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## Anterior Shoulder Pain - a commonly missed diagnosis

Dr David Christie

Anterior shoulder pain is a common presentation. Many people will continue to experience persistent anterior joint pain despite numerous radiological investigations and physiotherapy.

Biceps tendon pathology is often missed in the early clinical presentation and not clearly identified upon examination or specific radiological investigations. It is a common cause of persistent painful symptoms following surgical treatment for rotator cuff tendon repairs.

Biceps tendon pathology consist of partial tear, tendonitis, medial subluxation [associated with Subscapularis tendon tear] and superior glenoid labrum tear (SLAP lesion)

### Superior Glenoid Labrum injury (SLAP tear)

**What is it:** SLAP stands for superior labrum anterior and posterior. The labrum is a rim of cartilage surrounding the glenoid margin that functions to increase the shoulder stability. The SLAP tear occurs at superior margin under the Biceps tendon insertion.

**How does it present:** Labral tears often present with anterior shoulder pain that may be very similar in presentation to a rotator cuff tendon injury. SLAP tears most often occur with repetitive overhead activities, such as with athletes in throwing sports, but can also occur with a fall on an outstretched arm or traction limb injury. The labrum tear occurs in the region of the proximal biceps tendon attachment causing referred pain down into the Biceps muscle. In addition to complaints of pain similar to rotator cuff injuries, these patients may complain about painful popping or catching in their shoulder.

**Common exam findings:** Many clinical tests for rotator cuff pathology may be positive in evaluation of a labral tear and these are often initially diagnosed as rotator cuff injuries. However, patients may also have a positive **O'Brien's test** and in the case of the SLAP tears, biceps pathology may be suspected with a positive **Speed's** or **Yergason's** clinical tests.

**Tests and treatment:** X-rays and Ultrasound scan are usually normal. A MRI arthrogram of the shoulder is essential for evaluation of the glenoid labrum. Labrum tears do not generally heal spontaneously, but physiotherapy can improve pain and function. Surgery may be needed to repair symptomatic labral tears.

### Proximal Biceps Tendon Injuries

Proximal biceps tendon injuries include: [1] tendinopathy [often overuse injury]; [2] subluxation of the tendon within the bicipital groove; and [3] partial rupture of the long head of the biceps tendon.

**How does it present:** In isolated biceps tendinopathy, patients may present with anterior shoulder pain. However, it is more commonly associated with other rotator cuff or labral injury presentations. Subluxation of the biceps tendon can present with a popping or catching sensation in the anterior shoulder that may occur with overhead or internal / external rotation activities and is often associated with pain. Again, this condition frequently associates with partial / complete Subscapularis tendon tears.

**Common exam findings:** Biceps tendinopathy is sometimes associated with rotator cuff tendon injuries and/or labral tears. If you palpate the proximal biceps tendon in the bicipital groove while the patient internally and externally rotates the humerus, you may detect greater tenderness on the affected side. For subluxation of the biceps tendon, appreciate the movement of the tendon in the groove using a similar motion. With a complete rupture of the long head of the biceps, you may see the "popeye" sign as your patient flexes the elbow against resistance and the muscle belly retracts.

**Tests and treatment:** X-rays may be considered to evaluate for bony pathology as clinically indicated. Evaluation of the biceps tendon for tendinopathy subluxation or tears could be done with ultrasound or MRI if needed.

Treatment of a tendinopathy or subluxation is often conservative. If clinically indicated, a MRI arthrogram may be needed to assess for associated rotator cuff tendon or labral pathology. Surgical correction of a recurrent Biceps subluxation can be considered in resistant cases. Proximal biceps tendon ruptures are often treated conservatively with a rehabilitation program, with only a mild residual strength deficit resulting. In younger patients, athletes, or those that need to do repetitive or heavy lifting for their job, a surgical repair [tenodesis] should be considered.



