Synovectomy and radial head excision in rheumatoid arthritis

11 patients followed for 14 years

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A radial head excision and partial synovectomy of the elbow through a lateral approach was performed in 24 patients suffering from rheumatoid arthritis. At follow-up examination of 11 patients (12 elbows) 14 years postoperatively, 10 patients were still satisfied with pain reduction and improved elbow motion. 2 elbows had been reoperated on. Radiographic destruction, assessed by the Larsen index, was, on average, 2.9 preoperatively and 3.8 at follow-up.

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In rheumatoid arthritis, one quarter of a hospital population will have severe disability from elbow arthritis (Porter et al. 1974). Swett (1923) was the first to report a successful elbow synovectomy and Smith-Petersen et al. (1943) added radial head excision. We present our long-term results of this combined procedure.

Patients and methods

During 1977–1982 we performed synovectomy and resection of the radial head on 29 elbows in 24 patients, all with multiple joint involvement from severe rheumatoid arthritis. The indication was pain, mainly located in the radial compartment of the joint. Locking of the elbow due to subluxation was a problem in 13 cases. All patients had radiographic grade 2 or more changes (Larsen 1974, Dale and Eek 1975) (Table 2).

A lateral approach was used, the radial head with collum was resected (in total 1–1.5 cm) and a synovectomy was done. Active flexion/extension and rotation exercises were started on the following day. All patients were discharged after 1 or 2 days. There were no complications.

At review in 1992, 13 patients had died without needing any further elbow surgery. 11 patients (12 elbows) were examined after a median of 14 (12–15) years. There were 10 women and 1 man, the median age at follow-up was 66 (44–80) years.

Results

At follow-up, 10 of the 11 patients were still pleased with the result and all of them would have agreed to have the same operation done today. 2 elbows had been reoperated, 1 synovectomy and 1 fascia lata interposition. The synovectomy was performed because of profuse synovitis after 9 years, the arthroplasty was performed because of painful motion starting 9 years after the primary procedure.

3 patients had no pain and 7 had less pain than before the operation. Pain was unchanged in 1 elbow only.

Table 1. Median (range) of motion (degrees) in 12 elbows at 14 years follow-up

	Preoperatively	Follow-up
Flexion	80 (0–135)	100 (95–140)
Rotation	115 (0–180)	140 (60–175)

Table 2. Radiographic appearance in 12 elbows at 14 years follow-up, graded according to Larsen (1974) and Dale and Eek (1975)

Grade	Preoperatively	Follow-up
0		
1		
2	4	1
3	5	5
4	3	1
5		5

Figure 1. Radiographic appearance in an elbow preoperatively (top) and at follow-up 13 years later (bottom).

The median range of both rotation and hinge motion was improved (Table 1). A range of motion from 40° to 130° or more in flexion was obtained in 10 elbows, which is sufficient for most activities of daily living (Morrey et al. 1974). Only 3 elbows had that range of movement before the operation. Preoperatively, 7 patients had frequent episodes of locking of the elbow. At follow-up, only 2 patients had experienced occasional locking. None of the patients experienced discomfort from instability and all elbows were clinically stable. Radiographic appearances had deteriorated 1 grade or more in 5 elbows (Table 2).

Discussion

When choosing the treatment in rheumatoid arthritis, it is important to consider the age and needs of the patient. In the elderly with limited requirements, a simple procedure that permits 10–15 years of functional improvement is a good choice. This view is supported by the fact that, from the operation to the follow-up, 13 out of 24 patients had died without requiring any further surgery.

In most series, patients are not selected according to the location of pain. We preferred to operate on patients who had pain from the radial compartment, which might explain why we have better long-term results than generally seen in the literature.

Tulp et al. (1989) and Ferlic et al. (1987) have presented a 6–10 year follow-up, and their results show only some deterioration with time. Summers et al. (1988) and Rymaszewski et al. (1984) have less encouraging results, with about 50 percent satisfactory results after 6 years.

Even the younger patients may benefit from the operation as a later interposition plasty or even an elbow prosthesis is still possible. From the studies of Rymaszewski et al. and Ferlic et al. we know that a silastic prosthesis for the radial head is of no benefit. The development of improved prosthetic devices and techniques (Rydholm 1989, Pritchard 1991, Morrey and Adams 1992) is promising, but in terms of mobility they are not superior to our procedure. However, synovectomy should not be performed in joints with severe radiographic destruction, in which arthroplasty may be the treatment of choice.

In conclusion, synovectomy with radial head excision used on strict indications is a simple and inex-

pensive procedure that seems to achieve the same goal as the more expensive arthroplasties, with few complications.

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