Acute acromio-clavicular joint separation in sport

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Acromio-clavicular joint (ACJ) separation, typically from a direct blow to the tip of the adducted shoulder (e.g. 'driven into the turf' in a tackle), accounts for about 10% of all shoulder injuries.

The majority of ACJ injuries can be managed non-surgically with excellent outcome. Controversy exists regarding the management of high-grade ACJ injuries, which involve complete disruption of both the ACJ capsule/ligament and the coraco-clavicular ligaments.

Clinically there is tenderness and deformity over the ACJ (usually superior prominence of the lateral clavicle). This deformity may or may not be reducible (with downward pressure on the lateral clavicle and upward pressure beneath the elbow).

An x-ray will confirm dislocation of the ACJ (superior, posterior or very rarely inferior). Posterior dislocation is best diagnosed on clinical exam and axillary lateral x-ray.

When is surgery indicated?

Surgery is usually recommended in acute high-grade ACJ separations with marked displacement of the lateral clavicle where deformity is not reducible. The ACJ is not reducible if the lateral clavicle 'button-holes' posteriorly through the trapezius muscle, if there is interposition of the delto-trapezial fascia between the acromion and the lateral clavicle, or (rarely) if the lateral clavicle becomes 'locked' under the coracoid.

Managing reducible high grade ACJ separation remains controversial. The vast majority will become pain free (after 4-6 weeks in a sling) and return to full sports function by three months. Early surgical fixation may offer benefit in those returning to sports with repetitive overhead activity and/or throwing (basketball, volleyball, tennis). If return to contact sport is anticipated (rugby, AFL), then surgery is usually not recommended due to the high risk of re-injury/failure of fixation.

Fig 1. AP x-ray demonstrating high grade ACJ separation

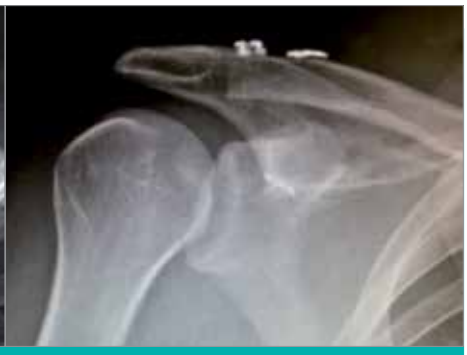

Fig 2. AP x-ray following ACJ reconstruction

Optimal timing of surgery

If surgery is chosen, they are best fixed early (within four weeks) when the biological healing response is greatest. Surgery may involve using a plate or repair/reconstruction of the ligaments using synthetic material or hamstring tendon.

In the acute ACJ separation, which is initially managed without surgery, a small percentage will report ongoing pain, shoulder weakness and/or lateral clavicle instability beyond three months. These symptoms may prevent a return to sport. Results from delayed reconstruction are nearly comparable to early surgery and yield high rates of return to sport.

All ACJ separations are associated with an increased risk of developing post-traumatic ACJ arthritis. This typically manifests as ACJ pain and crepitus several years later. Surgery to excise the arthritic joint with or without stabilization of the lateral clavicle (depending on the degree of lateral clavicle instability) can be considered.

References available on request.

WHEN IS EARLY SURGERY CONSIDERED?
Severe deformity
Irreducible deformity
Young overhead athlete

Author competing interests. Nil relevant disclosures. Questions? Contact the author on 9230 6333