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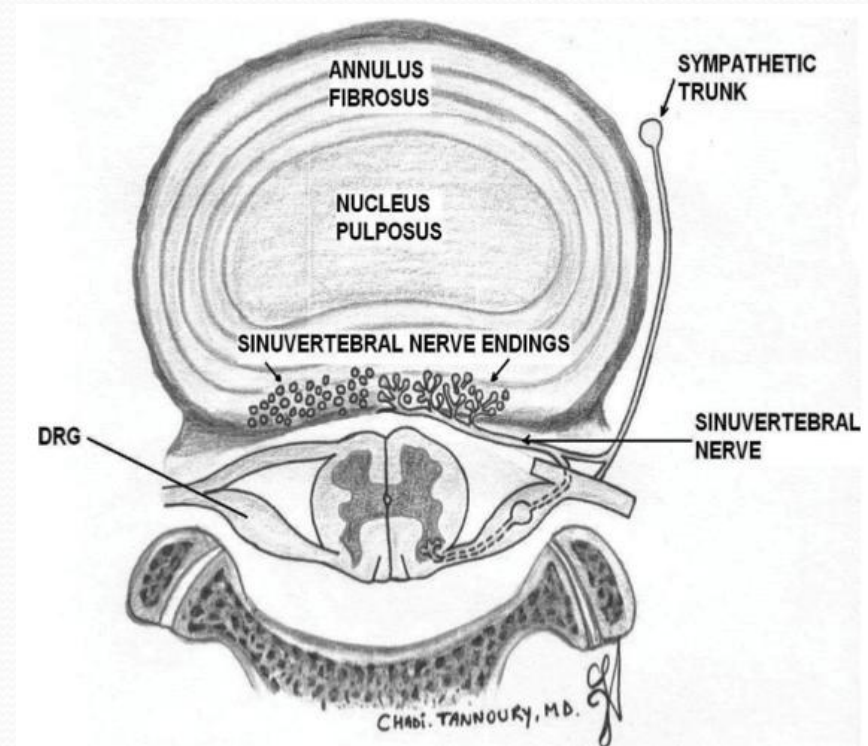
# Neck Injury Presentations

- NECK PAIN
- SHOULDER PAIN
- ARM PAIN
- N/T/Weakness: UE/LE
- Loss Dexterity/  
Imbalance



# Pain - Pathophysiology

- Innervated structures:
  - Sinuvertebral Nerve:
    - AF of IVD
    - PLL
    - Meninges
    - V<sub>x</sub>
  - Cervical dorsal rami:
    - Posterior muscle chain
    - Facet joint
  - Ventral rami:
    - Prevertebral muscles
    - Lateral vertebral muscles

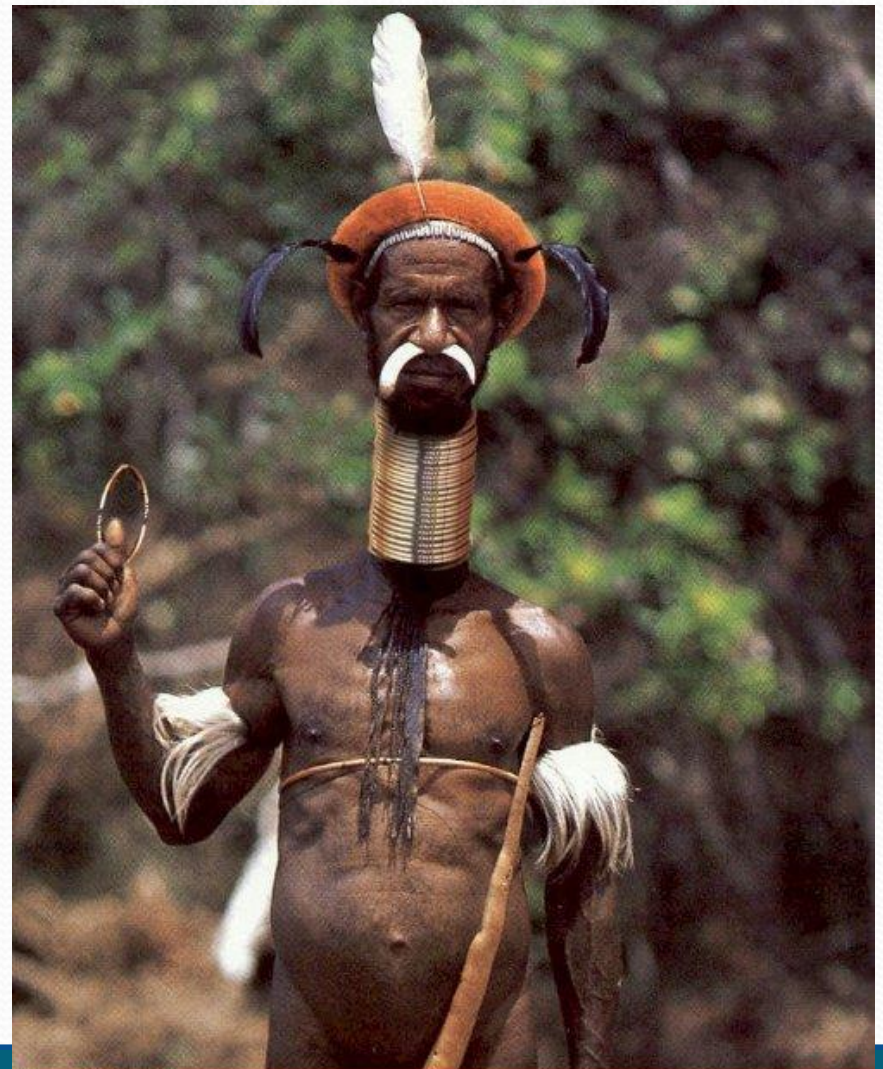




# Most Common Causes Neck Pain

- Cervical Spondylosis
- Cervical radiculopathy
- Cervical myelopathy
- Fracture

Dwyer Et al, Bogduk et al



FreakingNews.com

June 2015



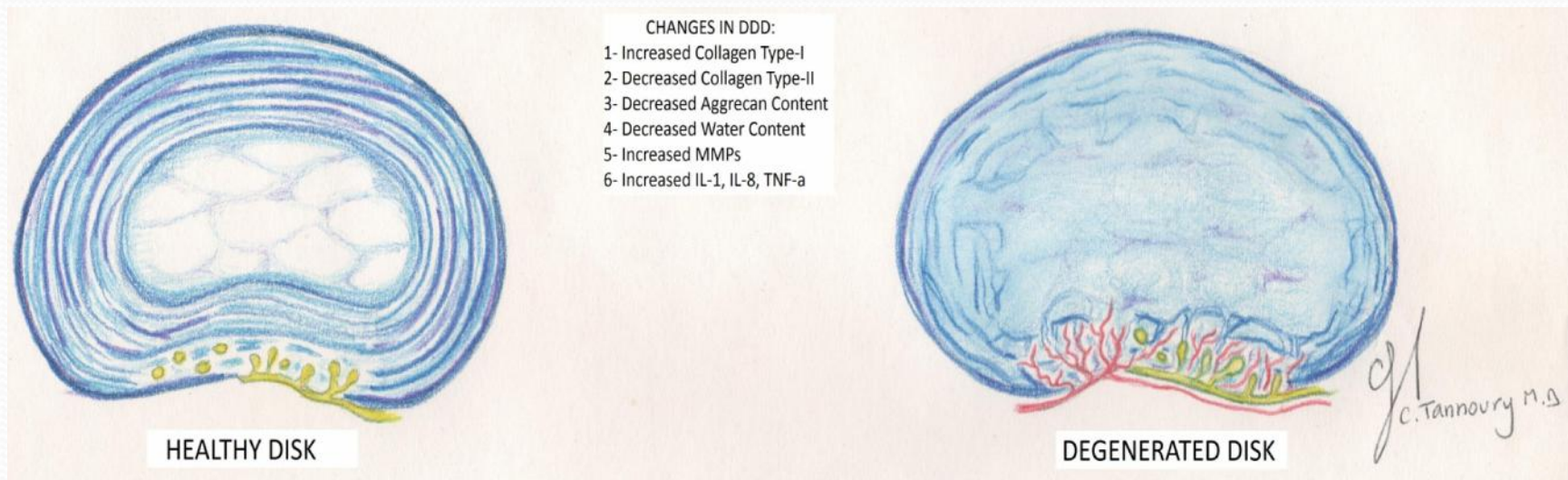
# LIFE THREATENING

- CAROTID DISSECTION
- CERVICAL TUMORS
- EXPANDING MASS EFFECT:
  - Epidural hematoma
  - Epidural abscess

