

SYNOVECTOMY OF THE ELBOW IN RHEUMATOID ARTHRITIS

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The results of 39 synovectomies of the elbow performed during the period 1976–1980 were evaluated, and the factors which may have influenced the success of synovectomy analysed. Synovectomy results were satisfactory in 27 of the cases. Success of synovectomy seems to be related to the operative approach used and not to the radiographic grade of destruction of the elbow or to the duration of the follow-up.

Key words: elbow; rheumatoid arthritis; synovectomy.

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In rheumatoid arthritis the elbow-joint is affected in 50–70% of patients. Despite this high rate of affection, surgery is relatively seldom used. However, synovectomy of the elbow is now generally accepted as a satisfactory procedure, especially for relief of pain (Wilkinson & Lowry 1965, Laine & Vaino 1969, Inglis et al. 1971, Peterson & Jones 1971, Wilson 1971, Marmor 1972, Wilson et al. 1973, Porter et al. 1974, Copeland & Taylor 1979, Gschwend 1981).

This paper describes our experience with 43 synovectomies of the elbow performed during the period 1976–1980. The results of synovectomy were evaluated and the factors which may have influenced the success of synovectomy were analysed.

PATIENTS AND METHODS

During the period 1976–1980, 43 synovectomies of the elbow were performed on 33 patients. A lateral approach was used in 33 of the 43 synovectomies, a bilateral approach in nine and an anterior approach in one.

Resection of the radial head was performed on 37 elbows. In seven elbows, a radial head silastic prosthesis

(Swanson) was inserted to improve elbow stability. In six elbows the ulnar nerve was transposed.

Complications

In one case there was temporary irritation of the ulnar nerve and two patients developed temporary paralysis of the posterior interosseous nerve.

Follow-up

Thirty-nine elbows were available for the follow-up study. Two patients with four synovectomies had died from causes unrelated to the operation.

The study concerns 31 patients, ranging in age from 39 to 78 years (mean age 62 years) at the time of surgical intervention. All but two suffered from definite or classical rheumatoid arthritis according to the ARA criteria. Twenty-two were seropositive. Two patients suffered from probable rheumatoid arthritis; in both instances synovial histology was compatible with rheumatoid arthritis. The duration of the disease varied from 1 to 35 years at the time of the elbow operation (mean age 17 years, SD 11.5 years). Ten patients were being treated with long-acting antirheumatic drugs (aurothioglucose, D-penicillamine or azathioprine), two were on corticosteroids and the other patients on non-steroidal anti-inflammatory drugs only. At the time of the operation, elbow complaints had existed for more than 4 years in 19 patients, 2–4 years in four, 1–2 years in five and less than 1 year in three patients.

The following criteria were assessed pre-operatively and at the time of review:

1. The radiological classification of Steinbrocker et al. (1949).
2. Synovitis, pain, movement and stability of the elbow.
3. Subjective assessment by the patient.

In overall assessment, the operation was considered satisfactory or unsatisfactory according to the clinical criteria used by Porter et al. (1974) and Copeland & Taylor (1979) (Table 1).

We added the criterion of synovitis (swelling and warmth), since this is also a reliable clinical criterion. We also studied the possible relationship between the success of synovectomy and the operative procedure, the duration of follow-up and the radiological classification.

RESULTS

The symptoms of synovitis had disappeared in 31 elbows. Pain had evidently decreased or disappeared in 27 and function also improved in 21 elbows. Stability had remained almost unchanged.

The radiological appearance of the elbow had deteriorated after synovectomy in nine cases, but there was no relationship between radiological deterioration and the clinical success of synovectomy.

Twenty-seven patients were either enthusiastic or satisfied with the results of synovectomy. According to the criteria shown in Table 1, 27 elbows were classified as satisfactory and 12 as unsatisfactory.

Table 1. Overall assessment of success of synovectomy

Satisfactory	Unsatisfactory
Patient enthusiastic or satisfied	Patient uncertain or dissatisfied
Synovitis disappeared or clearly better	Synovitis same or slightly better
Good relief of pain	Pain same, worse or slightly better
Movement the same or improved	Loss of movement
No symptomatic instability	Symptomatic instability

DISCUSSION

In our series, the percentages of success after a lateral and after a bilateral approach were almost equal (Table 2). This is in contrast with results reported by others (Copeland & Taylor 1979, Porter et al. 1974, Wilson 1971, 1973), who recommend a bilateral approach. We feel that it is possible to perform synovectomy of the elbow through a lateral incision in combination with resection of the radial head. A medial incision is necessary only to decompress or transpose the ulnar nerve or when the radial head is preserved.

In six elbows the radial head was left intact because it appeared normal (Table 3). Four cases were unsatisfactory, probably because only a lat-

Table 2. Success related to operative approach

	n	Satisfactory	Unsatisfactory
Lateral	30	21	9
Bilateral	8	6	2
Antero-medial	1	0	1
	39	27	12

Table 3. Success related to resection of radial head

	n	Satisfactory	Unsatisfactory
Resected	28	22	6
Prosthesis	5	3	2
Preserved	6	2	4
	39	27	12

Table 4. Success related to duration of follow-up

	n	Satisfactory	Unsatisfactory
3-5 years	12	9	3
2-3 years	5	3	2
1-2 years	12	9	3
1/2-1 year	10	6	4
	39	27	12

Table 5. Success related to radiological classification

Grade	n	Satisfactory	Unsatisfactory
0	0		
1	6	5	1
2	9	6	3
3	17	10	7
4	7	6	1
	39	27	12

eral approach was used. In the two satisfactory cases a lateral and medial incision was performed.

Whether a radial head prosthesis was inserted or not did not seem to influence the result of synovectomy in this series.

Success was not related to the duration of follow-up of between 6 months and 5 years after operation (Table 4). This observation is confirmed by other authors with follow-up for up to 10 years (Copeland & Taylor 1979, Porter et al. 1974).

In our series the results were not related to the radiological grade of destruction of the elbow (Table 5). A late synovectomy could be as successful as an early one. It is remarkable that in fact the grade IV elbows showed the highest rate of success. We therefore feel that pain and synovitis not responsive to conservative treatment are an indication for synovectomy. There are only a few indications for a primary elbow prosthesis: severe pain with gross symptomatic instability, ankylosis in extension or limitation of flexion to less than 90°.

The radiological appearance of the elbow-joint is of little value in determining whether synovectomy or a prosthesis is indicated. We inserted a primary elbow prosthesis, of the GSB type (Gschwend & Loehr 1980) in only four cases. Synovectomy is usually preferable and in the

event of failure a prosthesis can be resorted to secondarily. This was necessary in two patients but another four are waiting until we have a more physiological design, as described by Souter (1981).

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