Isolated, High Grade Tear of Teres Minor in Collegiate Division 1 Football Player

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Background:
Buford’s complex also involves thickening of the middle glenohumeral ligament. This complex is present in only 1.5% of individuals and is often mistaken as a SLAP lesion on MRI. Lacking part of this vital inert stabilizing structure allows for greater anterior translation of the humeral head and when great enough, increased stretching forces on the posterior structures of the glenohumeral joint, including the posterior capsule and even the rotator cuff musculature. High-grade, isolated damage to the teres minor muscle is a highly unlikely and uncommon event, especially in athletic endeavors.

Case Presentation:

Patient: A 20-year-old male D1 football player with no prior history of shoulder injuries was engaged in a blocking drill and was hit from behind, forcing his right humerus into excessive horizontal adduction at high velocity. He reported feeling a “pop” and sensation of “giving away”. His chief complaint was pain on the anterior lateral aspect of shoulder, extending into the mid upper arm, and he could not horizontally adduct arm secondary to pain. He also complained of paresthesia into his fifth finger. Physical exam revealed profound AROM and PROM limitations secondary to pain, exhibiting only 80 degrees of active flexion, and 45 degrees of active abduction. Pain prevented performance of Apley’s functional and cross body scratch tests. Subject displayed full external rotation in neutral position however, but manual resistance produced significant pain and apprehension. A markedly positive apprehension test was noted. Initial differential diagnosis included glenohumeral subluxation, labral damage and rotator cuff pathology.

Intervention: Athlete was removed from practice and cryotherapy applied for pain control. He was immobilized in a sling and a physician referral scheduled. The physician suspected an isolated labral tear and so ordered an MRI/A with contrast. Radiographs were negative for bony trauma and MR revealed a high-grade tear of the teres minor at the distal musculotendinous junction. Conservative treatment of rest and progressive rehabilitation was ordered. Surgery was not recommended due to the incomplete tear of the teres minor. A therapeutic protocol consisting of pain free, isometric contractions in all ranges were initiated. Concentric contractions and greater ranges of motion were gradually implemented, as tolerated. Treatments goals included maintenance of arthrokinematic and osteokinematic motions, support of glenohumeral stability, maintenance of scapular kinesis, and progressive strengthening exercises for the shoulder complex.

Comparative Outcome: Only two weeks post injury, the patient returned pain free to limited practice, including application of an ace wrap spica to limit external rotation and abduction motions. Three weeks post injury, the athlete fully returned to full contact participation and reports no functional limitations as of this point. As these concurrent lesions are so rare, we could not locate prior evidence for relevant clinical outcomes.

Conclusion: Our team physician described the patient having a Buford Complex, a congenital absence of the labrum from the 1 to 3 o’clock position on the glenoid. Conservative shoulder protection and rehab was as suitable approach for addressing this pathology and returning our athlete to full contact football participation.

Clinical Bottom Line: A Buford Complex is a congenital absence of the labrum from the 1 to 3 o’clock position on the glenoid, and a thickened middle glenohumeral ligament. Present in 1.5% of individuals, this congenital abnormality compromises joint stability and induces high risk of structural damage given force magnitude and direction on the glenohumeral joint. Teres minor strains are very rare events regardless of mechanism. With traumatic forces, glenohumeral stability, and the integrity of the rotator cuff and glenoid labrum require careful screening and consideration.

Word Count: 580