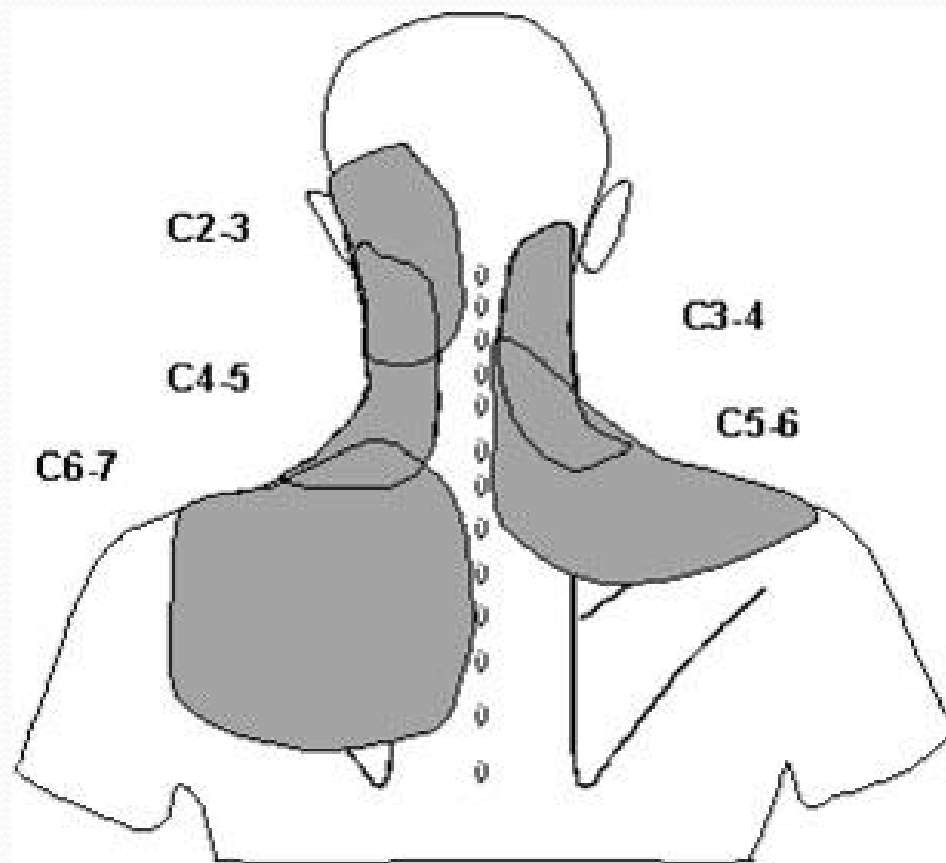


# Spondylosis - Pathophysiology

- DDD → Inflammatory mediators (Sub P, ILs, PGs, TNFs)
- Neo-vascularization



# Discogenic Pain

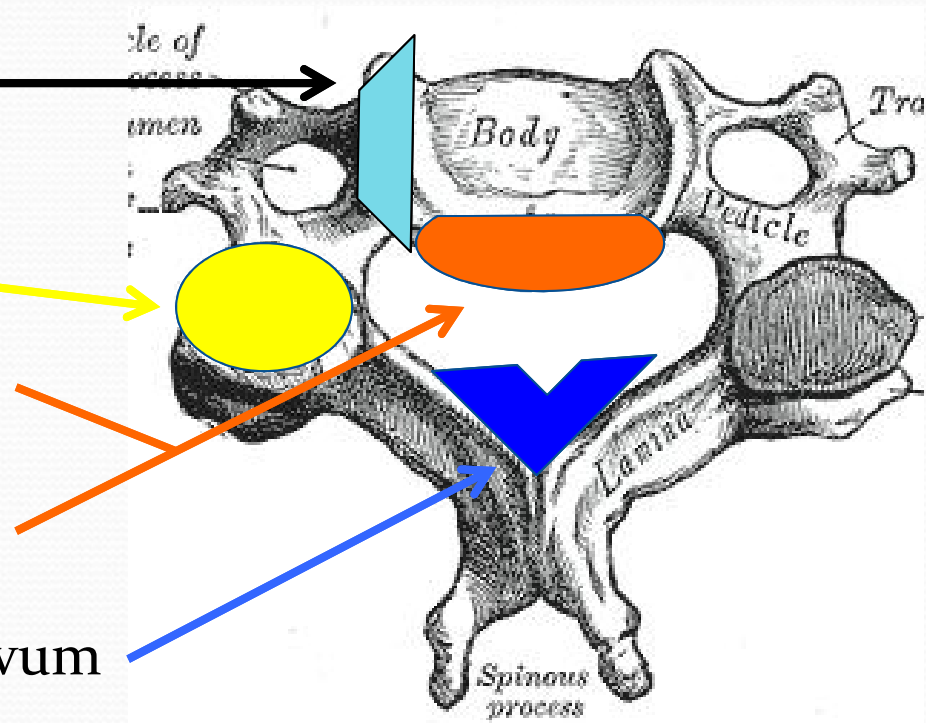




# Radiculopathy/ Myelopathy - Pathophysiology:

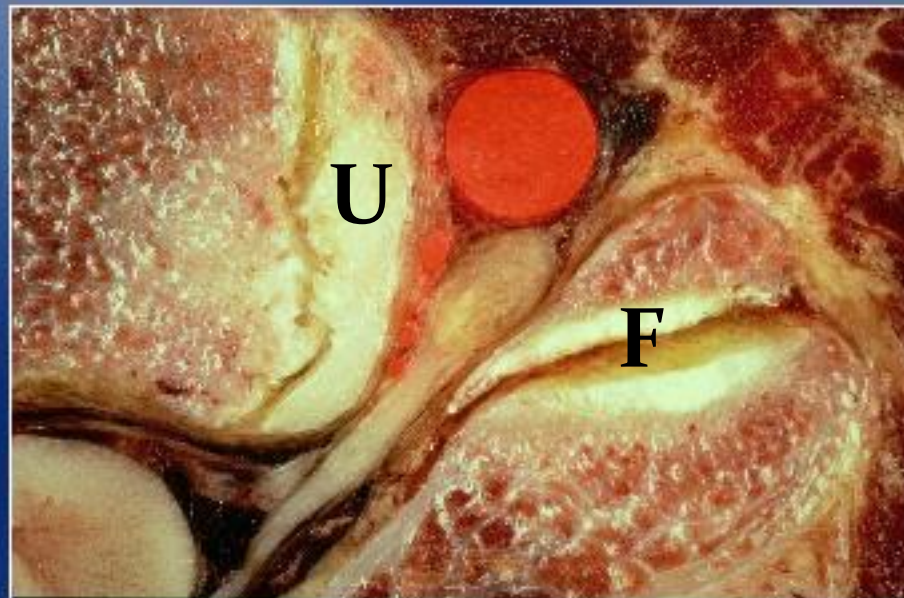
- Direct Mechanical compression NRoot/Cord:

- Uncus joint
- Facet joint
- Disk Osteophyte Complx
- Disc Herniation - OPLL
- Infolding Ligamentum flavum





