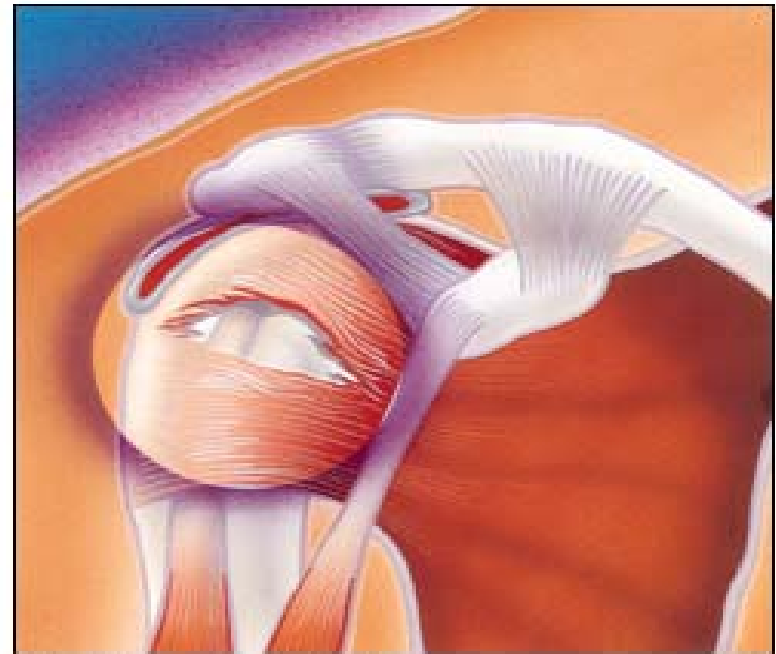
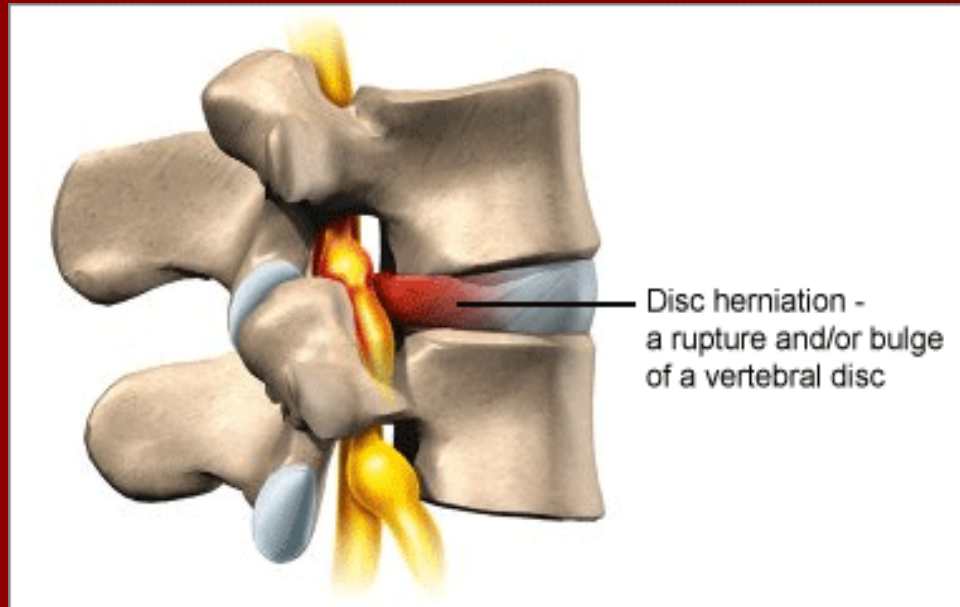


Cervical Spine Dysfunction vs. Rotator Cuff Tear



Full Thickness Rotator Cuff Tears

Objectives

- Brief review of cervical spine and shoulder anatomy
- Present common signs and symptoms of cervical nerve root compression
- Review video demonstration of evaluations on cervical spine and shoulder patients
- Present an early management process.

