Grade 2 Acromioclavicular Sprain with Distal Clavicle Fracture in a College Football Athlete

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Abstract

Injury to the acriomioclavicular joint and the clavicle are common injuries seen in athletics. The uniqueness in this case is both the acromioclavicular joint sprain and the clavicle fracture in the case of the 19-year old male college football athlete during practice. The athlete was performing a one vs. one drill at practice and fell to the ground on the tip of his left shoulder. Immediate care was administered and was referred to the team physician for X-rays and a MRI which revealed a distal clavicle fracture with a grade 2 acromioclavicular joint sprain. Surgery was not recommended and athlete underwent rehabilitation throughout the season.

Purpose

Domain II in Athletic Training is Clinical Evaluation and Diagnosis. The purpose of this case report demonstrated a common injury seen in athletics; however having an athlete experience both the acromioclavicular joint sprain and distal clavicle fracture is rare.

Background

- 19-year old male
- Right Hand Dominant
- Freshman Collegiate football; Cornerback
- History of Shoulder Injuries

Differential Diagnosis

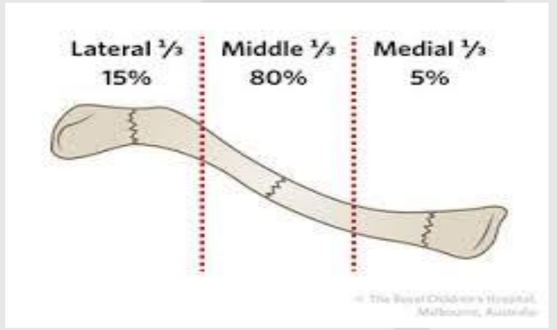
- Acromioclavicular Sprain
- Clavicle Fracture
- Upper Trapezius Strain
- Deltoid Contusion

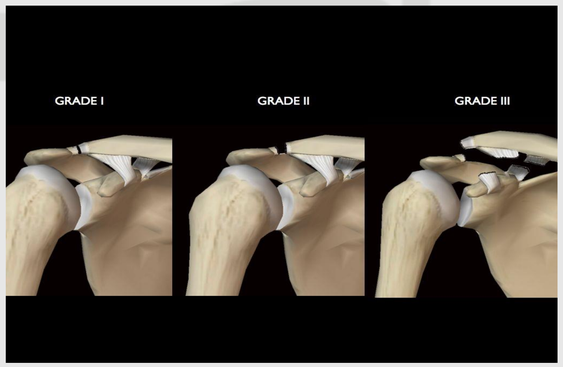
Clinical Evaluation

- Point tender on acromioclavicular joint and trapezius
- Limited shoulder flexion, extension, abduction, adduction, and external rotation
- - Piano Key (+ for pain), -Shear Test (+ for pain), -Shoulder Glide Test (+ for pain)
- X-Ray positive for distal clavicle fracture
- MRI positive for grade 2 acromioclavicular sprain

Treatment

Immediate treatment with ice, a sling immobilizing the shoulder, and prescription NSAIDS from team physician. Athlete was ruled out for participation and once pain subsided 2 weeks from the onset of injury, athlete started rehabilitation for the shoulder beginning with range of motion and isometric exercises excluding adduction due to onset of pain. By 5 weeks post injury, no pain was reported from the athlete and range of motion was restored. At 8 weeks post injury, progression in rehabilitation included proprioception exercises, rhythmic stabilization exercises, upper extremity plyometrics, and participated in return to play sport specific functional movements. At 10 weeks, the athlete was cleared returned to play and has remained asymptomatic.





Implications

Injuries to the AC joint and the clavicle are among the most common upper extremity sporting injuries. 10% of shoulder injuries involve the acromioclavicular joint and clavicle fractures represent 5-10% of all fractures seen in orthopedics. Because there can be varying amount of damage in the process of an acromioclavicular joint separation, these injuries are given ratings of grades 1-6 ranging from mild sprain to a severe dislocation with displacement. The grade 2 acromioclavicular sprain involves a partial separation of the joint with increased anterior, posterior, superior and inferior translation. Clavicle injuries can be divided into three distinct anatomical sites; the medial, shaft and distal end, and the mid-shaft of the clavicle. 15% of clavicle fractures accounts are located on the distal end of the clavicle and in an orthopedic examination the shoulder may appear shortened relative to the bilateral side and may drop inferiorly. The mechanism of injury regarding the grade 2 acromioclavicular joint sprain and the distal clavicle fracture often result from a fall onto the tip of the shoulder, the arm in adduction or a fall on an outstretched hand.

Conclusion

This case report highlighted a collegiate athlete who suffered a grade 2 acromioclavicular joint sprain and a distal clavicle fracture. The research has suggested the mechanism of injury experienced in this case would result in the more common acromioclavicular joint sprain or distal clavicle fracture and not both which shows it's uniqueness. As athletic trainers it is important to be aware of the mechanism of injury and ensure a completed orthopedic evaluation to ensure referral of unresolved pain that persists.

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