Acromioclavicular Dysfunction

Normal Anatomy

- The ACJ is the joint between the acromion and lateral end of clavicle
- Hyaline cartilage is present with a fibrocartilaginous disk to aid with joint congruity
- The joint is made stable of the acromioclavicular ligaments, joint capsule and coracoclavicular ligaments
- The acromioclavicular ligaments superiorly and inferiorly stabilise smaller movements of the ACJ
- The coracoclavicular ligaments stabilise larger movements of the ACJ

Pathology

- Traumatic injury to the ACJ can lead to soft tissue damage or joint separation

Mechanism of Injury

- Falling onto shoulder with the arm horizontally adduction
- Direct blow to the acromion

Classification or Stages

**Type I**
- Sprain or partial tear of the joint capsule
- No instability noted

**Type II**
- Complete tear of the acromioclavicular ligaments
- Coracoclavicular ligaments remain in tact

**Type III**
- The acromioclavicular ligaments and coracoclavicular ligaments are torn
- The clavicle is displaced by approximately 100%

**Type IV**
- The acromioclavicular ligaments and coracoclavicular ligaments are torn
- The clavicle is displaced posteriorly

**Type V**
- The acromioclavicular ligaments and coracoclavicular ligaments are torn
- The clavicle is displaced by approximately 300%

**Type VI**
- The acromioclavicular ligaments and coracoclavicular ligaments are torn
- The clavicle is displaced inferiorly
Associated Pathologies

- Due to the detachment of the trapezius and deltoid ligaments from the distal clavicle in Type III – VI injuries there is increased risk of intra articular glenohumeral damage
- The brachial plexus and subclavian arteries are in close location to the clavicle, therefore neurovascular compromise must always be considered

Examination

Subjective

- 30+
- Direct blow to lateral acromion
- Falling into shoulder with arm in adducted position
- Falling on outstretched arm or onto elbow
- Completing sports such as football, American football, hockey, rugby and skiing

Objective

- Supports elbow with contralateral hand
- Step Deformity of the ACJ
- Restricted and painful glenohumeral internal rotation (Hand behind back)
- Restricted and painful horizontal adduction
- Pain at end range elevation
- Tenderness on palpation of the ACJ

Special Tests

- Horizontal adduction
- O’Brien’s Test

Further Investigation

- X-ray
Management

Conservative
- Type I – III are usually conservatively managed
- Sling is only used for pain relief in initial stages and should be disused as soon as pain allows
- End range elevation, internal rotation and horizontal adduction are avoided during early stages of rehabilitation
- Instability may be present with Type II – III, therefore scapular stabilisation exercises are very important due to acromion being part of the scapular
  1. Restore Normal Mobility
     ▪ Decrease swelling and inflammation around the joint
       - Soft tissue release
       - Ice
       - NSAID’s
     ▪ Normalise soft tissue
       - Frictions to ligaments and capsule
       - Dry needling
       - Soft tissue release to surrounding soft tissue
     ▪ Restore normal joint mechanics
       - Joint mobilisations
  2. Restore Dynamic Stability to Acromioclavicular Joint
     ▪ Motor Control and Strength (Closed Chain Exercises are more favourable)
       - Serratus Anterior
       - Lower Trapezius
       - Rhomboids
     ▪ Proprioceptive Training
     ▪ Return to Sport/Activity Specific Exercises

Plan B

Injection
- Corticosteroid injections may be considered to reduce pain and inflammation in elite or high level cases where urgent return to play is required

Surgery
- Types IV, V and VI
- Occasionally considered for Type III
- Surgery is aimed to reduce the instability
- Distal clavicle excision with coracoaromial ligament transfer
- Tendon graft reconstruction of coracoclavicular or acromioclavicular ligaments
References

(Cote et al., 2010; Harris et al., 2012; Malone, 2012; Warth et al., 2013)