# Cervical Spondylosis With Sclerosis of the Uncus and Root Compression



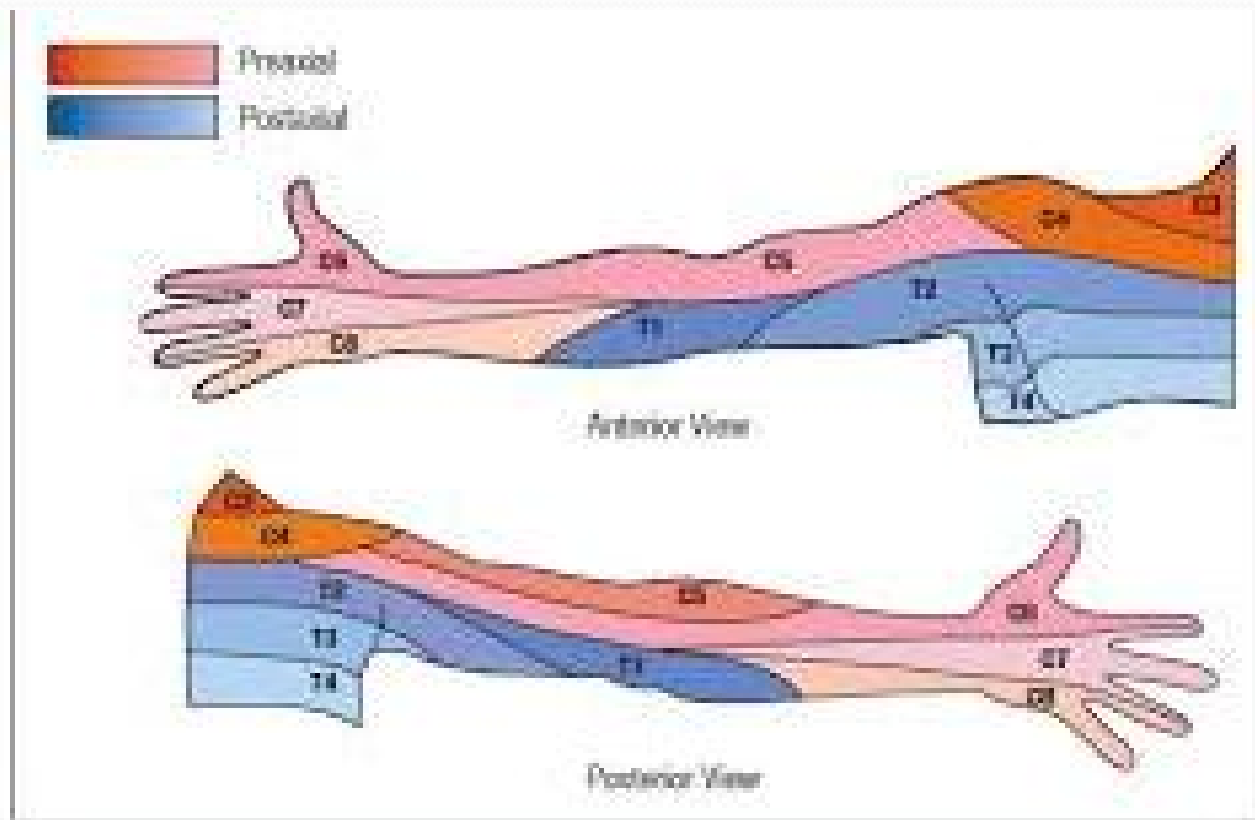


# Cervical radiculopathy

- Pain is often accentuated by maneuvers that stretch the involved nerve root. Some examples include:
  - Coughing
  - Sneezing
  - Reaching

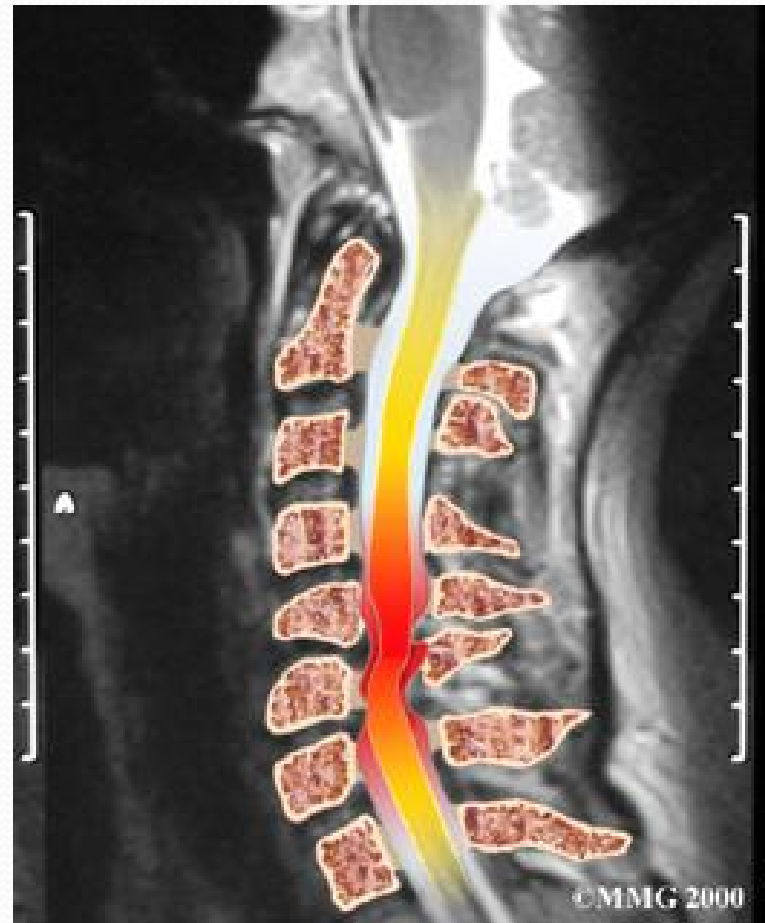


# Radicular Pain



# Spinal Cord Compression: Myelopathy

- Neck Pain
- UE:
  - Radiculopathy
  - Weakness/N/T
  - Clumsiness
- LE:
  - Loss of Balance
  - Frequent Falls
  - Gait disturbances





# MANAGEMENT

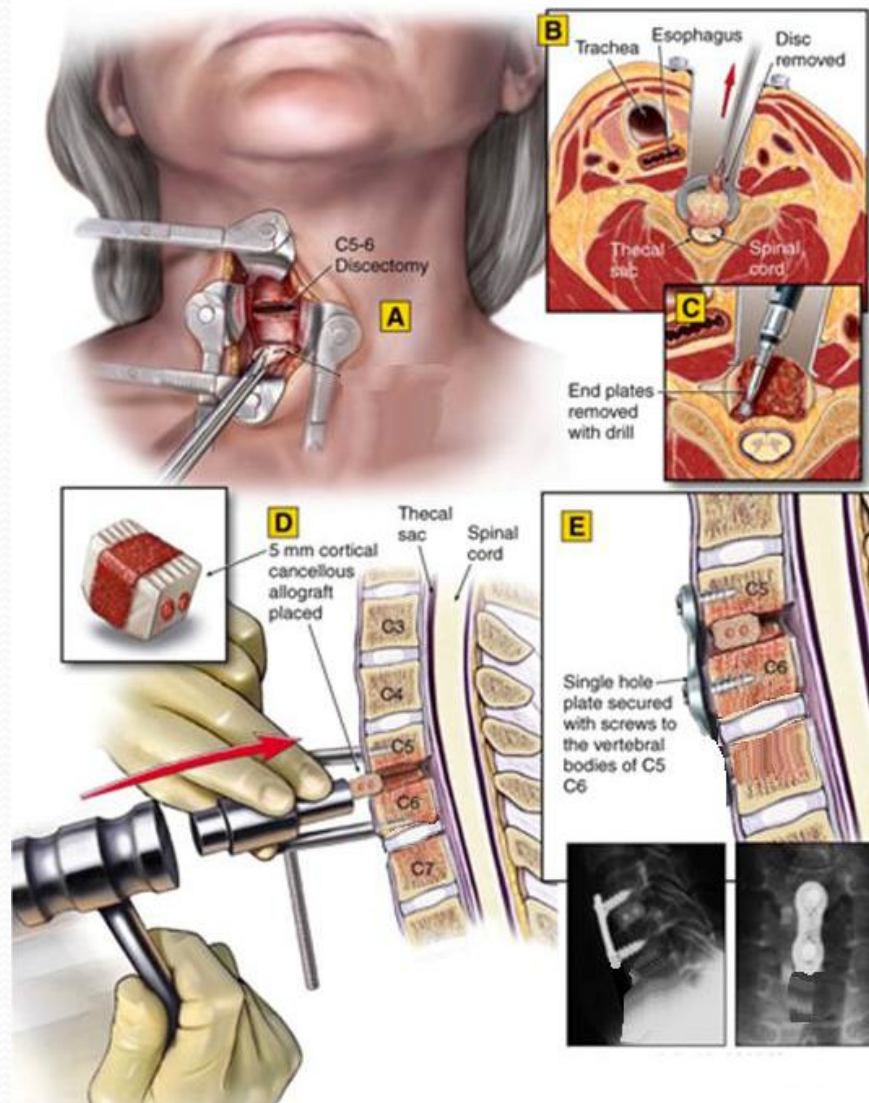
- Axial Neck Pain (without neurologic deficits):
  - Typically conservative mgmt (PT)
  - Facet block? RFA?
- Arm Pain: Radiculopathy
  - PT/ Traction / Injections
  - Surgery: if conservative management fails
- Surgery: Weakness, Myelopathy, Instability (Fracture, Stenosis, HNP, Infection, Tumor, etc)

