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CALCIFIC TENDINITIS IN THE SHOULDER REGION

A Review of 43 Operated Shoulders

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Painful shoulder is a very common disorder. Tendinitis of the supraspinatus tendon is the most common lesion encountered. The reason for this is sometimes clearly demonstrated at operation; in the middle range of abduction the supraspinatus tendon impinges on the tip of the acromion. Furthermore, some patients experience pain only in the degree of abduction mentioned. It is generally agreed that most patients respond well to conservative treatment and the prognosis is good. Surgical treatment is reserved for those few patients in whom prolonged conservative treatment has failed. The purpose of this review is to state the results of operative treatment as carried out in this hospital.

MATERIAL AND METHODS

A total of 45 shoulders in 39 patients were operated upon for calcific tendinitis at Martina Hansens Hospital during the period 1960–1973. Only one shoulder without a traceable calcific deposit was operated upon and it is included here. Sufficient information has been obtained from 38 patients (43 shoulders); 8 shoulders have been examined personally and 35 by return of a questionnaire. The patients were asked to evaluate the results as excellent, good or poor. They were asked to recall the length of time which elapsed before they were free from pain and had regained normal movement of the shoulder.

Three types of operations have been employed; simple excision of the calcific deposit (Group A), excision of deposit combined with partial resection of the acromion (Group B) and partial resection of the acromion alone (Group C). In Group C the calcific deposit could not be easily identified and was therefore left *in situ*. The bone-piece resected has usually been about 1½ × 3 cm. The plane of the resection has been made oblique with the purpose of preventing it from reaching too far posteriorily, which here is considered to be a beginner's pitfall. There were no typical differences in the indications for simple excision of the deposit or resection of the acromion. All the patients had a long history of pain, and conservative treatment had failed to relieve their symptoms. The diagnosis was confirmed by a dense shadow in the region of the supraspinatus tendon on x-ray examination. All pa-

tients were treated with active exercises after the operation and in some cases even before operation. In this survey of 43 shoulders no case of simultaneous cuff rupture was observed.

The age and sex distributions are listed in Table 1. Women were marginally more frequently affected than men, and housewives of 45–50 years of age were the most frequent patients. This corresponds with the reports of DePalma & Kruper (1961), Hammond (1962) and Howorth (1945).

RESULTS

The results of operative treatment are listed in Table 2. Thirty-four out of 43 operations were successful. One of the failures had new bone formation at the resected acromion (Figure 1). One of the patients in Group B with an excellent final result at first had only a removal of the calcific deposit, but the symptoms were not relieved until his acromion was resected later on. In Group C one of the patients with a good result did not obtain this before his acromion had been resected twice.

Table 1. Age and sex distributions in 38 patients (43 shoulders) treated by operation.

Age	Men	Women	Total
30–40	3	4	7
40–50	8	11	19
50–60	3	10	13
60–70	2	1	3
70–80	1	–	1
	17	26	43

Table 2. Classification of the results of 43 operated shoulders in 38 patients.

Results	Group A Excision of calc. dep.	Group B Resection of acromion + calc. dep.	Group C Resection of acromion alone
Excellent	6	12	2
Good	4	8	2
Poor	2	6	1
	12	26	5

The period of observation varied from 3 months to 14 years (average 3.2 years). The stay in hospital varied from 5–104 days (average 33

