

## Shoulder—The Labrum

The labrum is a fibro-cartilagenous structure forming a rim around the glenoid margin. It increases its depth and gives stability to the gleno-humeral joint. The biceps tendon and capsular ligaments are attached to the labrum. The labrum is best seen on MRI arthrography. It appears as a dark structure on all pulse sequences (Fig. 1). Increased signal in the labrum or discontinuity with respect to the glenoid fossa suggest labral injury.

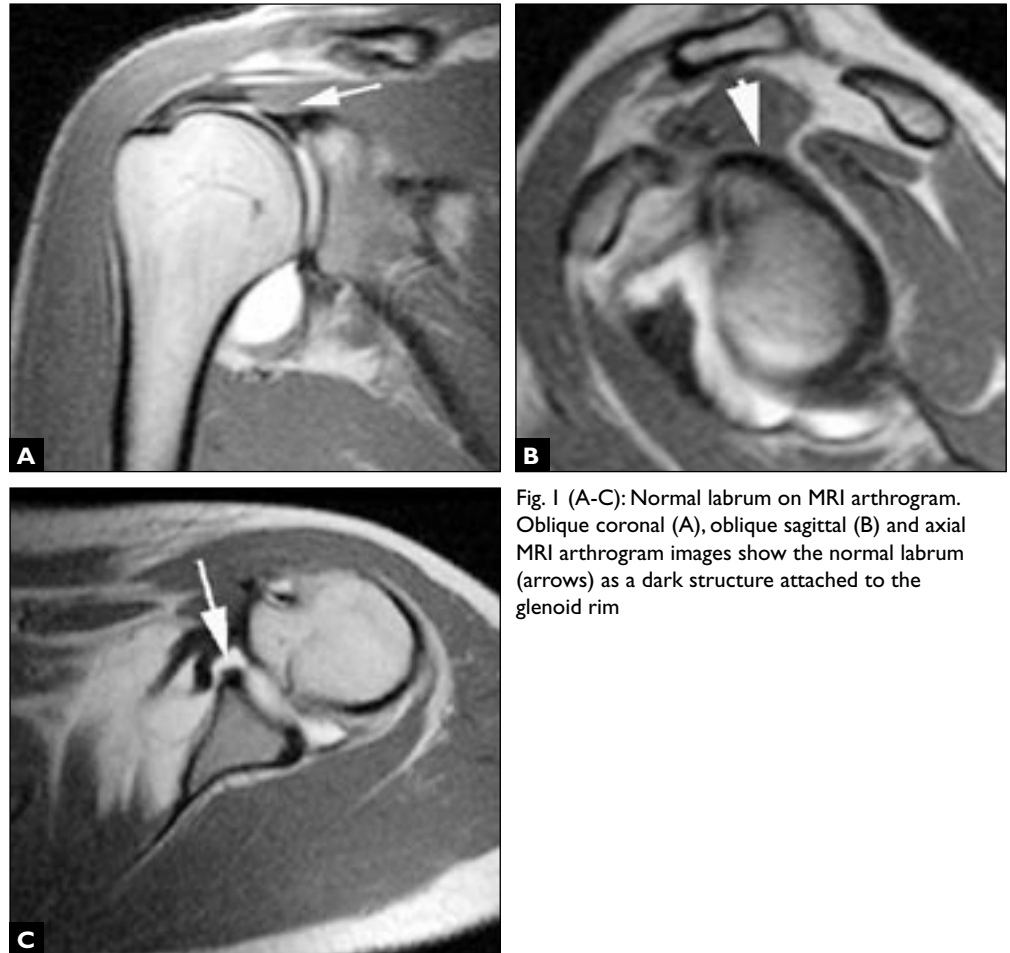


Fig. 1 (A-C): Normal labrum on MRI arthrogram. Oblique coronal (A), oblique sagittal (B) and axial MRI arthrogram images show the normal labrum (arrows) as a dark structure attached to the glenoid rim

### Special points of interest:

- The labrum is an important structure for maintaining the stability of the shoulder joint, in conjunction with other capsular structures
- Labral and capsular injuries occur either in patients with recurrent anterior dislocation of the shoulder or following trauma, either repetitive or on an outstretched hand
- A Bankart lesion and a SLAP lesion are the common labral injuries
- MRI arthrography is the gold standard for the non-invasive evaluation of all labral and capsular pathologies

Labral injuries can occur in two basic clinical situations

1. **Instability** - the commonest cause is recurrent anterior dislocation of the shoulder. Instability however can be multi-directional as well.

The type of injury that occurs is usually an antero-inferior tear called a Bankart lesion (Fig. 2). There are many variants of the Bankart lesion including the ALPSA lesion (anterior labro-ligamentous periosteal sleeve avulsion) and the Perthe lesion. Other associated injuries include the GLAD (glenoid labral articular defect) lesion and the HAGL lesion (humeral avulsion of the gleno-humeral ligament).

2. **Pain during extremes of abduction and external rotation**, usually following repetitive stress or fall on an outstretched hand

The type of injury that occurs is called a SLAP lesion (Fig. 3). SLAP stands for superior labrum anterior and posterior. There are four common types described based on the type of tear and the involvement or not of the biceps-labral complex. However, some enthusiastic authors have described upto nine types as well.