# Surgical Options

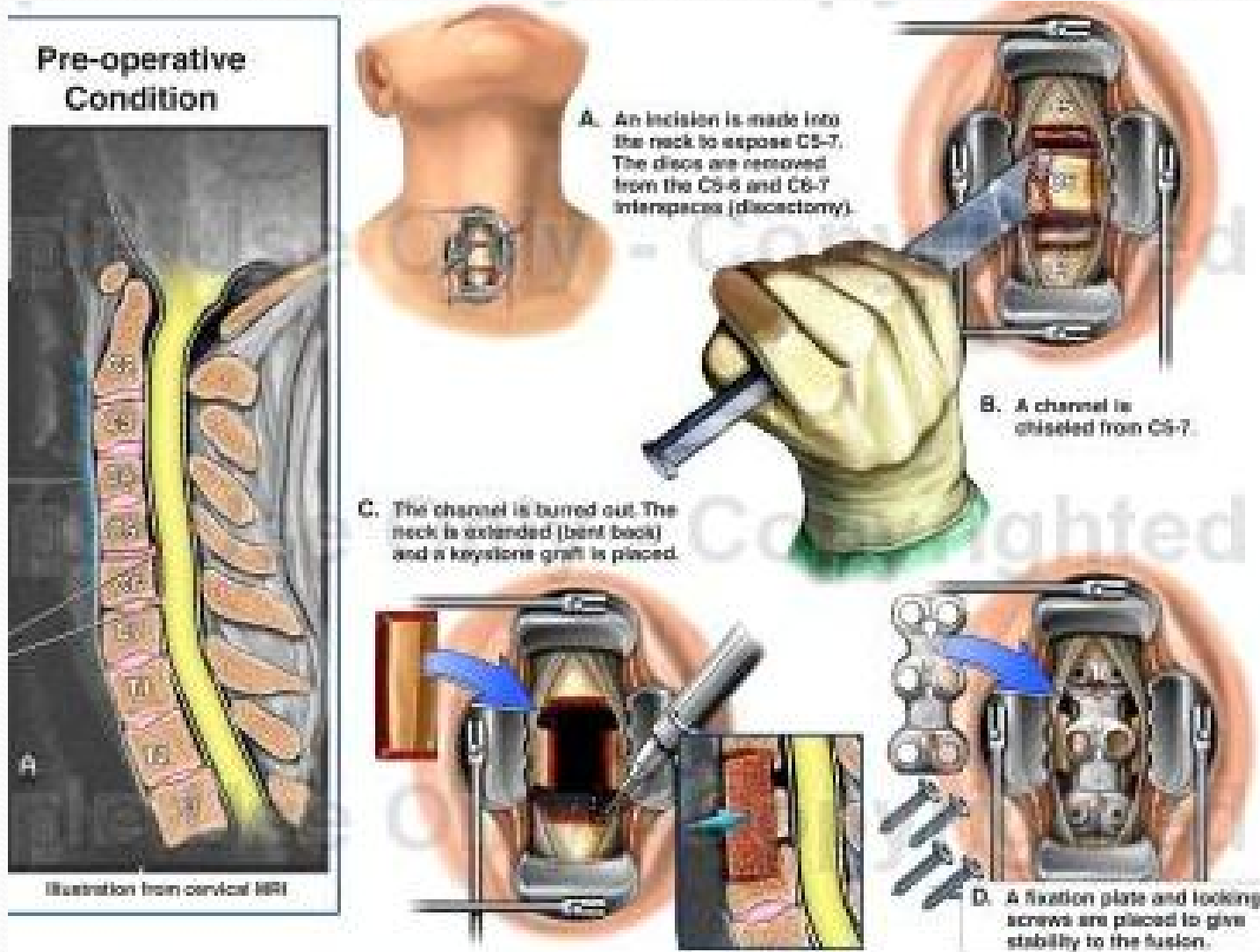
- 1 – 2 levels Disc Herniation:
  - ACDF
  - Posterior Keyhole laminoforaminotomy
- 2-3 Levels disease:
  - Corpectomy/ACDF
- $\geq 3$  levels disease:
  - Multilevels Corpectomy ??
  - Posterior lami / fusion
  - Laminoplasty (OPLL: make sure NO neck pain)
- Presence of Kyphosis: Anterior!



