alloy plates)
 - b. Goal to restore movement and eliminate pain
3. Intradiscal electrothermoplasty
 - a. Needle guided into damaged disk via Xray imaging.
 - b. Annulus partially melted to regenerate new stronger fibers of annulus
4. Interspinous decompression system/devices
 - a. Titanium insert secured to vertebrae
 - b. Lifts the vertebrae off the pinched nerve
5. Laminectomy
 - a. Part of the lamina is removed to reach disk and remove herniated area
6. Spinal fusion
 - a. immobilization via bone grafting, rods, plates and/or screws
 - b. Bone graft can be genetically engineered or autograft/allograft
 - 1) Autograft: bone obtained from patient's own bone
 - 2) Allograft: bone obtained from cadaver
 - c. Result-stiff area that is fused, but will stabilize spine

VIII. Nursing Management: Laminectomy/HNP Surgery/Fusion Surgery

1. Post op mobility
 - a. dangle, stand, or ambulate likely on day of surgery
 - b. Maintain spinal/cervical alignment at all times
 - 1) side lying
 - 2) Supine- need pillows under the thighs for comfort/alignment
 - 3) Logrolling when moving around in bed-turn patient as a unit
 - 4) Brace may be prescribed to wear (hard or soft bracing)
 - 5) Avoid: twisting, bending, misalignment post op.
2. Pain- analgesics, PCA pump, opioids, muscle relaxers
3. Peripheral neurologic exam
 - a. Compare with preop baseline- should be equal to baseline not worse
 - b. Report to MD if: new/worsening muscle weakness, numbness
4. Neurovascular checks as ordered by MD
5. Check Donor site if fusion was done with bone grafting from autograft

IX. Complications of post-op period

A. CSF leakage

1. drainage at site, severe HA
2. report immediately to MD

B. Paralytic Ileus

1. N/V, abdominal distention, constipation
 - C. Urinary retention
 - D. Complications of Cervical Surgery:
 1. Edema of the spinal cord could cause airway occlusion
- X. Recovery
- A. 6-week recovery time post-op routinely
 - B. Exercise
 1. Walking is best
 2. lying down/standing with proper body mechanics
 - C. Activity
 1. Wear brace as directed post op
 2. don't push or pull, twist, bend at waist, stoop
 3. no heavy lifting per MD orders
 - D. Sleeping
 1. on back with pillow under flexed knees or between knees if side lying
 2. firm mattress
 - E. Standing/ sitting
 1. avoid soft chairs
 2. sit with upright straight aligned posture
 3. avoid keeping the same position for prolonged periods