



QUESTION | Over the last few years I have been seeing more patients with grade 3 Acromioclavicular joint injuries being treated without surgery. Can you please explain why this is the case?

ANSWER | Acromioclavicular joint (AC) injuries are very common. The injury is caused by a fall causing a direct impact to the shoulder. The scapula is driven down which causes tearing of the AC joint capsule, followed by failure of the coracoclavicular (CC) ligaments and deltotrapezial fascia. There is usually an abrasion on the back of the patient's shoulder near the acromion.

The Rockwood classification is the most widely used classification for AC joint dislocation but has the disadvantage of being a purely radiographic classification system. Generally speaking, outcomes can be predicted by the grade of injury, so knowing the grade dictates the appropriate treatment.

In addition to the routine views of the shoulder you will need a Zanca view (which looks specifically at the AC joint) and an axillary lateral of the shoulder. These indicate the degree of separation of the joint as well as whether the clavicle has shifted posteriorly.

Rockwood's original classifications were:

- Type I- AC ligament sprain with the AC joint appearing normal on Xray.
- Type II- AC ligaments and joint capsule are disrupted. The CC ligaments are sprained but intact. There is a 50% vertical subluxation of the distal clavicle.
- Type III- AC and coracoclavicular ligaments (and joint capsule) torn with 100% AC joint dislocation.
- Type IV- Posterior subluxation of the clavicle into the trapezius (Often best seen on axillary radiographs). Three dimensional imaging can be helpful in these cases.
- Type V- An exaggeration of a type III injury with 100% to 300% superior displacement of the clavicle. Often this means a 2-3 times increase in the coracoclavicular distance.
- Type VI- This is very rare. There is subacromial or sub-coracoid displacement of the clavicle and a reversed CC interspace.

The ISAKOS Terminology Project more recently suggested modifying the Rockwood classification by further subdividing the type III injuries into type IIIA (stable) and type IIIB (unstable)

Treatment:

Grades I, II, IIIA:

These AC joint injuries should generally be treated non-operatively. A simple sling can be worn (if needed) for 3-7 days for comfort and movement allowed as tolerated. A physiotherapy rehabilitation program is initiated once pain subsides, and return to contact sports allowed after about two months.

Gladstone developed a 4-part physical therapy protocol.

- Phase 1 focuses on the elimination of pain and protection of the AC joint through sling immobilization, along with the prevention of muscular atrophy. Start with closed-chain scapular activities that are easily tolerated early in the post-injury period, allowing the patient to work on scapular strength and motion without provoking undesirable increases in symptoms. These exercises unload the weight of the upper extremity, allowing the patient to focus on isolating scapular motion.
- Phase 2 is range-of-motion exercises to restore full mobility. A gradual progression of strengthening with the addition of isotonic exercise is used.
- Phase 3 involves advanced strengthening to enhance the dynamic stability of the AC joint.
- Phase 4 incorporates sport-specific training to prepare for a full return to prior level of activity. Full rehabilitation should be achieved within 6 to 12 weeks.

Grade IV to VI:

More severe AC joint dislocations are treated acutely with surgery to reduce the clavicle that has pierced the deltotracheal fascia. The surgical technique generally involves positioning the AC joint in the anatomic position so that the native ligaments will scar and stabilize the AC joint.

Grade III:

The treatment of the grade III AC joint dislocation is controversial because some people seem to do well and others have problems after surgical intervention. This is why the new classification has been introduced. It has not yet been validated but certainly fits my personal experience treating these patients. The trend towards non-operative management is based on a meta-analysis which showed that patients treated non-surgically returned to work and pre-injury activities sooner and had nearly normal strength and ROM at follow-up. Patients treated surgically had a higher complication rate. This did not use the IIIA and IIIB classification.

Patients who perform repetitive overhead work tasks, such as painters are more likely to experience symptoms of scapula fatigue with an AC joint dislocation. In this subset of patients, acute surgery can be considered. Surgery for an acute AC joint reconstruction is best done within six weeks of the injury. Many procedures have been described and most generally work well.

When non-operative treatment is chosen, some patients will have persistent pain and inability to return to their sport or work. Once the acute injury has healed (after six weeks) surgical treatment must include a biological reconstruction of the coracoclavicular ligaments, as ligament healing is already complete.

I look very carefully at patients with grade III injuries to see if the joint is stable or unstable. If they are stable I will treat them non-surgically. If the patient performs a lot of overhead activities and has a grade IIIB injury I will usually offer them surgery.

Dr Doron Sher

Reference

[Gladstone JN, Wilk KE, Andrews JR. Nonoperative treatment of acromioclavicular joint injuries. Oper Tech Sports Med 1997;5:78-87.](#)