

AthletiHINTS



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Acromioclavicular injuries

Introduction

Injuries to the acromioclavicular (AC) joint are common in athletes. However, these problems are often confused with other problems associated with the shoulder. This injury is approximately five times more common in men than in women.

Mechanisms of Injury

1. The athlete falls on the point of the shoulder, forcing the acromion and the coracoid process downward.
2. The athlete falls on the outstretched hand, transmitting the force up to the arm and through the acromioclavicular joint.
3. The athlete falls on the outstretched hand, which is at a right angle to the body. Contact is then made by the opposition against the shoulder, forcing the shoulder forward on a fixed arm.

AC joint injuries are classified as types I through VI, according to the severity of the injury and the ligaments involved. In this overview we will focus on types I, II and III. Types IV - VI are rare modifications of type III injuries and require surgical repair.

Type I

Strain of the acromioclavicular ligament or capsule. Coracoclavicular ligament is intact. There is generally tenderness and swelling over the AC joint. There is minimal limitation of range of motion and the clavicle is stable.

Type II

Severe sprain of the AC ligament. Partial strain or stretching of the coracoclavicular ligament. There is increased swelling and tenderness over the joint and some tenderness over the ligaments. The shoulder motion is considerably limited due to pain. There is slight elevation of the clavicle relative to the acromion process.

Type III

Complete tearing of the AC and coracoclavicular ligaments. There is often damage to the shoulder muscles surrounding the area. The athlete supports the arm, as the symptoms are markedly increased when the arm hangs. There is significant tenderness and swelling and an obvious elevation of the clavicle relative to the acromion process.

The clinical differentiation of these injuries by type is based on physical examination. X-rays may be useful to exclude fractures of the clavicle, acromion, coracoid or humerus. It is important to differentiate AC joint lesions from contusions to the end of the clavicle ("shoulder pointer"). A shoulder pointer implies a contusion only; there is no ligamentous involvement.

Management

Type I

Rest and application of ice usually result in cessation of discomfort within two weeks. Full return to activity should not be allowed until the patient has painless full range of motion. A sling should be initially applied. This is then followed by rehabilitation exercises to restore normal shoulder

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function quickly. A donut pad can be worn over the acromioclavicular joint if the athlete participates in contact sports.

Type II

At the onset of the injury, ice is again applied. The joint needs to be immobilized for two to four weeks, depending on the severity of the injury. Application of ice and rest are indicated as for type I injuries. The athlete will also require extensive rehabilitation and may not return to sports for up to eight weeks.

Type III

The management of type III injuries remains controversial. In the acute phase, ice application and rest are important. These injuries have been managed with surgical and non-surgical treatment. Support for non-operative treatment is well-documented in medical literature, and the current trend is reflective of this. In general, use of a sling is recommended for approximately four weeks, followed by gentle movement and strengthening. Guarded return to work and sports is allowed over the subsequent three months, dependent upon the return of full, painless range of motion and stability of the joint. Participation in contact sports is usually permitted three to five months after the injury, depending upon functional recovery. Operative management of acute injuries is generally reserved for high-level pitchers or patients with open injuries, nerve damage or severe dislocations.

Complications

1. Pain, disability and decrease in shoulder range of motion may occasionally be troublesome.
2. Degenerative changes may involve the acromion, resulting in spur formation which leads not only to pain in the AC joint, but impingement of the rotator cuff.
3. Calcification can develop over the end of the clavicle and render this area painful.
4. An unreduced separation may result in cosmetic deformity, consisting of a bulge over the end of the clavicle.

Rehabilitation

Rehabilitation exercises for the entire shoulder girdle muscle complex should continue until pre-injury power, strength, endurance and flexibility are obtained. Attaining full shoulder range of motion is the first goal of rehabilitation. Static contraction exercises for all planes of motion can be started early and later progressed to resisted strengthening for all shoulder movements in straight planes and diagonals. Rotator cuff and scapula stabilizer muscle strengthening may be necessary. Resistance for exercise may be in the form of elastic tubing, weights, isotonic exercises on a Universal gym or Nautilus, and isokinetic exercises with Cybex or BTE.

Conclusion

Our understanding of the acromioclavicular joint and its associated injuries has increased during the last three decades. Injuries to this joint are classified as acute or chronic and by severity of displacement. Most are treated non-operatively. In AC sprains, return to sporting activities is dependent upon the achievement of full range of motion and strength with stability comparable to the uninjured shoulder.