
Casing the Joint

Investigating Shoulder Pain

Michael McKee, MD, FRCSC; and Jeremy Hall, MD, FRCSC

Case 1: Shoulder instability

Ted, 32, is an accounts manager presenting with right shoulder pain. Five years ago, he suffered an anterior shoulder dislocation during a hockey game (Figure 1). He underwent an uneventful closed reduction under conscious sedation and was treated in a sling for three weeks, followed by physiotherapy.

Since his injury, Ted has had weakness and pain in his shoulder, particularly with overhead and throwing motions. He doesn't "trust his shoulder" during activities that require shoulder strength. He has not suffered any further dislocations.

Examination reveals that Ted's shoulders are symmetrical without any obvious muscular wasting. His shoulder's range of motion and his neurovascular examination is normal. Placing his arm in the abducted and externally rotated position while supine reproduces Ted's pain, while a posteriorly directed force at the proximal humerus in that position relieves his pain.

Radiographs of the shoulder are normal. Magnetic resonance images (MRI) of the shoulder show anterior/inferior labral and capsular detachment or a Bankart lesion (Figure 2).

Ted has typical anterior shoulder instability. His physical exam reveals positive anterior apprehension and relocation tests. Treatment of anterior shoulder instability is based on Bankart repair or the reattachment of the anterior capsule and labrum of the glenohumeral joint to the anterior glenoid neck or, followed by graduated range of motion and strengthening through physiotherapy.



Figure 1. Anteroposterior radiograph of an anterior shoulder dislocation.

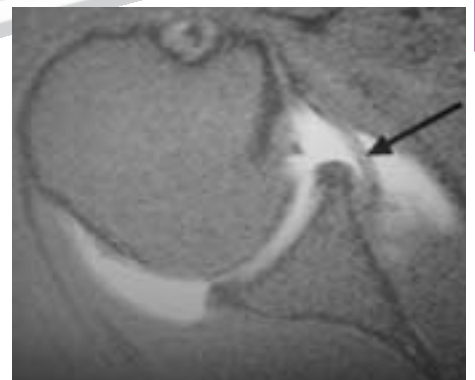


Figure 2. Magnetic resonance image showing Bankart lesion (arrow).

Case 2: Rotator cuff tendinitis

Jim, 45, is an electrician with right shoulder pain. Jim has never injured his shoulder in the past, but has noticed intermittent anterior shoulder pain (in the last several years), particularly with overhead activities and activities behind his back, such as reaching for his wallet.

On examination, Jim has mild wasting of the supraspinatus and infraspinatus muscles. His range of motion is full, but Jim has pain at approximately 80 degrees of forward elevation. Jim describes tenderness at the acromioclavicular joint, inferiorly at the acromion and laterally at the biceps tendon. Forced adduction and internal rotation of the shoulder intensifies his pain in this region.

Radiographs of the shoulder are normal, but for mild acromioclavicular arthritis with inferior osteophytes. Ultrasound evaluation and MRIs of the rotator cuff reveal tendinitis (Figure 3).

Rotator cuff tendinitis is often associated with biceps tendinitis (Figure 4). The pain is intermittent and Jim has a positive painful arc and a positive impingement sign. This is often precipitated by overhead work, as the greater tuberosity of the humerus repeatedly approximates the lateral aspect of the acromion, which compresses the rotator cuff. Non-operative treatment (activity modifications, anti-inflammatory medications, subacromial steroid injections and physiotherapy to strengthen the rotator cuff) is often initially successful. Should this fail, surgical decompression of the tendons of the rotator cuff, either arthroscopically or open, may provide pain relief.

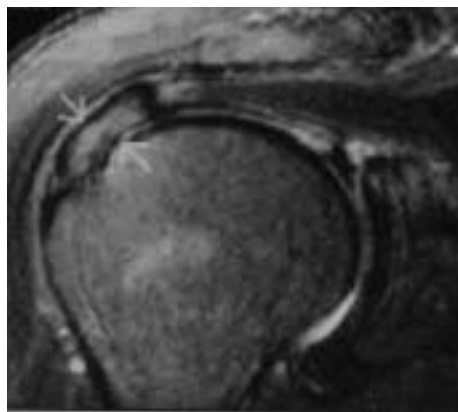


Figure 3. Magnetic resonance image of the shoulder reveals supraspinatus tendinitis (arrow).

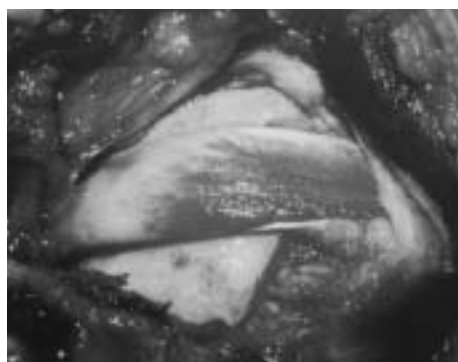


Figure 4. Clinical photograph of biceps tendinitis.¹

Dr. McKee is an Associate Professor, University of Toronto, and Associate Orthopedic Surgeon, St. Michael's Hospital, Toronto, Ontario.

Dr. Hall is an Associate Professor, University of Toronto, and Associate Orthopedic Surgeon, St. Michael's Hospital, Toronto, Ontario.


Case 3: Glenohumeral arthritis

Brian, 65, is a retired construction worker with right shoulder pain. His pain has progressed during the last 10 years. He doesn't recall any specific injury to his shoulder, but now has pain every day, worsening at the end of a busy day. On occasion, he has pain at night.

On examination, Brian has obvious atrophy of the right shoulder deltoid. He describes tenderness anteriorly to deep palpation. His right shoulder's range of motion is limited to 120 degrees of forward elevation, 20 degrees of external rotation and internal rotation to the buttock. He has obvious crepitation of the glenohumeral joint on these movements. Rotator cuff testing reveals no evidence of a rotator cuff tear.

Radiographs of the shoulder show a complete loss of glenohumeral joint space and periarticular osteophytes (Figure 5).

Brian has tried anti-inflammatory medications and cortisone injections without improvement in his pain.

Brian has primary osteoarthritis of the shoulder. Conservative management consists mainly of anti-inflammatory medications and activity modification. Surgical treatment is centred around joint replacement for pain relief. Options include partial or total shoulder replacement, depending on bone defects, and soft tissue stabilizers of the shoulder. Given his intact rotator cuff, Brian is a good candidate for total shoulder arthroplasty (Figure 6). 

References

1. Richards RR: *Soft Tissue Reconstruction in the Upper Extremity*. Churchill Livingstone, New York, 1995. pp. 1-314.



Figure 5. Anteroposterior radiograph of osteoarthritis of the shoulder.



Figure 6. Postoperative anteroposterior radiograph of total shoulder arthroplasty.