# Anterior C Discectomy and fusion

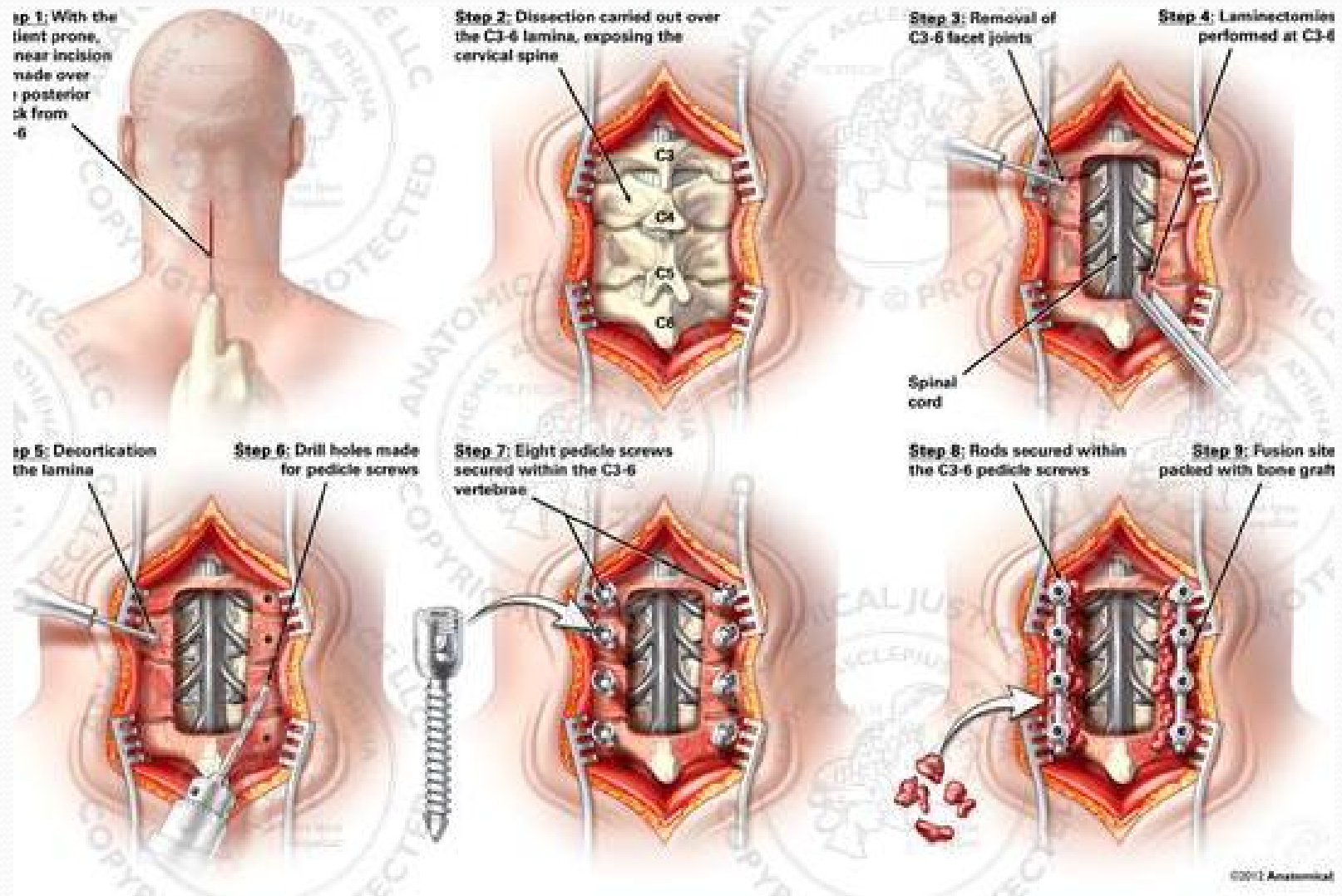


# Anterior corpectomy and fusion

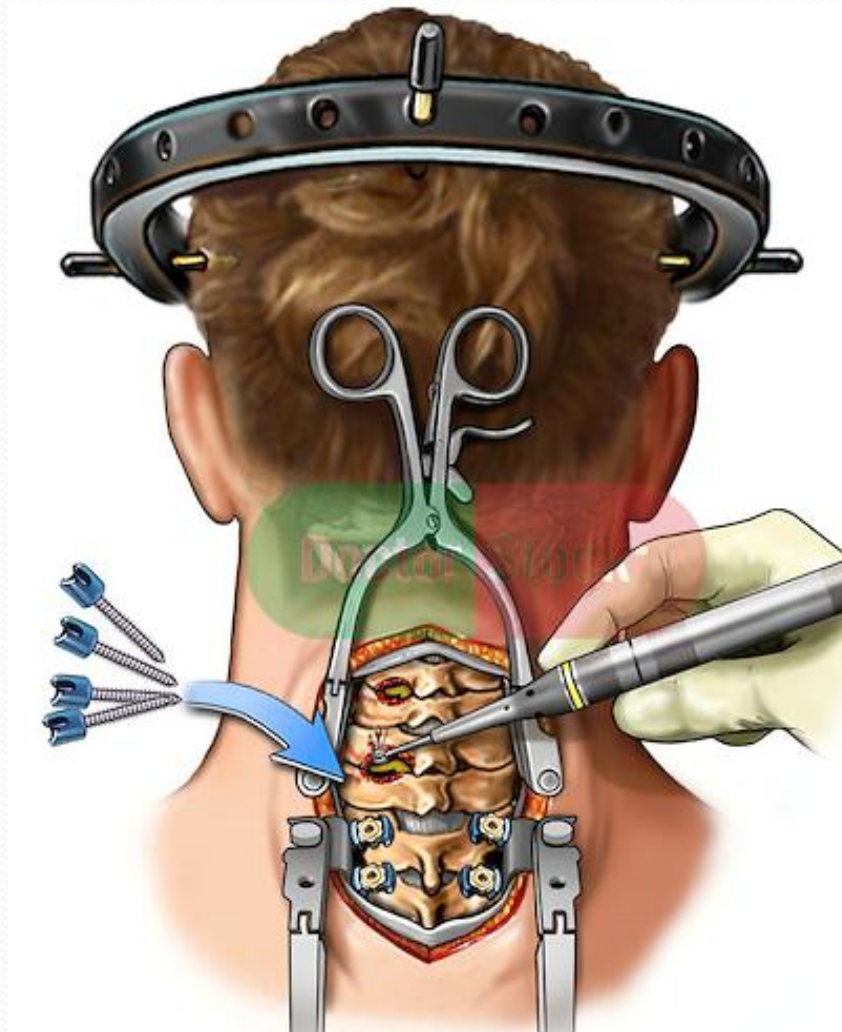




# Cervical laminectomy and fusion

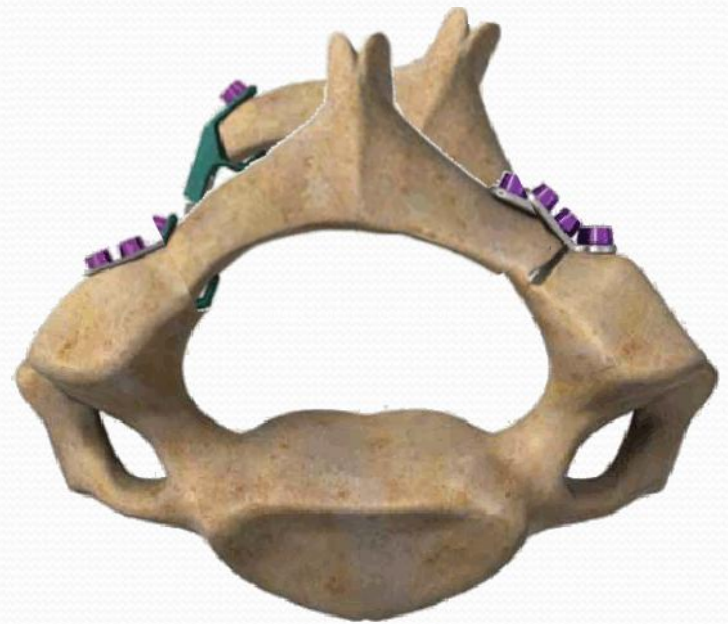
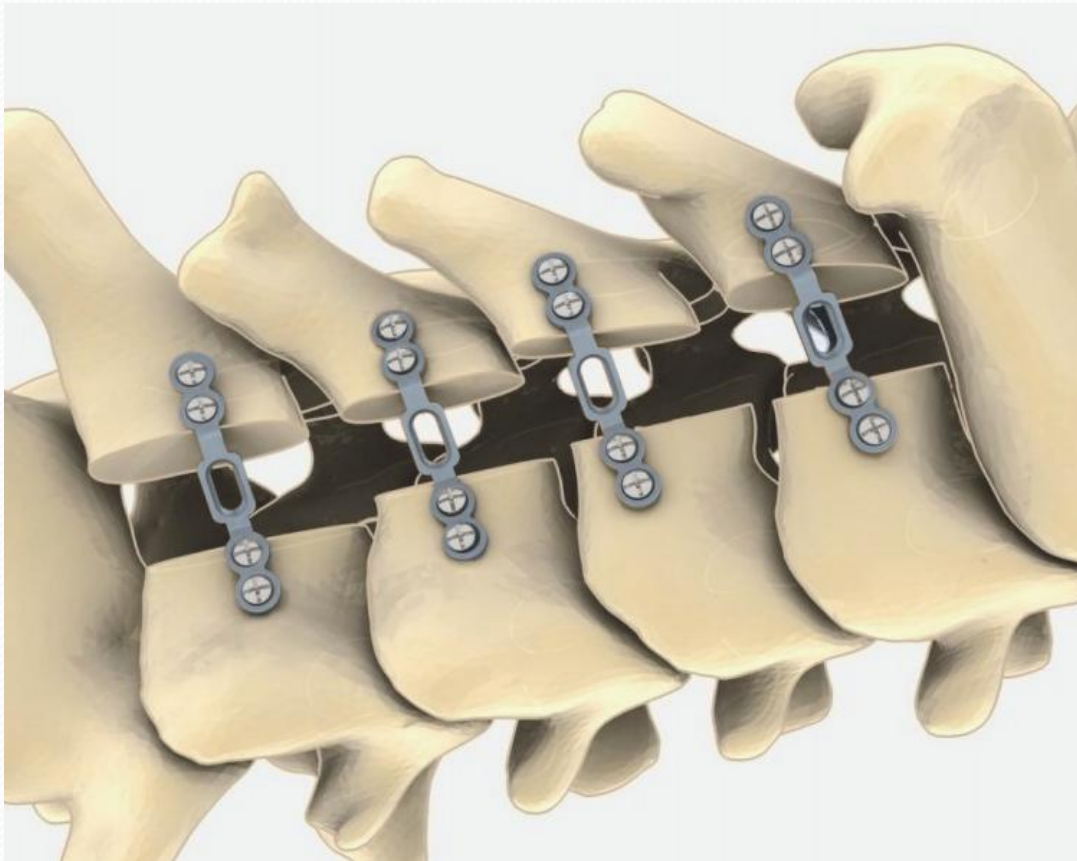


