



Is There a Role for Arthroscopy in the Treatment of Glenohumeral Arthritis?

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This issue of *The American Journal of Orthopedics* focuses on the treatment of shoulder and elbow pathology in 2014. Treatment of shoulder arthritis in young or high-demand patients remains a significant challenge. Total shoulder arthroplasty (TSA) for glenohumeral arthritis can provide excellent pain relief and improved function in elderly, lower demand patients. In younger or higher demand patients, the long-term outcomes are less favorable—failure rates are higher, and revision surgery outcomes are unpredictable. Sperling and colleagues¹ reported a survival rate of only 61% for TSA in patients younger than 50 at 10-year follow-up. In addition, postarthroplasty activity restrictions may be unacceptable for these younger, active patients. Concerns about poor shoulder arthroplasty durability and patient expectations of high activity have led to considerations for nonarthroplastic surgical options for shoulder arthritis in this patient population.

Some consider hemiarthroplasty an appropriate treatment option for shoulder arthritis in young patients and in patients who are too active for TSA, as hemiarthroplasty does not involve implantation of a glenoid component. However, compared with TSA, hemiarthroplasty is generally associated with inferior outcomes. Furthermore, when hemiarthroplasty fails and TSA revision becomes necessary, the outcomes of this revision are often inferior to those of primary TSA in the same population. For these reasons, hemiarthroplasty is considered a less optimal option for primary shoulder arthritis.

Biological resurfacing of the glenoid once was an exciting treatment alternative to TSA. Biological resurfacing includes interposition of soft tissue, whether fascia lata, Achilles tendon, or lateral meniscus allograft, onto the native glenoid with a hemiarthroplasty of the humerus. Initial short-term outcomes of biological resurfacing were encouraging, but midterm outcomes were unsatisfactory,

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and attempts to reproduce initial published results were unsuccessful. Biological resurfacing has a very limited role now and is largely reserved for patients with localized humeral head articular cartilage loss with minimal involvement of the glenoid. In general, the glenoid remains the most significant treatment challenge in this group, and, other than for “ream and run” procedures, most biological solutions for the glenoid are seldom used because of technical difficulty, surgical morbidity, and overall high failure rates.

Arthroscopic treatment of shoulder arthritis has emerged as an alternative to shoulder arthroplasty. Originally reported in 1982, initial attempts consisted mostly of arthroscopic joint lavage and loose body removal.² More recently, arthroscopic procedures for the treatment of shoulder arthritis have been expanded to include extensive joint debridement with synovectomy and circumferential capsular release, chondroplasty, osteophyte excision, and treatment of associated pathology, such as biceps tendinopathy, subacromial bursitis, acromioclavicular arthrosis, and even neurolysis of the axillary nerve.

Published results of shoulder arthroscopy for arthritis are encouraging. In a recent systematic literature review, Namdari and colleagues³ found a clear trend of significant pain relief and improved function after shoulder arthroscopy for arthritis, despite lack of high-level evidence. Millett and colleagues⁴ reported 85% survivorship at 2-year follow-up for 30 shoulders (23 men, 6 women; mean age, 52 years). Overall, patients reported significant pain relief with daily activities, athletic or work activity, and ability to rest comfortably. Similarly, Van Thiel and colleagues⁵ reported excellent pain relief and improved validated shoulder and elbow scores at 27-month follow-up. In both studies, patients with severe joint-space narrowing (<2 mm on radiographs) or severe arthritic deformity had inferior outcomes, but severity of arthroscopic grade of arthritis was not prognostic of clinical outcomes. Chondroplasty and osteophyte excision were shown to be helpful in reestablishing range-of-motion (ROM) and providing pain relief, but larger osteophytes associated with worse glenohumeral arthritis had poorer outcomes. In general, it should be assumed that, if the humeral head shape is preserved, if glenoid wear is concentric, and if the joint space

is visible on radiographs, then the patient is likely to have improved pain and function with arthroscopic treatment.

Properly addressing associated shoulder pain generators at time of arthroscopic surgery is important. Patients with significant arthritic stiffness can have prolonged improvement in ROM and function after arthroscopic debridement and circumferential capsular release. Patients with symptoms of biceps tendinopathy should undergo biceps tenodesis or tenotomy. Acromioclavicular joint pain should receive a distal clavicle excision. Subacromial debridement should be performed for subacromial symptoms, while acromioplasty can be reserved for type III acromion morphology. With careful preoperative evaluation, the clinician should be able to identify all possible pain generators in the arthritic shoulder and address these concomitantly to optimize pain relief and improved function.

In summary, shoulder arthroscopy should be considered a surgical alternative to shoulder arthroplasty in young or high-demand patients with mild to moderate arthritis. Pathology most responsive to shoulder arthroscopy includes shoulder stiffness caused by capsular tightness, chondral lesion less than 2 cm,³ less severe arthritis with preserved humeral head shape, and properly addressed associated pathology, such as synovitis, biceps tendinopathy,

and subacromial bursitis or acromioclavicular arthrosis. Although high-level evidence is lacking, study trends show improved ROM and pain relief and overall high patient satisfaction at short to midterm follow-up. Ultimately, more data are needed to provide precise surgical indications and prognostic factors. Currently, however, it appears that shoulder arthroscopy can play an important role in the treatment of shoulder arthritis and can provide high satisfaction in appropriately selected patients.

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