

Course: MRI of Musculoskeletal Impingement Syndromes

Shoulder: Sources of Impingement

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Shoulder pain is a common problem and a frequent cause of shoulder pain is shoulder impingement. Impingement can be either extrinsic, where the impingement is extraarticular, or intrinsic, where the impingement is intraarticular. The most common cause of extraarticular impingement is primary subacromial impingement, where the rotator cuff and subacromial-subdeltoid bursa are impinged as they pass under the coracoacromial arch by pathology or anatomic variations in the acromioclavicular joint or coracoacromial arch. Subacromial impingement can lead to partial or full thickness supraspinatus tears as well as subacromial-subdeltoid bursitis. Subcoracoid impingement, where the subscapularis tendon is impinged as it passes through the coracohumeral interval is a less frequent cause of extraarticular impingement and can lead to tears of the subscapularis tendon, subcoracoid bursitis and bony changes in the lesser tuberosity. Both primary subacromial impingement and subcoracoid impingement are more common in middle aged or elderly non-athletic individuals. Internal impingement, by contrast, is most frequent in young athletic individuals particularly those involved in overhead activities such as throwing. In internal impingement, soft tissues such as the rotator cuff become impinged between the humeral head and the glenoid. The different types of internal impingement are named by the location of the impingement and include posterosuperior, anterosuperior and anterior impingement.

This lecture will review the various forms of impingement, concentrating on the biomechanical causes, clinical features, and imaging findings seen in each type of impingement. Particular attention will be paid to internal impingement in the overhead thrower. The dead arm syndrome remains a significant problem in overhead throwers, particularly in baseball players. Despite a large amount of research, the exact etiology of the dead arm syndrome remains controversial with two main theories, anterior instability and posterior contracture, being proposed as the main pathology leading to the dead arm syndrome. A review of the main features of each theory will be discussed.

This lecture will benefit both those involved with taking care of patients with shoulder pain as well as those imaging the patient with shoulder pain. It will enable them to identify key imaging findings consistent with the various types of shoulder impingement and to differentiate between the different types of shoulder impingement to ensure correct treatment.

References:

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