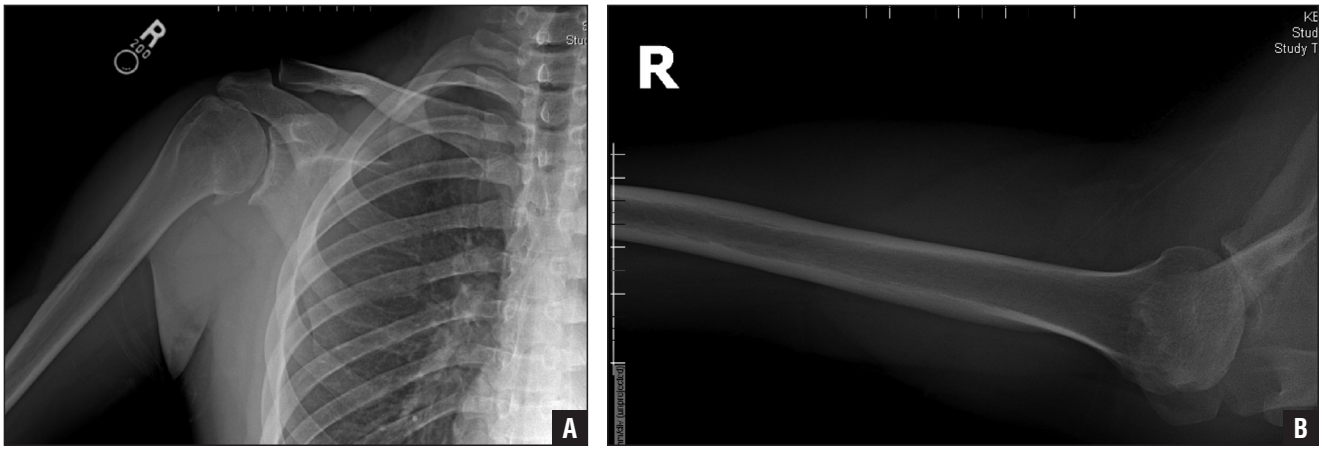
Section Editor: John D. Kelly IV, MD

Each month, a panel of key opinion leaders in the field of orthopedics will discuss how they would manage and treat a difficult case presentation.

Bankart Repair

A 20-year-old man who recently underwent arthroscopic Bankart repair presents with increasing right shoulder pain. Anteroposterior (A) and axillary (B) radiographs are presented. What would you do?



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Brian J. Cole, MD, MBA, is from Rush University Medical Center, Chicago, Illinois.

Felix Savioe, MD, is from the XXX.

Stephen S. Burkhart, MD: This is a challenging problem. A 20-year-old presents with degenerative arthritis of the shoulder secondary to a prominent metal suture anchor following arthroscopic Bankart repair. It appears that the offending anchor has already been removed.

In a young, active patient, I try to delay arthroplasty for as long as possible. In such cases, I have used an arthroscopic approach that has 3 parts. First, I perform arthroscopic removal of anchors. If this leaves bone defects on the glenoid face, I bone graft them arthroscopically with allograft bone chips using osteoarticular transfer (OATS) harvester tubes (Arthrex, Inc, Naples, Florida). If these defects are not grafted, surface discontinuities will cause abrupt changes in stiffness of the glenoid, which can accelerate the rate of degeneration.

Second, if the shoulder is stiff, as it usually is, I perform arthroscopic capsular release to regain as much range of motion as possible. Third, I perform arthroscopic biologic resurfacing with an acellular dermal allograft. I secure the graft to the labrum with sutures (if the labrum is prominent and robust) or with suture anchors (if there is not a robust labrum).

Although results vary with this approach, I have found that most patients improve after this procedure, and some patients dramatically improve.