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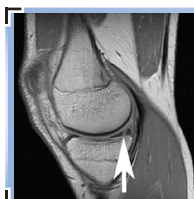
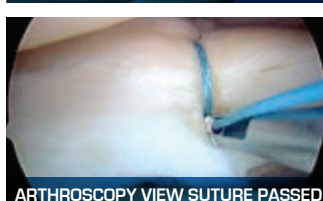
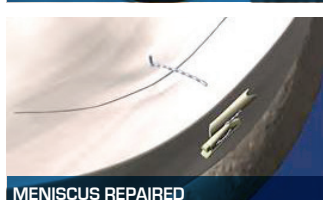
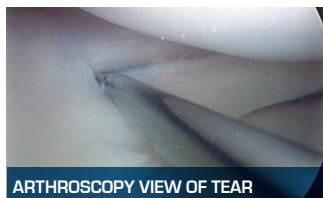
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## Can my torn cartilage be repaired?

Dr Angus Nicoll

### Arthroscopic Meniscus Repair: A minimally invasive method to repair torn knee cartilage

Most meniscus tears are treated with arthroscopic partial meniscectomy involving trimming back to stable cartilage and sealing the meniscus. Complex degenerate tears in older patients are usually not suitable for repair. However, many can be considered for repair which can essentially preserve the entire meniscus.

Arthroscopic meniscus repair is a day surgery procedure to repair torn knee cartilage. The torn meniscus is repaired by a variety of minimally invasive techniques and requires postoperative protection to allow healing. Physical therapy is useful to regain full function of the knee, which occurs on average 4-5 months after surgery.

### Who should consider arthroscopic meniscus repair?

Even though the recovery is longer for a meniscus repair than for a meniscectomy, any repairable meniscus should generally be repaired.

Meniscus repair is considered when;

1. the patient is healthy and likely to remain active
2. the tear is located in the periphery of the meniscus
3. the meniscus tissue is of good quality
4. the surgeon is experienced in meniscus repair

A repairable meniscus tear requires the blood supply only present in the peripheral third of the meniscus. This injury is most frequently a "bucket-handle" tear in younger patients, and may be associated with a rupture of the anterior cruciate ligament.

### Possible benefits of arthroscopic meniscus repair

The meniscus is an important structure for load transmission and shock absorption in the knee. The knee is subjected to up to 5 times body weight during activity and most of this force is transmitted through the meniscus. Loss of the meniscus increases the pressure on the articular cartilage, which leads to degenerative changes.

A successful meniscus repair preserves meniscus tissue and mitigates these changes. A large bucket handle tear treated with partial meniscectomy may sacrifice most the meniscus.

### Effectiveness

When performed by an experienced surgeon, meniscus repair is highly successful, with good results in approximately 85% of patients.

Factors associated with higher rates of meniscus healing include repair within 2 months, more peripheral tear location, and associated ACL reconstruction.

What is the advantage in the patients undergoing ACL reconstruction? A combination of recent injury, common peripheral tear pattern and the post-surgical environment of activated healing response.

### Urgency

Results are maximized by repairing meniscus tears within the first two months of injury. Walking on a knee that is 'locked' (does not fully straighten) may damage the meniscus further and make a tear unreparable. Squatting should be avoided prior to surgery, as that may displace a piece of meniscus into the joint and cause 'locking'.

### Technique

The instruments are approximately 5mm in diameter and are inserted through three or four 1cm incisions around the knee. The meniscus tear is identified and probed with a small metal hook. Healing is promoted at the edges of the tear using a small rasp or motorized shaver. The meniscus is then secured back in place with a meniscus repair devices incorporating a suture complexes as demonstrated in the photos.

### Post-Operative Management

Full weight-bearing in a brace may be permitted immediately after surgery. Ice, elevation and ankle pump exercises are emphasized in the first two days after operation.

### Physical therapy

Range of motion is generally started soon after surgery from 0-90 degrees, without any weight-bearing during motion. Motion is increased as tolerated at six weeks, but deep squats are avoided until 12 weeks. Low impact type activities such as swimming and exercise machines are encouraged at 12 weeks, with advancement to cutting and pivoting sports generally at 16 weeks. The assistance of a physical therapist is very helpful in achieving a rapid full recovery.

### Return to Sports

Depending on the rigors of the sport, the preoperative condition, associated injuries, and other individual factors, return to a chosen sport generally takes four to five months.

### Meniscal Repair Systems

Better results, in terms of efficacy and safety, have been achieved with the modern generation of meniscal repair devices. Recent advances include;

- Improved fixation strength
- Easier implant deployment
- Smaller insertion points
- Minimal disruption to the meniscus
- Built-in adjustable depth penetration

## Acute Knee Clinic

For an appointment call  
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