# Cervical Foraminotomy





# Cervical Laminoplasty

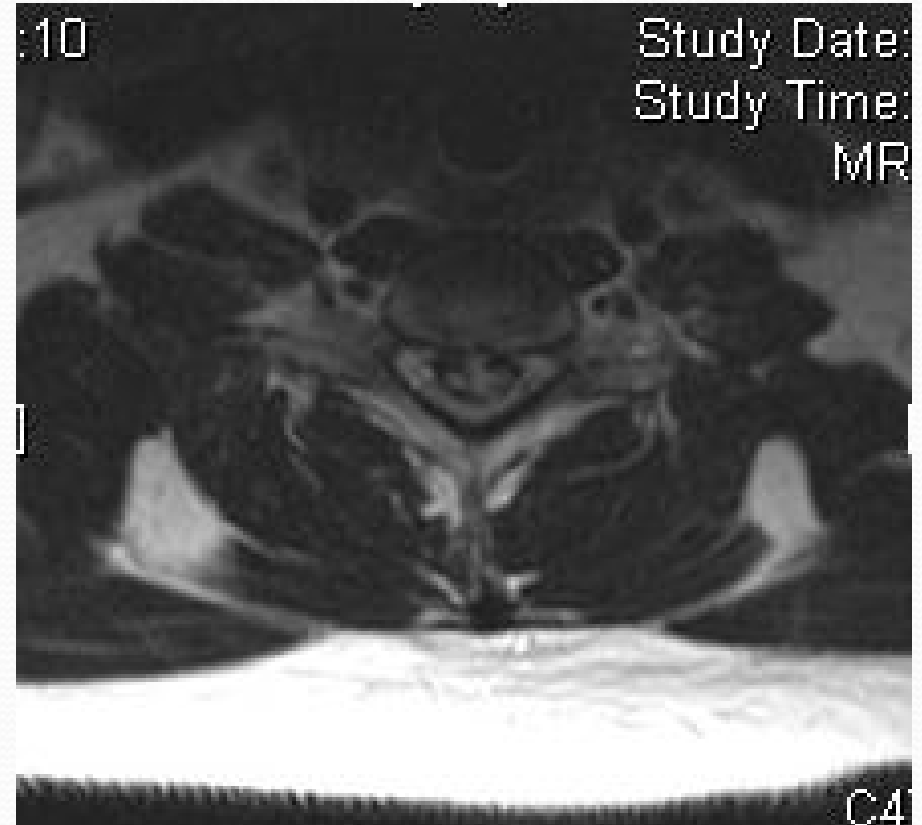


# CASES

*Work Related Injuries Workshop*  
*June 2015*



# 32 F s/p chiropractic manip – U&LE weakness



# ACDF





# 55 M – U/L ext weak, clumsiness

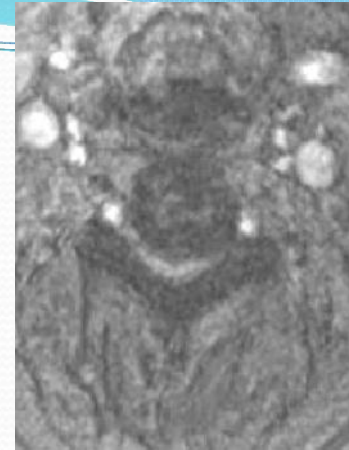


# Cervical Laminectomy & fusion

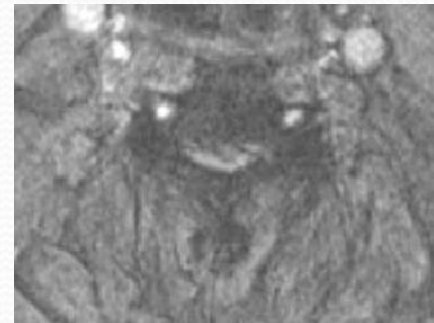




# 50 M with chronic progressive difficulty ambulating



C<sub>3-4</sub>

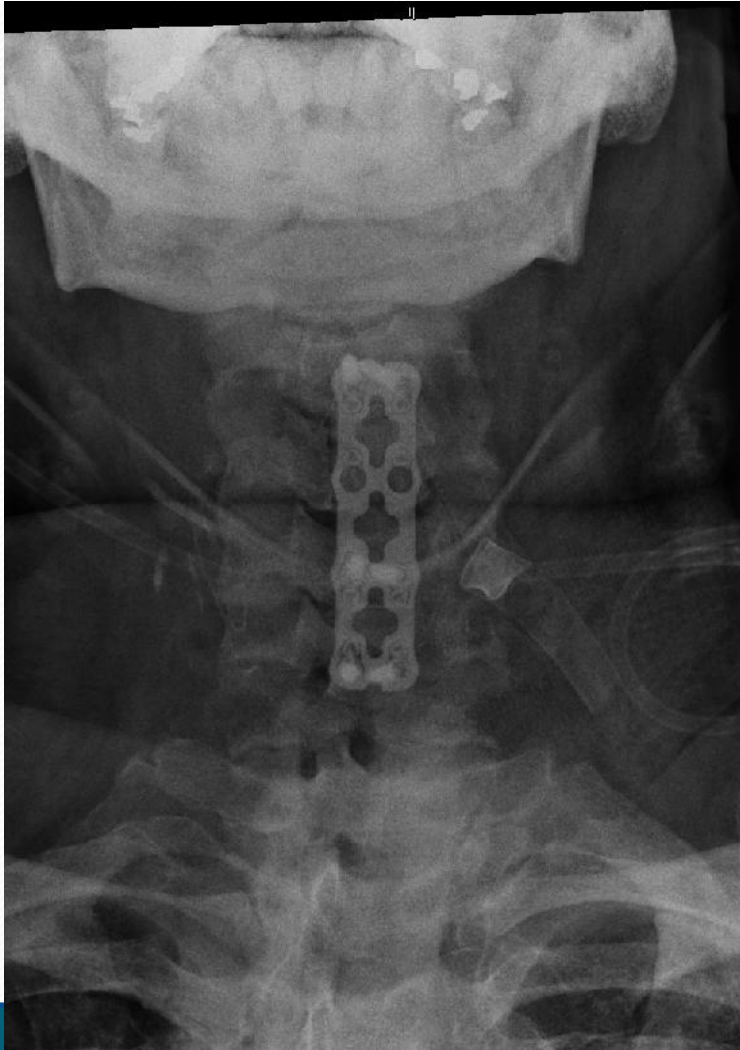


C<sub>4-5</sub>



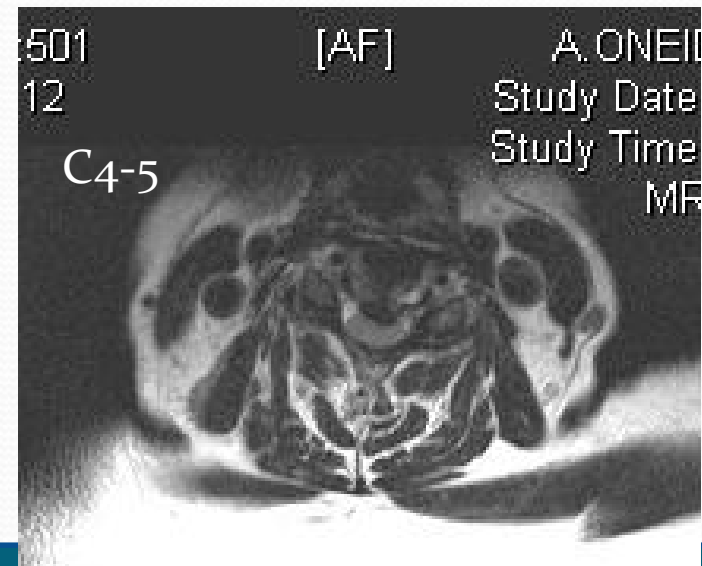
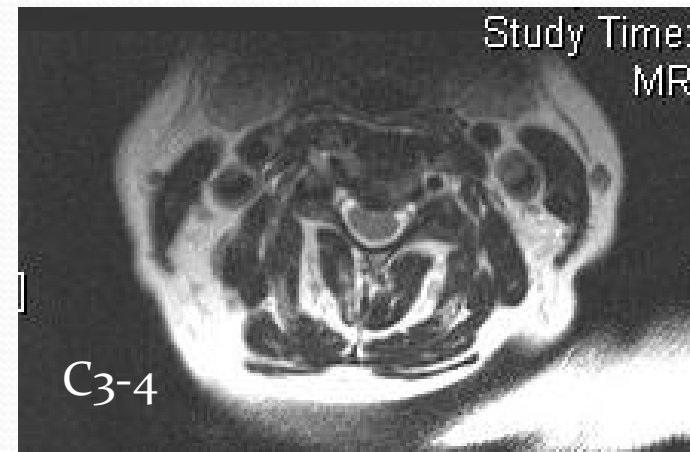
C<sub>5-6</sub>