Brian Cole, MD, MBA: The presumptive diagnosis is chondrolysis. The only other piece of information is the ra-

diographs, which demonstrate an inferomedial humeral head osteophyte, mild joint space narrowing and evidence of some subchondral sclerosis, and cystic change on the glenoid. Some cortical irregularities are seen around the circumference of the humeral head. The radiographic findings largely underscore what is likely to be significant, if not complete, articular cartilage loss when visualized arthroscopically.

The other terminology that can be used to define this case is anchor arthropathy. Interestingly, it can occur with both bioabsorbable and metallic anchors. In addition, the anchor may initially be placed at or below the subchondral plate and over time, through progressive erosive change, become prominent. The pathology that ensues is a progression from localized chondral wear (most likely where the anchor meets the articular surface), with disease advance due to the ongoing inflammatory catabolic processes that accompany osteoarthritis. It is unclear why many of these patients tend to present late with such advanced disease. After the mechanical insult occurs, the disease is rarely identified when the articular cartilage lesion is relatively small and localized.

My treatment remains conservative at first. No benefit exists for early prophylactic treatment. Rather, I would educate the patient that early treatment should only be for now and not to prevent disease progression.

Assuming that the pain and associated function loss are unacceptable and that nonoperative measures have been exhausted (eg, intra-articular corticosteroid injections, off-label use of hyaluronic acid, oral nonsteroidal anti-inflammatory drugs [NSAIDs], and physical therapy), then my first line of treatment is arthroscopy, thermal and mechanical synovectomy, global capsular release, glenohumeral manipulation, chondroplasty of loose articular cartilage, and possibly biceps tenotomy or tenodesis. Patients are told that this might provide some symptomatic relief and will provide an opportunity to take inventory of the existing damage to plan for future reconstructive efforts. Postoperatively, patients are prescribed physical therapy 5 days per week for 2 weeks, and then 2 to 3 days per week thereafter for approximately 3 weeks or until they are independent with therapeutic exercise.

Should this initial attempt fail, I would offer a variety of minimally invasive to more invasive options based on the severity of chondral damage. Patients are educated that future treatment options are not likely to provide the off switch for their symptoms, but rather a rheostat that down regulates their pain. My treatment algorithm includes arthroscopic placement of soft tissue interposition with or without abrasion arthroplasty and glenoid microfracture, microfracture of localized defects (this might be performed at the initial arthroscopy), biologic humeral head or glenoid replacement (now being performed arthroscopically) with fresh osteochondral allograft transplantation, and open soft tissue interposition and reaming with microfracture of the glenoid. If pain patterns are severe and patients desire an operation that is as close to "one and done" as possible, I will perform total shoulder arthroplasty even in young patients because to date this is still likely to provide the greatest clinical improvement.

Felix Savoie, MD: The patient has a difficult problem. He has had excellent care but has unfortunately developed early arthritis either from the injury, the surgery, or both. Early treatment should center on standard and advanced nonoperative management. I would initially manage this patient with selected injections of preservative-free steroids, oral NSAIDs, oral glucosamine/chondroitin, and physical therapy concentrating on distraction stretching and scapular rehabilitation. If this is ineffective, I would progress to an ultrasonography-guided injection of hyaluronic acid preparation while the patient continued a home-based therapy program.

The indication for surgery is a failure of the above treatment. Although the eventual definitive surgery will be total shoulder arthroplasty, the patient is currently too young to move to that particular surgery. My initial surgical management would include a complete debridement of the old anchors and sutures, capsular release, and removal of capsular adhesions, and then I would perform resurfacing of the glenoid with a biologic patch. I would hope that this resurfacing would last 5 to 10 years, and I would follow this with a humeral resurfacing with the hope that this second surgery would buy another 10 years. I would delay total shoulder arthroplasty until age 60 years, if possible.

Dr Burkhart is a consultant for and receives inventor's royalties from ,Arthrex, Inc, Naples, Florida. Drs Cole and Savioe have no relevant financial information to disclose.

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doi: 10.3928/01477447-20120123-38