The Sternoclavicular Joint

Timothy P. Leddy MD
Orthopaedic Surgeon
Hand and Upper Extremity Surgery
Clinical Assistant Instructor of Orthopaedic Surgery Rutgers
No Disclosures
The Sternoclavicular Joint

- Interclavicular ligament
- Capsular ligament
- Intra-articular disk ligament
- Costoclavicular ligament
Sternoclavicular injury in sports

- What impact does SC injury have on athletic function?
- What is the optimal treatment for athletes with SC injury in order to return to sporting activity?
- Motor vehicle accidents and athletic injuries account for >80% of injuries to this joint.
- <3% of all Traumatic joint injuries
Function

• SC Joint ties the shoulder to the body and dissipates rotational forces.
• Unappreciated injury will impact shoulder function
• Proper imaging helps to identify injury
Osteology

Diarthrodial or saddle joint
Incongruous (~50% contact)
Fibrocartilage
Diagnosis

• Symptoms:
  • anterior dislocation
    – deformity with palpable bump
  • posterior dislocations
    – dyspnea or dysphagia
    – tachypnea and stridor

• Decreased arm ROM
• Paresthesia
• Turning head to affected side may relieve pain
Mechanism of Injury

- Usually high energy injury (MVA, contact sports)
- Atraumatic Subluxation usually result of ligamentous laxity
Stability

- The SC capsular ligaments provide strong support and are assisted by:
  - The costoclavicular (rhomboid)
  - The intra-articular disc and ligament
  - The interclavicular ligaments
What does it do?

- Functions to support the weight of the upper extremity
- Acts as a transition point between the shoulder girdle and the trunk
- Provides protection for the underlying mediastinal structures.
Imaging

• Radiographs
  – AP and serendipity views
    Beam at 40 cephalic tilt
    • anterior dislocation
      • affected clavicle above contralateral clavicle
      • posterior dislocation
    • posterior dislocation
      • affected clavicle below contralateral clavicle
  – CT scan
    • Visualize mediastinal structures and injuries
    • can differentiate from physeal fractures
Studies of SC injury

• Large prospective studies not possible with the frequency of the injury.
• This leaves the literature with a myriad of case reports and meta analysis.
Etiology of Pain

• Trauma
  • Sprain
  • Subluxation (Laxity)
  • Dislocation
    – Anterior
    – Posterior
  • Growth Plate Injury 20-25
  • Fracture

• Degenerative anterior subluxation
  • NOT to be confused with tumor! Rare.
Incidence

• ALL patients to the ER to three large hospitals in Belgium with SC pain over 2.5 years.

• At Total of 44 patients identified.
• Degenerative arthritis was the most common.
• Acute Trauma
• Tumor least common
Posterior Dislocation
Treatment

• Non-operative
  • Degenerative subluxation and dislocation
  • Atraumatic Subluxations
    – Reassurance
    – Sling for comfort

• Operative
  • Posterior dislocations
    – Closed vs Open Reduction
  • Chronic Instability
    – Ligament reconstruction
    – Medial Clavicle Excision
Ligament Reconstruction

Ligament Reconstruction

- Rehab:
  - figure-of-8 clavicle splint is used for 4 weeks
  - sling is used for an additional 6 to 8 weeks
  - No arm elevate ≥60°
  - At 12 weeks gradual increase for activities of daily living
  - No heavy labor activities when they have undergone medial clavicle resection.
Summary

• Injury to SC Joint is Uncommon
• Management is usually conservative
• Needs to be a high level of clinical suspicion for posterior dislocations
• RTS usually based on functional recovery unless surgery