Why this topic???

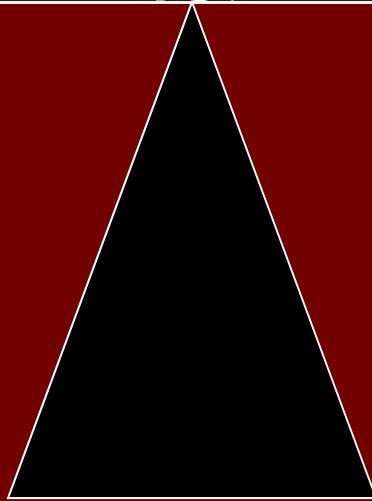
- Extremely high number of nerve root compression cases that mimic rotator cuff pathology
- Stress the importance of early recognition of both to prevent long term problems (i.e. retracted cuff or permanent nerve damage and loss of motor function)
- Need for an identification system for these types of patients.

Why so difficult to differentiate?

Cervical Disc

vs.

Rotator Cuff

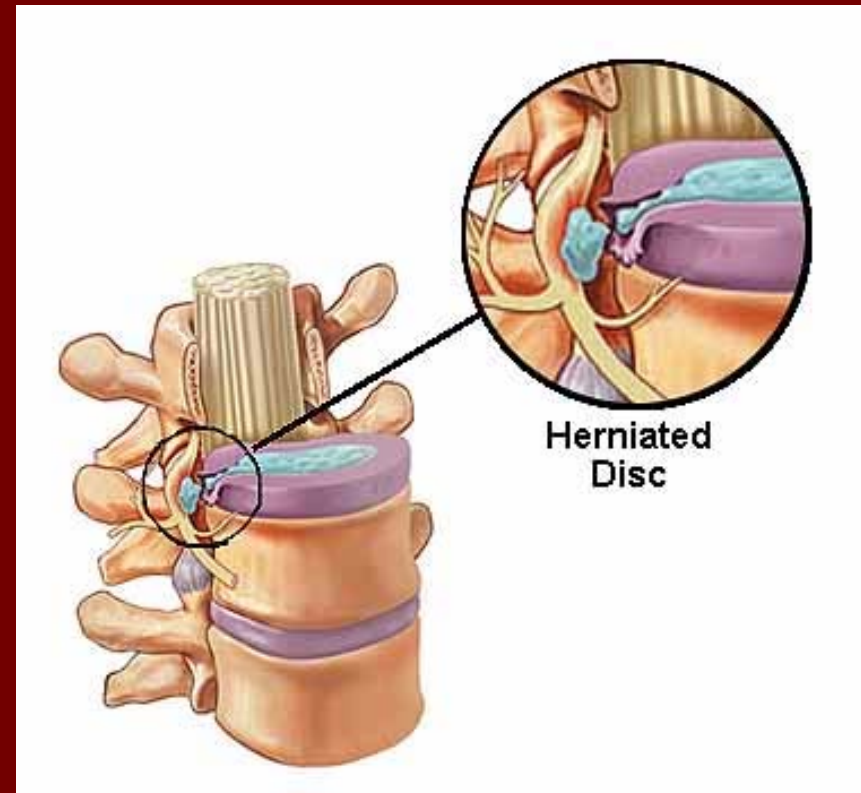


Can they both cause...

