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ORIGINAL ARTICLE

Arthroscopic surgical treatment of medial epicondylitis

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Background: The study purpose was to evaluate the outcomes of patients who received arthroscopic surgical treatment for medial epicondylitis refractory to conservative treatment.
Methods: This was a retrospective study of 7 patients who underwent arthroscopic surgical débridement of the common flexor tendon for treatment of medial epicondylitis refractory to conservative treatment. The patients were assessed using the Disabilities of the Arm, Shoulder and Hand score; visual analog scale for pain; and Short Form 36 Health Survey. The mean age at the time of surgery was 50 years (range, 36-67 years). The mean duration of symptoms before surgery was approximately 2 years (range, 8 months to 4 years). The mean follow-up duration was 17 months (range, 6-48 months).
Results: The average postoperative scores were 17 points on the Disabilities of the Arm, Shoulder and Hand outcome measure; 2 points on the visual analog scale at rest for 6 subjects (86%) with slight pain and 1 (14%) with moderate pain; and 78 on the Short Form 36 Health Survey. No significant complications were observed when the procedure was performed via arthroscopy.
Conclusion: Arthroscopic surgical treatment for medial epicondylitis of the elbow exhibits good outcomes and is safe and effective.
Level of evidence: Level IV; Case Series; Treatment Study

Keywords: Elbow; medial epicondylitis; arthroscopic surgery; common flexor tendon; functional outcomes; repetitive strain injury

Medial epicondylitis, also referred to as "golfer's elbow," was first described by Henry J. Morris in 1882.[9] The pathology involves microtraumas and degeneration of the common flexor tendon and typically occurs in the fourth to sixth decade of life. It affects men and women at equal rates.[5] Medial epicondylitis is characterized by pain at the base of the common flexor tendon and is observed in patients involved in sports activities that produce valgus stress and repetitive flexion and pronation, such as golf, baseball, tennis, fencing, and swimming.[8] This condition is also observed as a result of labor-intensive activities that require movements of the hand, wrist, and forearm.[11] Patients often present with an insidious onset of medial elbow pain, mostly in conjunction with activities that require repetitive forearm pronation and/or wrist flexion. The flexor carpi radialis and the pronator are commonly involved at the insertion of the medial epicondyle. Ulnar neuropathy may be associated in approximately 50% of cases.[4] Surgical intervention is indicated for persistent pain after at least 3 months of conservative treatment and sooner for elite

Institutional review board or ethical committee approval was not required for this retrospective study.

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athletes involved in throwing sports.[13] Conservative treatment is typically effective and should include instructions to the patient to modify the use of the upper limb in terms of posture, frequency, and intensity of use; anti-inflammatory drug use (ie, nonsteroidal anti-inflammatory drugs); and physical therapy for stretching, strengthening, and infiltration. One prospective, randomized, double-blinded study analyzed the short- and long-term effects of corticosteroid infiltration for the treatment of medial epicondylitis. Compared with the group that did not receive steroids, similar results were noted for pain at 3 months and 1 year.[7] Laser therapy and shock-wave therapy were not shown to be effective.[15] When conservative treatment fails, however, surgical intervention is needed and typically involves open surgery. A cadaveric study showed that arthroscopic débridement of the medial epicondyle may be performed with a low potential for injury to the medial collateral ligament or the ulnar nerve.[14] However, limited reports have described the results of this type of treatment. Arthroscopic surgical treatment has advantages over open surgery, including reduced dissection (which shortens recovery time) and the ability to assess the joint for concomitant intra-articular pathology.[6]

Materials and methods

This was a retrospective study of patients who received arthroscopic surgical treatment for medial epicondylitis and either exhibited no improvement or exhibited improvement that was unsatisfactory following conservative treatment. The examined treatment consisted of 6 months of physical therapy and the use of pain relievers.

Patients who had medial epicondylitis with chondral injuries or incipient arthritis, as well as those with concurrent ulnar nerve neuropathy requiring transposition of the nerve, were excluded from the study. All patients' Disabilities of the Arm, Shoulder and Hand (DASH); visual analog scale (VAS); and Short Form 36 Health Survey (SF-36) scores were calculated during the preoperative and postoperative follow-up periods.

Surgical technique

The surgical technique used in this study was based on previous studies that described the use of arthroscopic surgery for this condition.[14] The patient was placed under general anesthesia and a plexus block and was positioned in the lateral decubitus position on the side opposite the operative side. An elbow support attached to the operating table was positioned under the arm, allowing the elbow to move from 90° of flexion to full extension. A pneumatic tourniquet was placed at the root of the arm. Surgical landmarks were drawn on the elbow, including the olecranon, lateral epicondyle, medial epicondyle, radius notch, and ulnar nerve.

The elbow joint was infiltrated with 40 mL of saline solution that was injected at the puncture site of the elbow in the middle of the triangle formed by the lateral epicondyle, radius notch, and olecranon to facilitate entry of the arthroscope into the intra-articular space. The use of the anterosuperomedial and anterosuperolateral portals was preferred. Initially, the trocar and the arthroscope were placed in the anterosuperomedial portal. A second portal was made using a needle under intra-articular visualization to optimize its positioning. A complete analysis of the elbow joint was performed, including the articular and capsular surfaces (Fig. 1). Next, visualization was changed to the anterosuperolateral portal, and the anterosuperomedial portal was used to perform the procedure. A partial capsulotomy was performed in the medial region to enable the visualization of the origin of the common flexor tendon.

By use of a radiofrequency device, the common flexor tendon was detached from the medial epicondyle, and care was taken to avoid injury to the ulnar collateral ligament. The "pathologic area" was considered the region where the deep fibers of the flexor-pronator (pronator teres and flexor tendons of the radial carpal region) were inserted into the medial epicondyle, proximally to the ulnar collateral ligament complex. Next, the disengaged tendon was débrided in the region of the medial epicondyle to cause bleeding and cell migration to the region. An accessory medial portal was used for medial visualization of the epicondyle (Fig. 2). The origin of the common flexor tendon was not reinserted.

Postoperative period

In the immediate postoperative period, all patients were given a sling to use for 3-5 days for comfort. Patients were allowed different movements depending on the pain, avoiding effort only with the limb in question. Physical therapy to regain range of motion was initiated after 2 weeks, and isometric strengthening was initiated after the full range of motion was reached, which was typically 4 weeks after the procedure. Resistance exercises were initiated at 4-6 weeks after

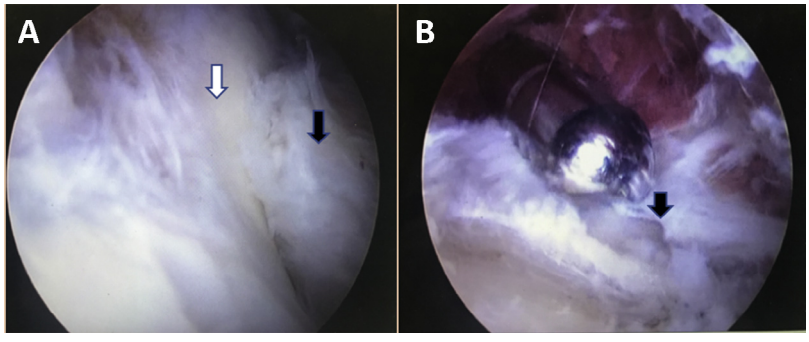

Figure 1 Lateral views of the elbow showing the trochlea (*black arrow*) and coronoid (*white arrow*) (**A**) and showing the medial epicondyle after capsulotomy (*arrow*) (**B**).