# Corpectomy & fusion

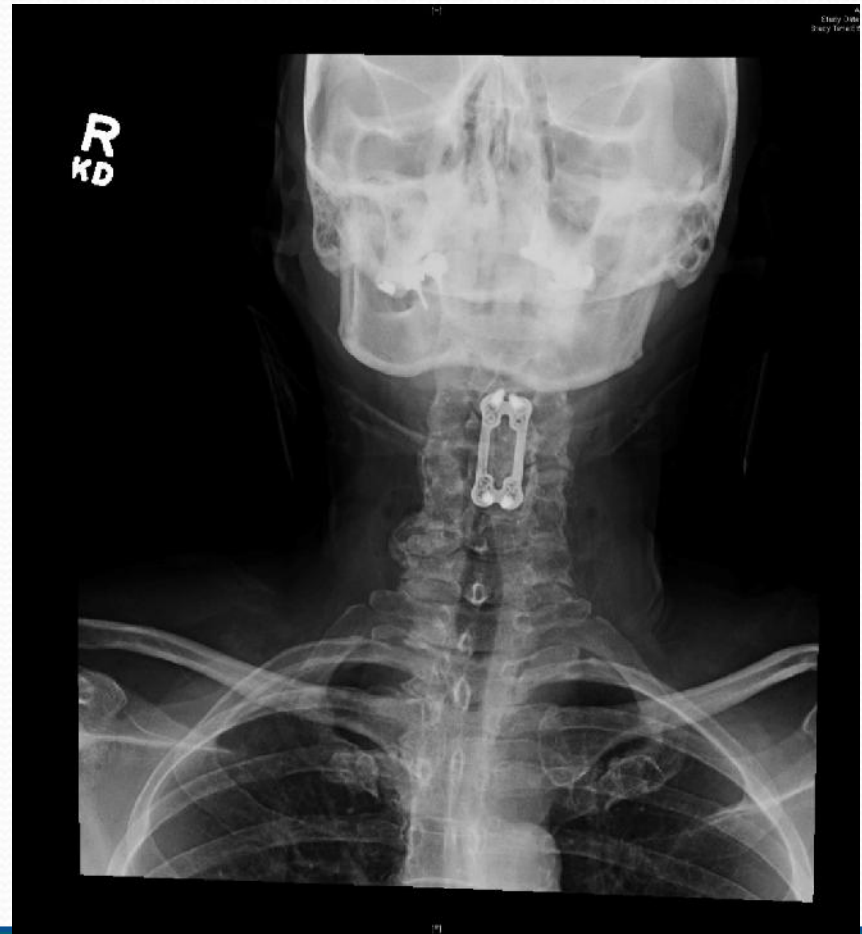




# 55 F w L Neck/shoulder Pain, L biceps weak



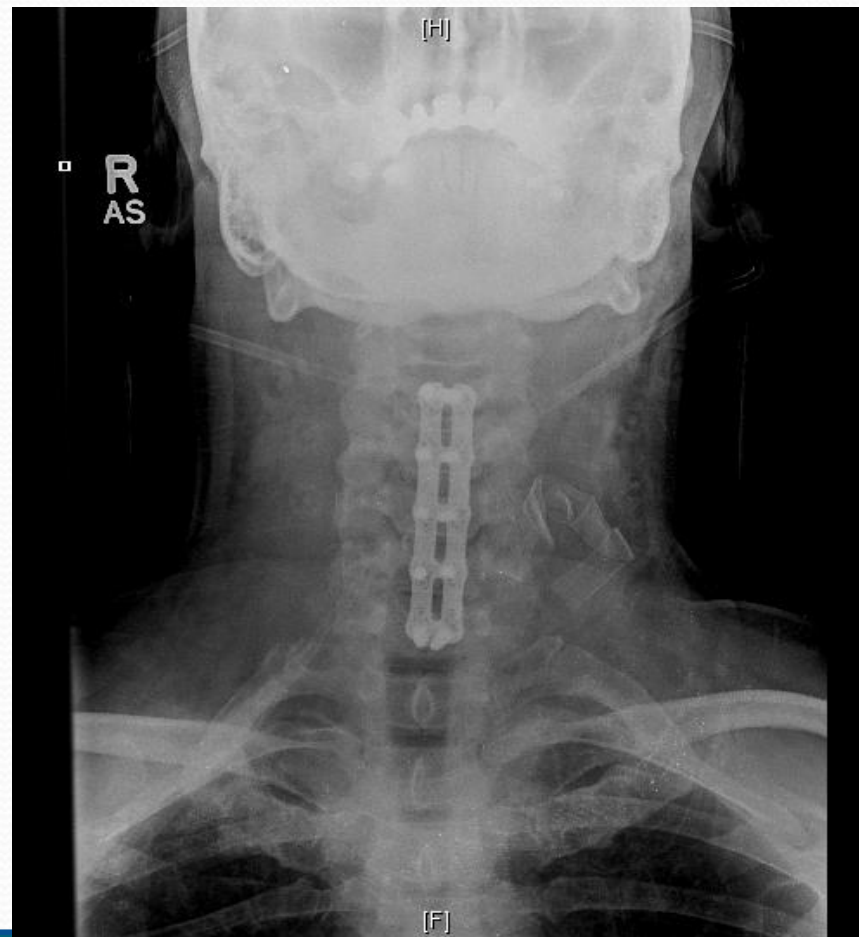
# C4 corpectomy – ACF C3-5





# 55 y M w loss dexterity, R C5-6-7 radic







