INTRAARTICULAR GLENOID FRACTURE WITH A DISPLACED AND COMMINUTED CORACOID PROCESS IN A MALE COLLEGIATE FOOTBALL PLAYER

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Background: A male collegiate football player reported to the athletic trainer with right shoulder pain after tackling an opponent. During this tackle the athlete landed on the olecranon process of a flexed elbow causing an axial load through the humerus into the glenoid upon impact with the ground. Patient reported feeling his shoulder “slip” out of place. This sensation was felt earlier in the game, but went unreported until further injury. Upon evaluation, the patient was point tender over: the anterior/posterior humerus, right anterior/posterior glenohumeral joint, right upper trapezius, and the posterior deltoid. Active range of motion of the right shoulder was significantly decreased. Passive range of motion was unable to be performed secondary to pain. Range of motion for the left shoulder was within normal limits. Manual muscle testing of the right shoulder musculature 3/5. Manual muscle testing for the left shoulder musculature 5/5. Positive special tests included: anterior apprehension, posterior drawer, and posterior apprehension. Negative special tests included: anterior drawer, jobe relocation, and grind. All other special tests were unable to be performed secondary to pain. All upper extremity dermatomes, myotomes, and reflexes were within normal limits and intact. Differential Diagnosis: Right shoulder posterior subluxation, anterior shoulder subluxation, acromioclavicular separation, scapular fracture, or superior labrum anterior-posterior tear. Treatment: Initial treatment consisted of immobilization in a sling, cryotherapy and the patient did not return to play. A transcutaneous electrical nerve stimulation unit and non-inflammatory anti-steroidal drugs were given to the patient for pain control. The patient was referred for x-rays to rule out a fracture, which revealed negative results. A three day follow-up revealed limited range of motion (AROM: 5-10° shoulder flexion, 0-5° abduction; PROM: 45° flexion, 80° abduction). Secondary to the severity of the patient’s pain, an MRI and CT scan were ordered by a physician. The MRI and CT scan revealed a vertically oriented fracture of the anterior, superior aspect of the glenoid extending through the base of the coracoid process from the one o’clock to the three o’clock position. There was a 4-mm displacement of the base of the coracoid process. Due to the complexity of the injury, the athlete was referred to a shoulder specialist to consider treatment options, including surgery. The physician opted against an internal fixation procedure due to the risk of complications. Deciding to withdraw from college, the patient was instructed by his physician to continue with conservative treatment at a rehabilitation clinic, beginning approximately one month post injury. Reports of the patient’s progression will be observed and documented. A follow up x-ray at approximately one month showed continued 4-mm displacement and no callus formation. Uniqueness: The mechanism of injury does not commonly result in an intraarticular glenoid fracture with a displaced and comminuted coracoid process. This mechanism of injury is more commonly associated with shoulder subluxations. Fractures to the coracoid process are rare and usually overlooked on radiographs, as was with this case. Also, the non-surgical approach was chosen as recommended by the physician, and the patient was not immobilized. Conclusion: A direct fall on to the elbow usually does not result in such injuries but athletic trainers should be aware that these incidences still occur and must be considered. Further diagnostic tests should also be considered if a patient presents with continued clinical symptoms despite negative x-rays. Surgery for this particular injury is typically opted when there is greater than a 1-mm of displacement of the base of the coracoid process. The surgical approach would cause a greater lack of mobility in comparison to the conservative treatment. Key words: intraarticular glenoid fracture displaced and comminuted coracoid fracture, shoulder subluxation.

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