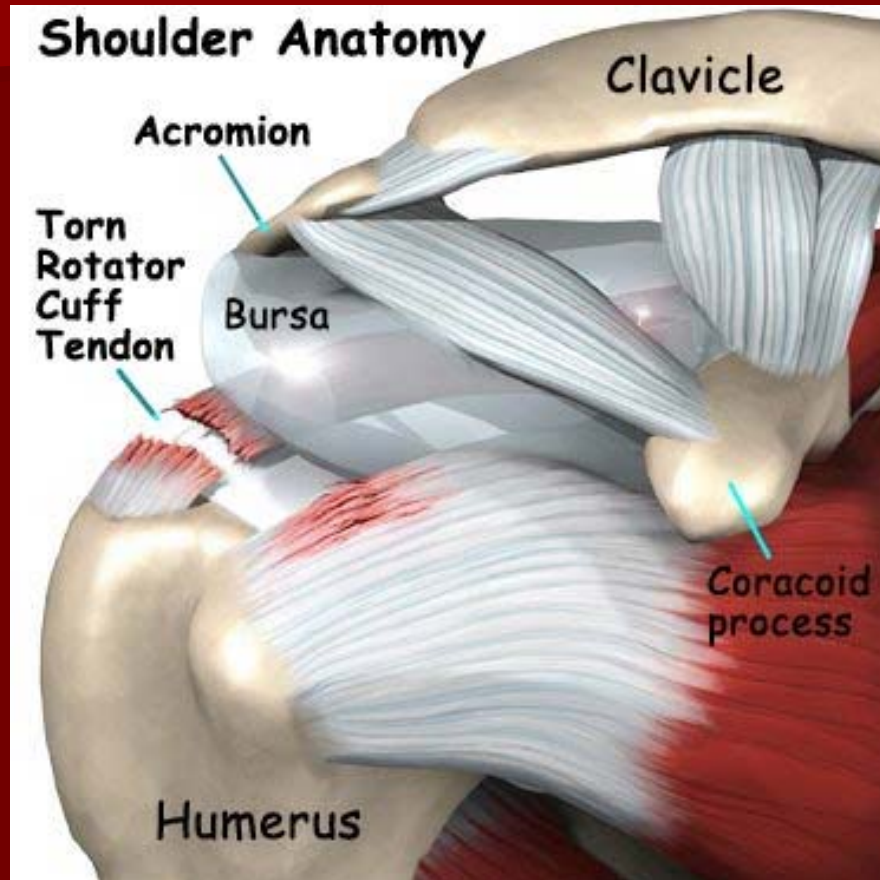
- 1) Pain in the shoulder? Yes
- 2) Pain in the neck? Yes
- 3) Nighttime pain? Yes
- 4) Loss of sensation? No
- 5) Loss of strength? Yes
- 6) Loss of reflex? No

Cervical disc herniation

- Radiculopathy past the elbow
- Loss of reflex
- Loss of strength
- Dec. sensation
- + Compression test
- + Spurling's
- Pain laying supine (no pillow)
- Inc. strength with traction
- + Marquis Maneuver



Rotator Cuff Tear/Impingement



- Palpable tenderness in the shoulder
- Pain with resistance
- + Neer's
- + Hawkin's Kennedy
- Weak ER, abd, flex.
- Reflexes normal
- Sensation normal

