

CLINICAL HISTORY: 49-year-old female with worsening shoulder pain. No history of previous shoulder surgery. Tendinosis versus a rim-vent tear was questioned on a previous MRI on 02/03/2014.

COMPARISON: Direct correlation is made with a non-contrast study of 02/03/2014.

TECHNIQUE: A direct MR arthrogram was performed utilizing direct injection of a dilute gadolinium saline solution into shoulder after which axial, sagittal, and coronal fat and water-weighted images include T1-weighted images on all three imaging planes.

FINDINGS: On the previous study, a small 40%, 4 x 6 mm undersurface tear of the anterior supraspinatus tendon insertion overlies enthesopathic changes at the greater tuberosity of the humerus and further undersurface fraying. Full-thickness tendon gap was observed on the non-contrast study.

The current study demonstrates a similar 4 x 6 mm small "rim-vent" type of tear at the anterior supraspinatus insertion, with slight contrast tracking into this relatively subtle tear as seen on image #8 of series 7 and image #8 of series 10. No full-thickness defect, tendon gap, retraction, or muscle atrophy. There is further supraspinatus and infraspinatus tendinosis and slight undersurface fraying of the rotator cuff.

Minor AC joint arthrosis slightly narrows the subacromial fat plane, and spurring along the undersurface of a type I-II mildly anterolaterally downsloping distal acromion process may contribute to outlet impingement in the appropriate clinical setting. The coracoacromial, coracohumeral, and coracoclavicular ligaments are intact.

The suprascapular notch, spinoglenoid notch, and quadrilateral space are normal. No rotator cuff or deltoid muscle atrophy.

There is mild mucoid degeneration at the biceps anchor without a clearly defined SLAP lesion. The subscapularis tendon, transverse humeral ligament and extra-articular biceps tendon are normal.

No labral tear, Bankart or Hill-Sachs lesion. While there is no marked thickening of the axillary pouch/joint capsule, extravasation of contrast from within the glenohumeral joint into the anterior subcutaneous tissue and deep to the subscapularis muscle along the anterior board of the scapula could be associated with adhesive capsulitis.

IMPRESSION (MRI OF THE LEFT SHOULDER WITH DIRECT MR ARTHROGRAPHY):

1. **Consistent with the non-contrast MRI is an approximately 5-6 mm in greatest diameter estimated low-grade partial undersurface and interstitial tear at the mid supraspinatus tendon insertion with very minimal contrast tracking into the undersurface of this tear. No large or full-thickness tear, tendon gap, retraction, or rotator cuff muscle atrophy. Since this small tear overlies enthesopathic cortical erosions and pitting in the greater tuberosity of the humerus, small "rim-vent" type of tear is well within the differential diagnosis.** There is further supraspinatus and infraspinatus tendinosis.
2. AC joint arthrosis mildly narrows the subacromial fat plane. Small enthesophyte along the undersurface of an anterolaterally downsloping type I-II distal acromion process could potentially contribute to low-grade outlet impingement.

3. No tearing of the long biceps tendon, biceps anchor, or glenoid labrum.
4. No loose body.
5. Some tracking of contrast deep to the subscapularis muscle relatively, smaller capacity of the glenohumeral joint could potentially be associated with adhesive capsulitis in the appropriate clinical setting. No marked thickening of the axillary joint capsule, however.