



Arthroscopic fenestration of the distal humerus : A viable option for painful elbow impingement in sportsmen

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Open ulnohumeral arthroplasty, also known as the **Outerbridge-Kashiwaghi procedure**, is performed in elbow arthritis to relieve pain and improve the range of motion. A similar technique of distal humeral fenestration is applied in elbow arthroscopy to achieve pain relief in degenerative elbow arthritis. We report a possible new indication in young sportsmen with recurrent posterior elbow impingement. A professional javelin thrower and a basketball player with recurrent loose bodies, posterior impingement and a minimal extension lack were free of complaints and resumed all sports activities within 6 weeks after an arthroscopic fenestration of the distal humerus. Their elbow function remained perfect within a 2 year follow-up period. We suggest that arthroscopic ulnohumeral arthroplasty is a viable option in sportsmen with recurrent loose bodies and elbow locking due to ongoing elbow arthritis.

Keywords : ulnohumeral arthroplasty ; Outerbridge-Kashiwaghi ; elbow arthritis ; arthroscopy.

INTRODUCTION

Kashiwaghi first introduced the open ulnohumeral arthroplasty in elbow arthritis (1,5). Fenestration of the olecranon fossa not only improved a posterior approach by opening the anterior compartment of the elbow, the technique also increases elbow mobility by allowing the coronoid and olecranon tip to enter the fossa freely. Arthroscopic techniques have enhanced debridement of elbow arthritis in all

compartments. However, even in elbow arthroscopy, ulnohumeral arthroplasty appears to add the advantage of improving pain complaints and reduce locking, possibly due to a decompressing effect (2,4). We suggest a new indication for arthroscopic fenestration of the distal humerus in young sportsmen with posterior elbow impingement and recurrent locking due to loose bodies.

SURGICAL TECHNIQUE

The patient is installed in lateral decubitus, with the arm on a MacIntosh support and the hand hanging freely. A medial portal is used to inspect and debride the anterior joint space through the anterolateral working portal. Then, using mid-posterior and posterolateral portals, the distal humerus is perforated in the middle of the olecranon fossa in a perpendicular way using an endoscopic 4.0 mm round burr and a punch forceps to enlarge the hole to a 10 mm size. Portals are left open and a compressive bandage is left for 5 days, after which full range of

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Fig. 1. — (a) Case 1 Preoperative elbow radiographs and CT-scan arthrography revealed posterior impingement due to minimal olecranon osteophytes. (b) Postoperative radiographs show the distal humeral fenestration with tapering of the lateral column, but films taken 30 months later show evidence of bony remodeling (c).

motion is commenced. Resuming sports is allowed after 6 weeks at the earliest, to lower fracture risk.

ILLUSTRATIVE CASES

Case 1

A 21-year-old right-handed male javelin thrower presented with recurrent posterior locking of his right elbow 4 months after an arthroscopic debridement. Although range of elbow motion and stability were normal, he had significant pain in full extension, which was lacking the last 5°. Minimal osteophytes on the olecranon tip were seen on CT-scan with arthrography (fig 1a). After arthroscopic fenestration of the distal humerus, full range of motion exercises were started within 5 days and he successfully resumed javelin throwing after 6 weeks. Although immediate postoperative radiographs revealed a relatively large humeral fenestration with a tapering of the lateral column, the bony cortex had completely normalized in the lateral column after 30 months follow-up (fig 1b, c).

Case 2

A 23-year-old right-handed male basket ball player presented with recurrent locking and painful

extension of his right elbow when dodging the ball, one year after arthroscopic debridement. Radiological examination revealed loose bodies in the posterior olecranon fossa. Arthroscopic fenestration of the distal humerus with removal of all loose bodies normalized his elbow function without pain within 6 weeks after the operation. Two years later, the patient is still satisfied with the result and has no complaints about his elbow function.

DISCUSSION

Although originally an open procedure for elbow debridement, arthroscopic ulnohumeral arthroplasty has proven its effectiveness mostly for pain relief in degenerative elbow arthritis even in young patients (2,4,6).

In young sportsmen, the rapid recurrence of the complaints of locking after arthroscopic elbow debridement poses a surgical challenge. Good outcome of arthroscopic ulnohumeral debridement in painful locking elbows with symptoms for less than two years have been reported previously (3). In the presented cases, it was therefore decided to perform an arthroscopic fenestration of the humeral fossa. However, fracture risk may be increased in the post-operative period due to weakening of the columns and therefore sports activities were restricted for 6 weeks. Radiological images reveal considerable subsequent bony remodeling, and the fracture risk is then assumed to be negligible.

Obviously, longer follow-up is needed. However, several authors have shown good outcome for range of motion and pain relief in patients as young as 23 years even after 17 years follow-up (1,4,7).

The author suggests that arthroscopic fenestration of the distal humerus should be considered a viable option in recurrent elbow locking and ongoing arthritis, even in the young athlete.

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