Cord Compression



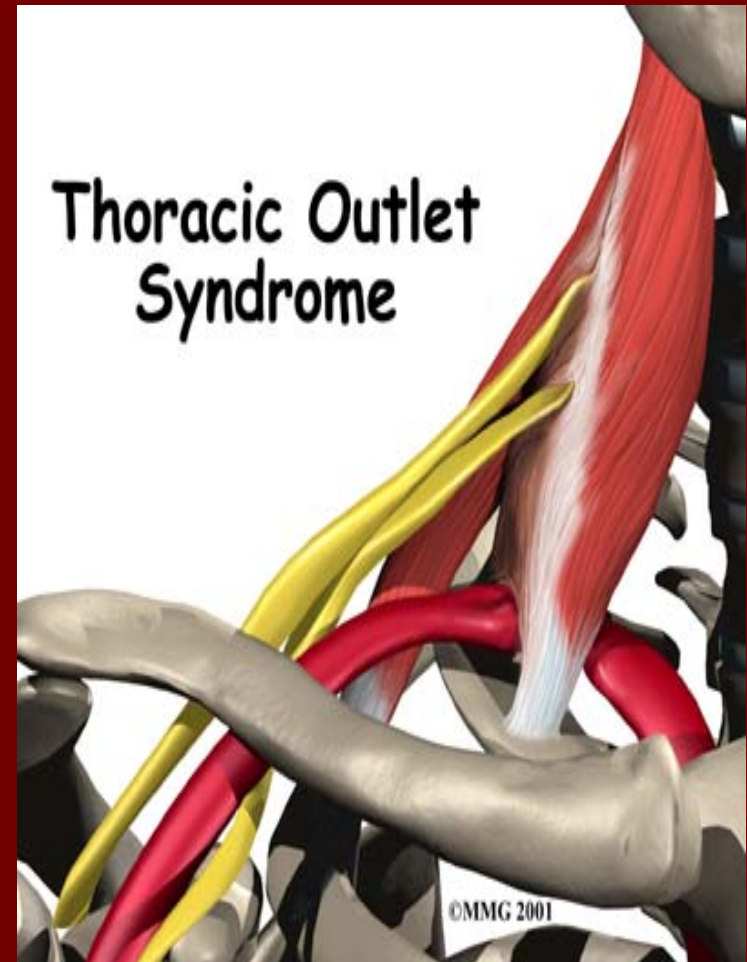
Causes of nerve root irritation

- Acute injury
- Repetitive strain
- Degenerative changes
- Poor postures

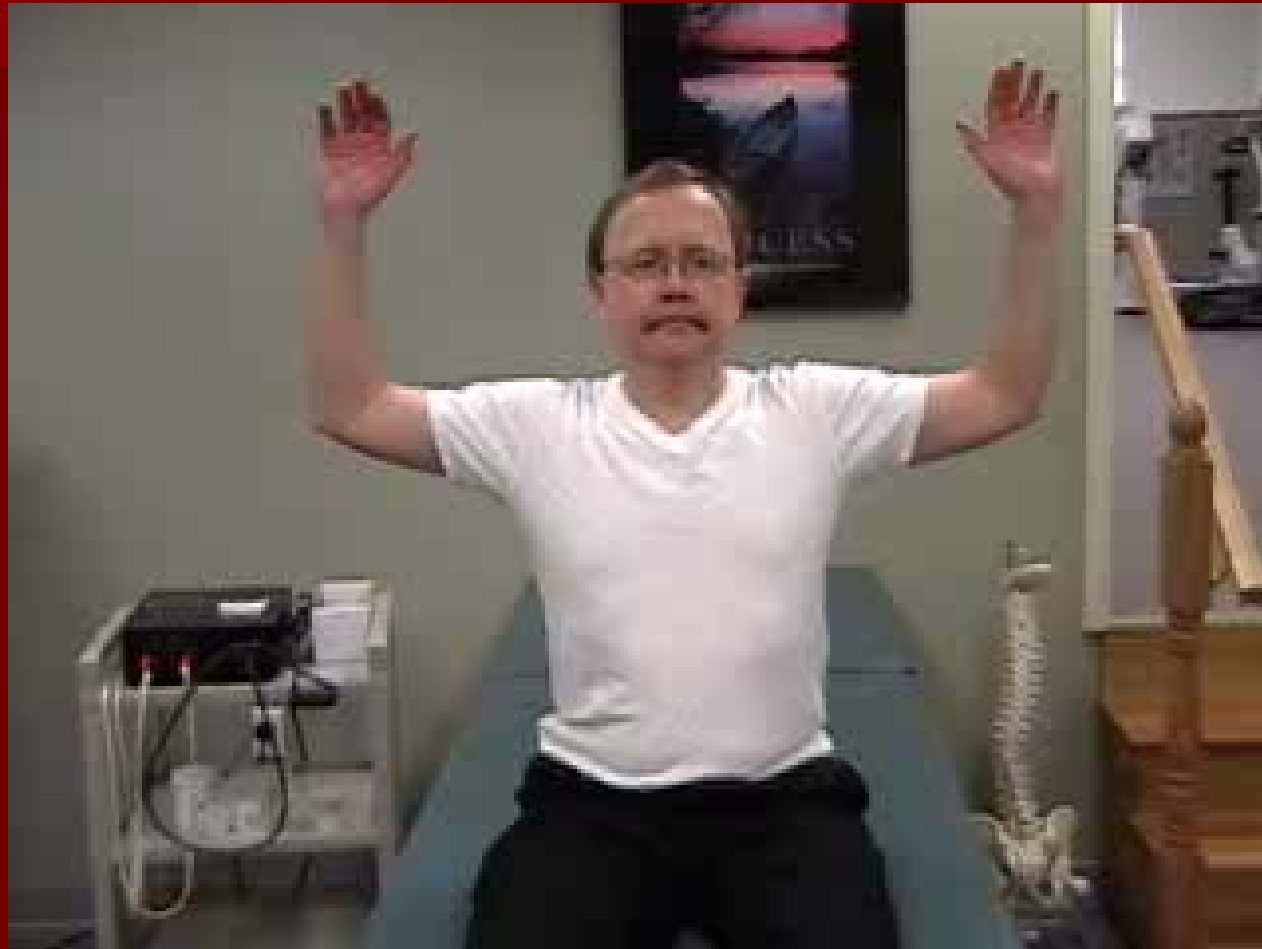


TOS

