

Debridement Arthroplasty

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Introduction

Primary Osteoarthritis of the elbow is an uncommon pathology occurring in less than 2% of the population. Early in the course of the disease, most cases are treated by nonsurgical means, including anti-inflammatory medication and activity modifications. Occasionally, some patients require removal loose bodies or debridement with removal of prominent osteophytes. This can be achieved by either arthrotomy or arthroscopy. For advanced primary osteoarthritis of the elbow, formal and more aggressive debridement procedures have been described. However, the literature contains little information on the results of long-term follow-up. The purpose of this study was to evaluate the outcome of the debridement arthroplasty using medial approach in thirty-six elbows of thirty-four patients with an average follow-up period of 120 months.

Patients and Methods

Between 1984 and 1997, 47 elbows of 45 consecutive patients with primary osteoarthritis of the elbow have had debridement arthroplasty, and thirty-six elbows of thirty-four patients have been followed up for at least two years. Thirty-three patients were men and one was woman. Their mean age was 48 years (13 to 83) at the time of operation. The dominant arm was involved in twenty-six, with bilateral involvement in one. Thirty had occupations or avocations involving repetitive use of arm.

Operative Technique

Through posteromedial approach, the flexor-pronator muscle origin was reflected from medial epicondyle and the joint was opened, preserving the anterior oblique bundle of the medial collateral ligament. Osteophytes were removed from the

coronoid process, coronoid fossa, and radius fossa. Dissection is carried posteriorly resecting posterior oblique bundle of the medial collateral ligament. Then the triceps is exposed and two parallel incisions were made along the triceps tendon. This approach allowed adequate resection of the osteophytes from the olecranon and olecranon fossa. If the gain of the elbow motion was not satisfactory after these procedures, debridement through an additional lateral approach was performed.

Results

All thirty-six elbows were available for evaluation at a mean of 120 months (range, 24 to 199 months) postoperatively.

The mean JOA elbow score was 82 points (range, 72 to 98 points) at the latest follow-up evaluation compared with 58 points (range, 52 to 85 points) preoperatively ($p < 0.0001$). Twenty-six of thirty-three patients who had been employed at the time of surgery returned to their previous work. Two patients changed their occupation (painter to driver, miner to driver) and three patients retired. Twenty-three of thirty-six patients responded that that they would have the procedure again; twelve were uncertain; only one disliked the procedure.

Pain

Preoperatively, twelve (33 %) of thirty-six elbows were moderately painful. At the latest follow-up evaluation, thirty-four (94%) were not painful or were only mildly painful, only two were moderately painful. The average preoperative pain score of 14.4 was improved to 27.1.

Range of Motion

The mean preoperative limitation of extension of 33 degrees (range, 5 to 70 degrees) was reduced to 26 degrees (range, 0 to 40 degrees) and the mean preoperative

flexion improved from 101 degrees (range, 65 to 135 degrees) to 117 degrees (range, 100 to 135 degrees). The mean gains in extension and flexion movement were 7 degrees (range, -20 to 25 degrees) and 16 degrees (range, -5 to 61 degrees), respectively. The total range of movement of the elbow improved from 68 degrees (range, 35 to 110 degrees) to 91 degrees (range, 59 to 130 degrees). Thus the mean arc of movement improved by 23 degrees (range, -10 to 55 degrees). At the latest follow-up examination, thirty-two elbows (88 %) had improved range of motion, two (5 %) had no change, and two (5 %) had a decreased range of motion.

Among selected twenty elbows with a follow-up duration over ten years, the limitation of extension of 22 degrees at one year after operation was aggravated to 26 degrees at the latest examination ($p=0.030$). In contrast, the arc of flexion of 117 degrees at one year after operation remained consistent at the latest examination.

Conclusions

The debridement arthroplasty using medial approach provided stable and reliable long-term results for relief of pain, gains in range of motion, and return to previous occupations. The gradual loss of extension was observed while the arc of flexion remained consistent.