

# Acromioclavicular Injuries

## Controversies in Treatment

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### In brief

**Injuries to the acromioclavicular (AC) joint commonly occur among athletes. Dislocations are usually visually apparent, but sprains require a directed physical exam to determine the extent of damage to the AC joint. To rule out fractures, radiographs should be part of the diagnostic work-up. A review of the literature examines the controversy over surgical and nonsurgical methods to treat AC dislocations. Treatment, even for some of the more severe injuries, is conservative and includes ice, immobilization, and, occasionally, attempts at closed reduction.**

**A** cromioclavicular (AC) dislocations can arise from several scenarios that active patients encounter, especially in contact sports such as football, soccer, and hockey.

Generally, patients sustain AC dislocations when they:<sup>1</sup>

- Land on the point of a shoulder, driving the acromion downward (figure 1);
- Sustain a blow from behind with the ipsilateral arm fixed on the ground, driving the clavicle forward and away from the acromion; or
- Fall on an outstretched hand or elbow, creating a backward and outward force on the acromion

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(see "About the Acromioclavicular Joint," page 94).

AC dislocations make up a small but significant part of all shoulder dislocations. In a classic review of shoulder injuries at the Massachusetts General Hospital in Boston, E.F. Cave reported that 12% of all shoulder dislocations involved the AC joint, whereas 85% occurred at the glenohumeral joint, and 3% involved the sternoclavicular joint.<sup>2</sup>

*continued*

### Assessing Shoulder Symptoms

Asking the patient about the mechanism of injury is a good starting point for the physical exam. Usually, he or she describes one of the three scenarios listed earlier. The examination checklist includes evaluating the patient for:

- Associated paresthesias,
- Tenderness at the AC, sternoclavicular joint, and the coracoid process,
- Ability to voluntarily reduce the separation with the shrug maneuver,
- Prominence and shoulder abrasions over the separation,
- Amount of active shoulder motion, and
- Anteroposterior and cephalad-caudal translation of the clavicle.

When performing the examination, it is important to rule out other sources of shoulder pain including impingement syndrome, rotator cuff tear, and a winged scapula secondary to long thoracic nerve neurapraxia or palsy.

### How Severe Is the Injury?

Physicians classify a patient's AC joint injury based on the extent of ligament injury with a three-level grading system that Allman<sup>3</sup> developed and Rockwood and Young<sup>2</sup> modified. Rockwood and Young expanded the grading system to include three more severe injury categories and referred to all the levels as "type" rather

**Based on his review,<sup>13</sup> Cox recommended closed treatment of type III separations.**

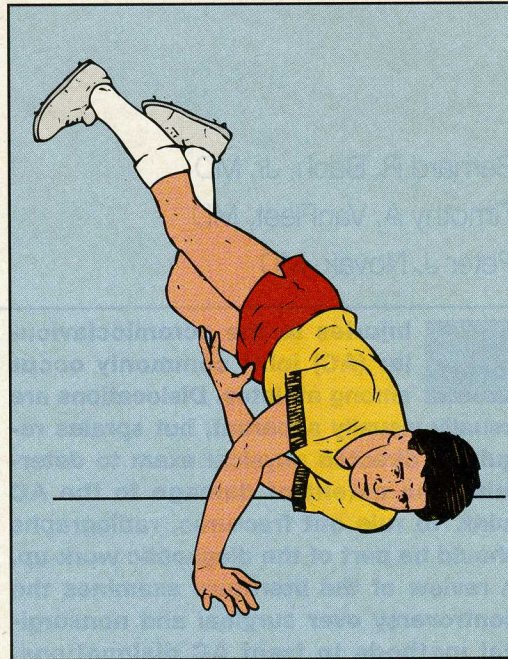
than "grade" (figure 2).

*Type I* sprains involve a partial disruption of AC ligament and capsule. Laxity in the AC joint is absent, and the examiner notes point tenderness over the joint.

*Type II* sprains consist of a ruptured AC ligament and capsule with incomplete injury to the coracoclavicular (CC) ligament, resulting in minimal AC joint subluxation.

*Type III* separations exhibit complete tearing of the AC and CC ligaments, possible deltoid-trapezius fascial injury, and dislocation of the AC joint. Deformity is obvious (figure 3), and the distal end of the clavicle is easy to palpate. A

Figure 1: Terry Boles



**Figure 1. A fall on the point of the shoulder is a common mechanism of injury among athletes who sustain AC injuries.**

CC interval increase of more than 25% indicates a type III separation.

*Type IV* dislocations consist of a displaced clavicle that penetrates *posteriorly* into or through the trapezius muscle. The examiner can detect this condition by viewing the patient's shoulder from above.

*Type V* dislocations simply are severe type III injuries with a greater CC interval—100% to 300% more than an uninjured shoulder.

*Type VI* injuries are rare, but when they occur, the patient's clavicle is displaced *inferiorly* to the coracoid process.<sup>2</sup>

Rowe<sup>4</sup> describes another AC injury, type VII, in which a *bipolar* dislocation of the clavicle occurs with ruptures of the sternoclavicular and CC ligaments.

### Rule Out Fractures With Radiographs

Although a diagnosis of AC dislocation is usually clear from clinical examination, it is impera-