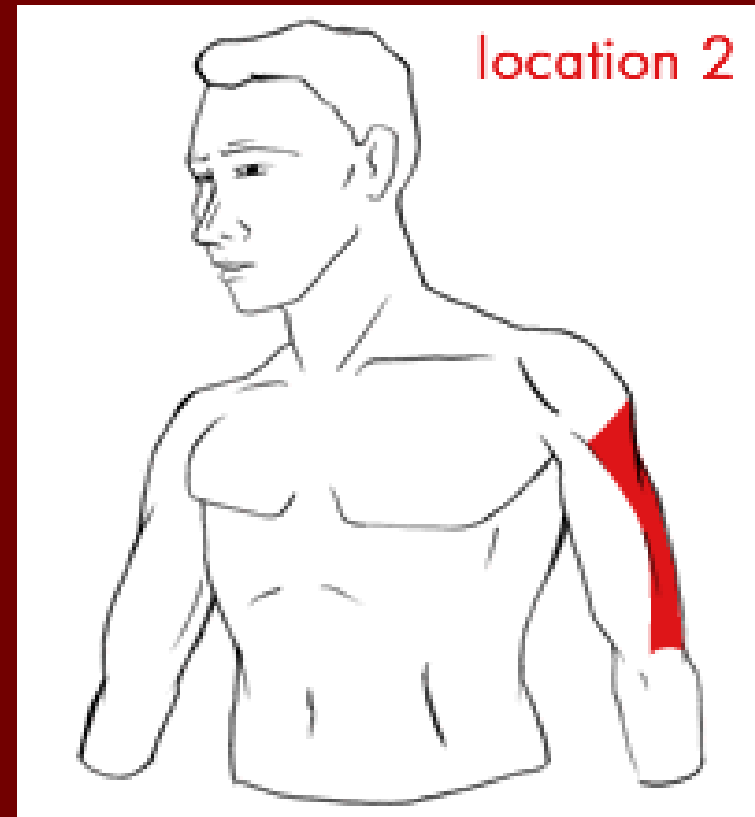
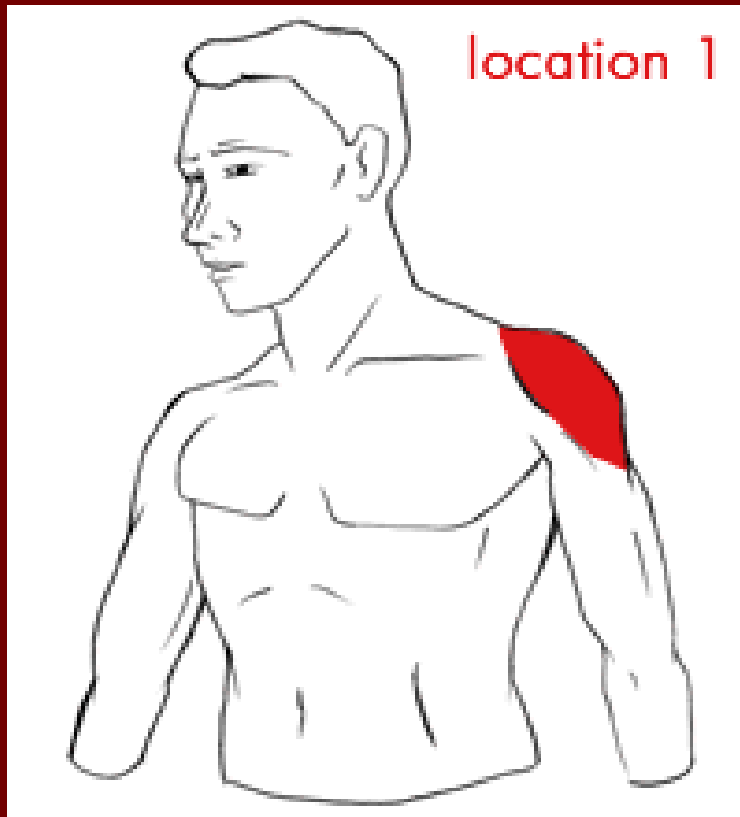
- “Heaviness” in the arm
- Difficulty with overhead activity
- Globalized paresthesia
- “Cold/dead” feeling
- Decreased pulse with Allen maneuver & Roos test