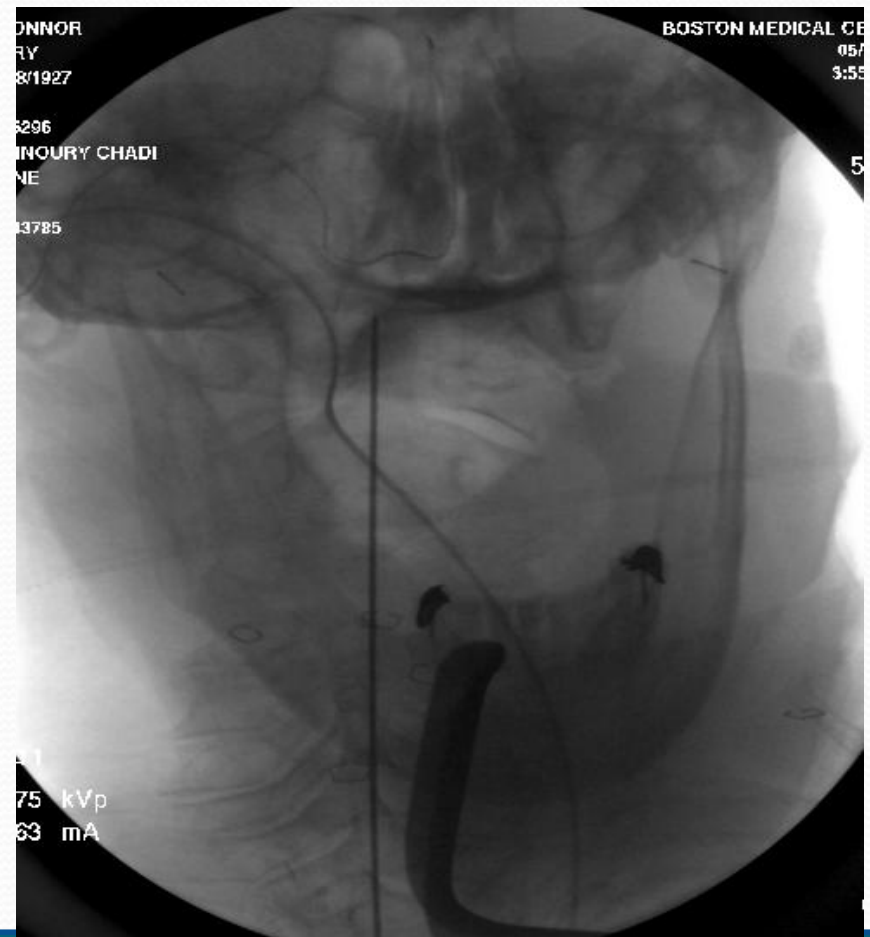
# 64 y m w hand N/T & diff Dexterity

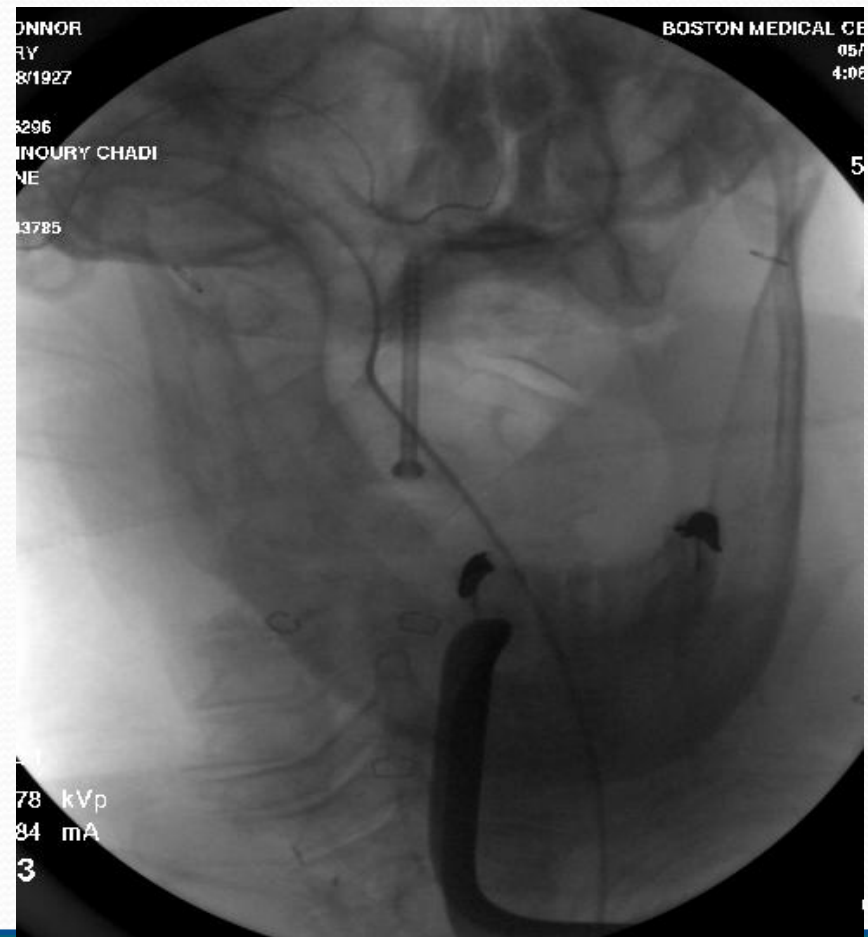
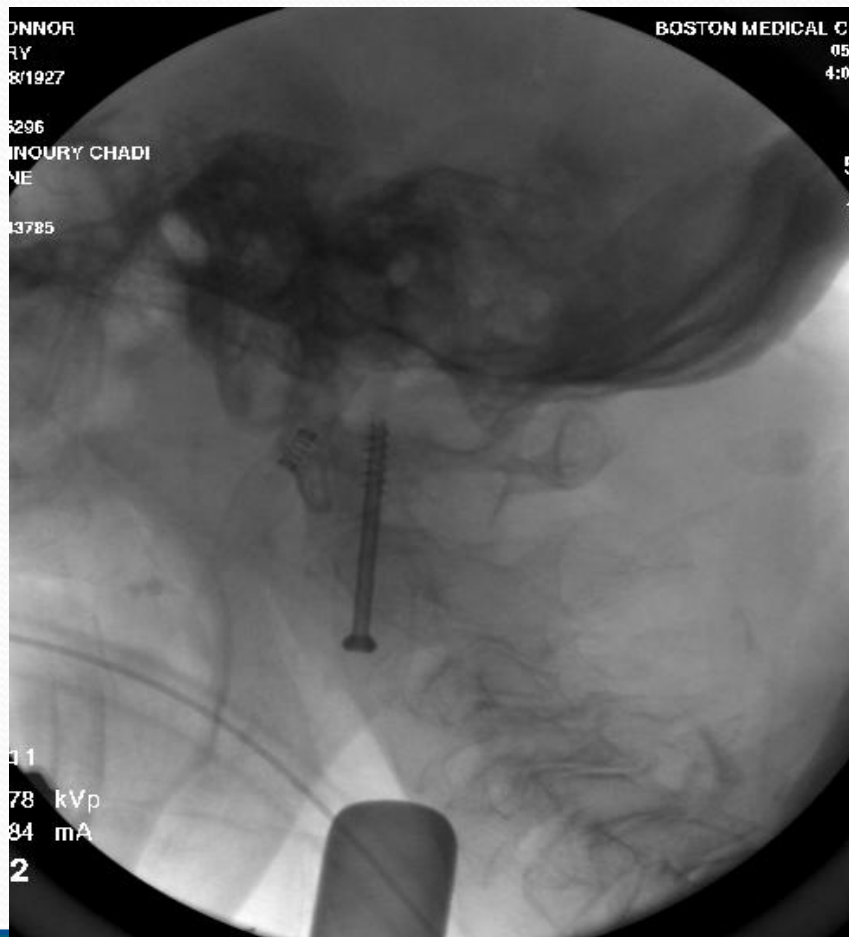


# 87 y F, fall face down, neck pain















# Thank You!