Nonarthroplasty Options for the Athlete or Active Individual with Shoulder Osteoarthritis

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KEYWORDS

- Glenohumeral osteoarthritis • Shoulder osteoarthritis
- Nonarthroplasty management • Conservative management

KEY POINTS

- Young, active individuals with shoulder osteoarthritis pose a unique management challenge.
- Nonoperative modalities have been poorly studied and, therefore, recommendations for or against certain treatments are not well established.
- There is weak evidence for use of viscosupplementation in patients with glenohumeral osteoarthritis; however, specific evidence for its use in young, active individuals remains unknown.
- Arthroscopic debridement is a reasonable next-line treatment if antiinflammatory medications and therapy fail. It has good short-term results and minimal complications in patients with small, contained, unipolar lesions.
- Overall, young patients with small, contained unipolar lesions of the glenohumeral joint have good outcomes with microfracture (increased clinical outcome scores, increased range of motion, decreased pain scores) at short-term follow-up.

INTRODUCTION

Management of young, active patients with glenohumeral joint (GHJ) osteoarthritis (OA) can pose a significant clinical challenge. Nonoperative management should be attempted before consideration of other invasive options, with the goal to minimize pain, improve or maintain functionality, and minimize progression of the disease process. The success of nonoperative management should be based on a combination of

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the patient's severity of symptoms and expected functional capabilities instead of radiographic severity of GHJ OA because there is a wide variability between presenting symptoms and the severity of OA on radiographs.[1–3] Unlike other joints that develop OA, strong recommendations for a specific or guided conservative approach remain elusive for the shoulder in the general population.[1] The current American Academy of Orthopaedic Surgeons (AAOS) clinical practice guideline on the treatment of GHJ OA for the nonarthroplasty treatments, created in 2009 and reaffirmed in 2014, only provides weak recommendations for injectable viscosupplementation as a treatment modality, whereas there is inconclusive evidence to support the use of therapy, pharmacotherapy, injectable corticosteroids, arthroscopic procedures, or open debridement.[1] There is an overall lack of strong evidence for the use of nonarthroplasty treatments for GHJ OA compared with AAOS guidelines for nonarthroplasty treatments for knee OA, which strongly recommend use of nonsteroidal antiinflammatories (NSAIDs), low-impact rehabilitation, wellness activity, education, and weight loss while advocating against arthroscopic procedures, viscosupplementation, glucosamine, chondroitin, insoles, and acupuncture.

Furthermore, there are several factors that differentiate decision-making for younger, active patients, from older patients. Younger patients tend to have a more complex disease etiologic factors, such as posttraumatic arthritis, osteonecrosis, or rheumatoid arthritis, compared with primary etiologic factors, such as degenerative OA, which is more common in older populations, which may affect treatment decision-making.[4] As such, nonoperative modalities continue to be an attractive option as a primary low-risk approach before consideration of arthroplasty-related options. Therefore, this article focuses on the contemporary literature surrounding nonarthroplasty treatment modalities for GHJ OA.

NONOPERATIVE MANAGEMENT OF YOUNG PATIENTS WITH OSTEOARTHRITIS OF THE GLENOHUMERAL JOINT

Initial management should consist of a trial of rest, activity modification, patient education, and physical therapy for strengthening and rehabilitation because these modalities are inexpensive, pose minimal risk, and may mitigate patient symptoms.[5] These modalities may not alter the ultimate progression and course of the disease; however, the goal is to prolong the time until more invasive options, such as surgical arthroscopy procedures or shoulder arthroplasty, become necessary. Physical therapy programs have proven to be an effective treatment of other disease processes and, although the consensus remains inconclusive due to a paucity of data, have begun to demonstrate promise for its application in GHJ OA in younger patients. Therapist-directed exercise regimens, manual therapy, manipulations, and a combination of manual therapy and tailored exercise regimens have been shown to decrease pain and improve function for other shoulder disorders.[6–11]

Furthermore, recent studies have demonstrated that individualized home therapy with patient adherence to rehabilitation protocols have been effective in treating the pain associated with glenohumeral arthritis.[12] Initial patient supervision by a therapist is encouraged to guide appropriate performance of such exercises. In addition to supervision, the therapist may use a series of modalities (eg, surface heat, therapeutic ultrasound, low-level laser therapy, electrotherapy) to assist in pain control and relaxation surrounding therapy exercises.[2] Exercise programs use a series of advancing joint mobilization techniques, progressing the patient from passive movements and stretching exercises to strengthening and resistance training after mobility and joint