Thoracic Outlet Syndrome



Where do most people with RCT's have referred pain?



Referred pain from the c-spine



Scalene Trigger Points and Referred Pain Patterns



Composite pain patterns (solid red areas are the essential pain reference zones, and stippled red areas are the spillover reference zones) with locations of some trigger points (Xs) in the right scalene muscles (medium red). Scalenus anterior, medius, and posterior. Some trigger points may have only one essential reference zone.

Why do people with RCT's have pain in the upper trapezius?



Rotator Cuff Function

- Compresses the Gleno-humeral joint
- Elevates the humerus
- IR & ER of the humerus
- **Depression of the humerus on the glenoid**
- Accelerate & decelerate the arm

Orthopedic Evaluation of the Cervical Spine

- Specific history (MOI)
- Symptoms
- ROM
- Posture & Movement
- DTR's
- Sensation
- Strength
- C-spine compression
- Inhibitive distraction
- Spurling's test
- Vertebral Artery
- Palpation

Orthopedic Shoulder Evaluation

- History
- Clear the c-spine
- AROM
- PROM
- Manual Muscle Test
- Neer's Impingement
- Hawkins – Kennedy
- Palpation



Neck or Shoulder?



Neck or Shoulder?



Management of Mild Nerve Root Compression

- NSAID's
- Physical Therapy – C-spine muscle relaxation, inhibitive distraction (traction), postural program
- Ergonomic evaluation
- Periodic re-evaluation

Scenario #2

- Severe pain anterior shoulder, med. border of the scapula, and lateral epicondyle.
- Loss of sensation middle finger
- 3/5 strength triceps
- Unable to lay on back and extend neck due to pain
- Diminished triceps reflex

Management of Scenario #2

- Timeliness is key!!!!
- MRI
- Steroid pack followed by NSAIDS
- P.T. to take pressure off of nerve root
- If inhibitive distraction proves successful, try home traction unit
- Consult with neurosurgeon on call
- Possible LESI or surgery

What are the goals if the patient responds conservatively or surgically?

- Regain motor strength
- Avoidance activities
- Ergonomic assessment
- Restore cardiovascular endurance
- Postural program



Paul's Pearls

- 1) If there is motor weakness, try manual traction and retest strength. If strength improves then it is cervical and there is nerve root compression.
- 2) If resistance of a muscle is weak and smooth throughout the range and does not vary in intensity it is probably due to neurological compromise.

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