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The best modality for diagnosing labral pathologies however is MRI arthrography (Figs. 1-3). When the joint space is distended with fluid, the fluid separates out the labral tear from the underlying articular cartilage and glenoid rim leading to exquisite depiction of the tear. A tiny amount of gadolinium is introduced into the joint during injection. This allows high-quality T1W images to be obtained. A plain MRI may miss upto 50% of labral pathologies, whereas MRI arthrography has a better than 90% accuracy rate for labral pathologies.

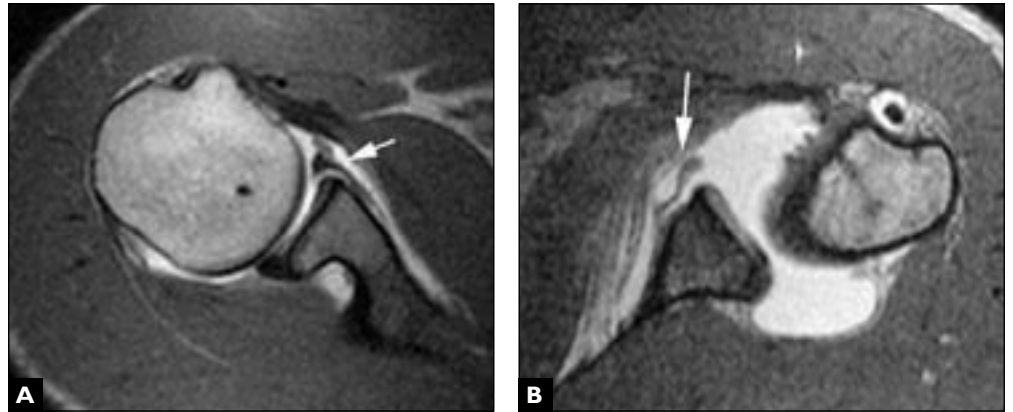


Fig. 2 (A,B). MRI arthrogram in two different patients, shows a classic Bankart lesion (arrow in A) and an ALPSA lesion (arrow in B).

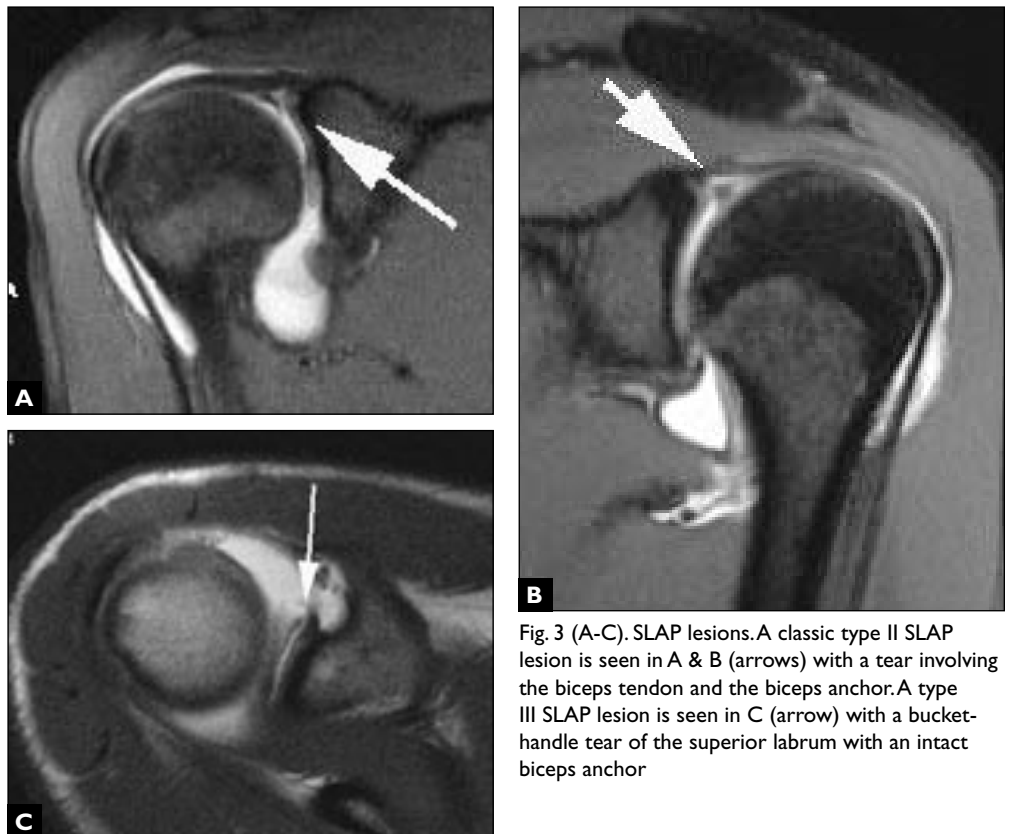


Fig. 3 (A-C). SLAP lesions. A classic type II SLAP lesion is seen in A & B (arrows) with a tear involving the biceps tendon and the biceps anchor. A type III SLAP lesion is seen in C (arrow) with a bucket-handle tear of the superior labrum with an intact biceps anchor

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### Inner Spaces

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