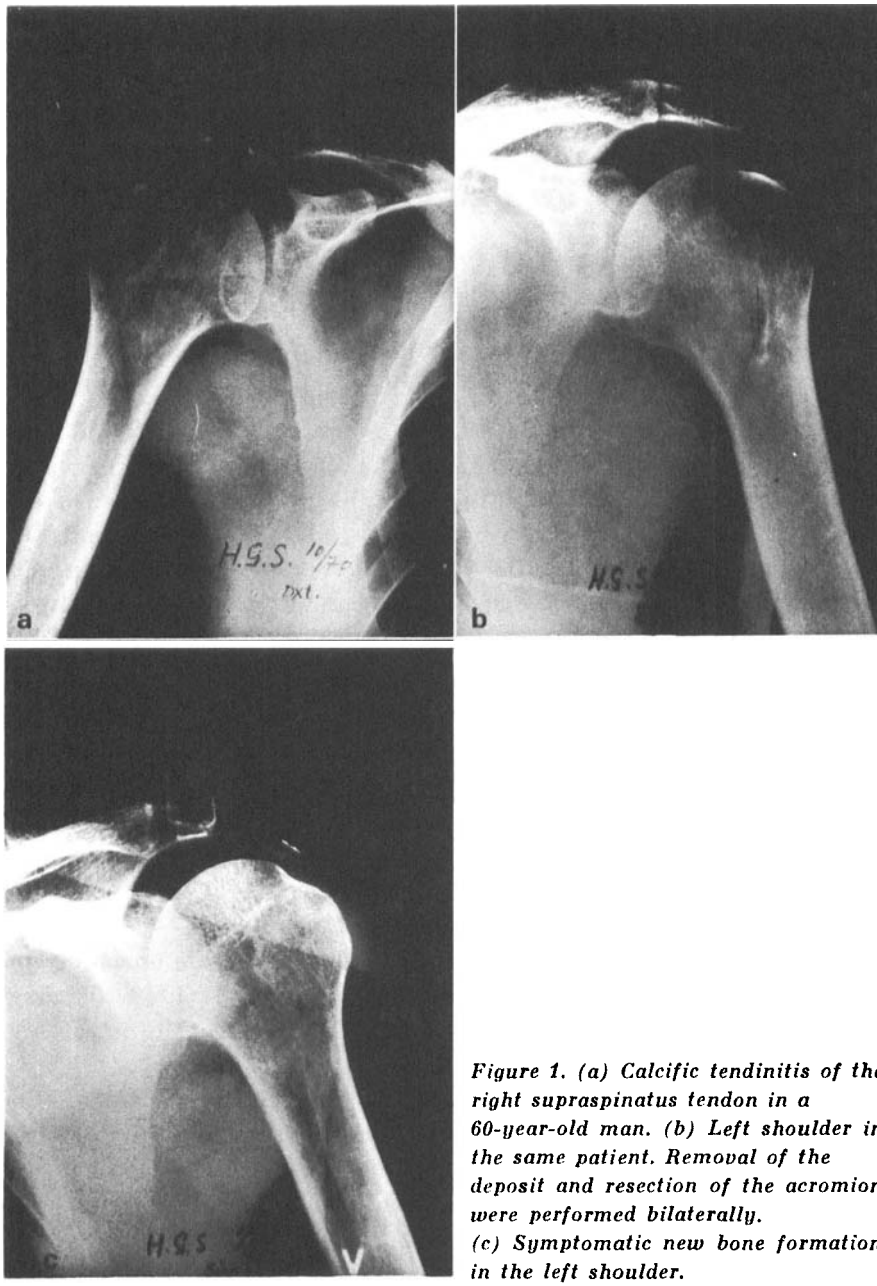

Figure 1. (a) Calcific tendinitis of the right supraspinatus tendon in a 60-year-old man. (b) Left shoulder in the same patient. Removal of the deposit and resection of the acromion were performed bilaterally. (c) Symptomatic new bone formation in the left shoulder.

days). This long hospitalization was due to the postoperative training with physiotherapy.

The symptoms had lasted from 6 months to 22 years (average 7 years) prior to the operation. The pain disappeared from immediately to 6 months after operation (average 2.4 months). Normal motion of the shoulder (patients' evaluation) was achieved from 2 weeks to 1 year after operation (average 3.5 months). The patients in Group A had a much easier and shorter convalescence than the others. There were no serious complications resulting from the operative treatment.

DISCUSSION

Bearing in mind that all the patients were chronic cases in whom conservative treatment had failed, it seems that the results are favourable. The results were the same in all three groups; about 80 per cent of the operations were successful. Bruusgaard (1952) reported favourable results in all his 22 patients after partial resection of the acromion.

Watson-Jones (1955) proposed this operation for calcific tendinitis in 1939, but in the form of total acromionectomy. Armstrong (1949) reported harmful new bone formation at the osteotomy site after partial resection of the acromion. He reported unsatisfactory results in five out of nine patients and therefore abandoned this method in favour of complete acromionectomy, which, according to him, gave better results. Harmon (1958) and Hammond (1962) too were in favour of complete acromionectomy. McLaughlin & Nevasier (Hammond 1962) disagreed regarding the necessity for complete acromionectomy, and believed the section of the coracoacromial ligament to be more important. In this survey there are no cases of complete acromionectomy to compare with partial resection. However, in contrast to Armstrong (1949), we have seen symptomatic new bone formation at the osteotomy site in only one out of 31 cases.

From Table 2 it might be concluded that leaving the deposit *in situ* does not influence the final result after partial resection of the acromion. This feature is supported by Hammond (1962).

Simple incision and curettement of the calcific deposit, which was first performed by Harrington & Codman in 1902 (Howorth 1945), obviously is a minor procedure requiring only a short convalescence. This method has adherents such as McLaughlin (1946), Moseley (1963), DePalma & Kruper (1961) and Howorth (1945). DePalma & Kruper state that they also divide the coracoacromial ligament. It might also

be concluded from Table 2 that simple removal of the deposit is sufficient, since the results are the same, although one of the cases in Group C should be added to the poor results in Group A, because he first had an unsuccessful removal of the deposit.

From this study the author believes that the minor procedure of simple removal of the deposit is to be preferred except where the large group of patients who have increased pain in the middle range of abduction are concerned. In these cases resection of the acromion is the most logical procedure, and it has proved to be beneficial. Removal of the deposit at the same time cannot do any harm, since the subdeltoid bursa probably should be opened anyhow to exclude or repair contemporary cuff rupture. Section of the coracoacromial ligament is probably of value in a few cases where there is marked thickening of the cuff and bursa. True snapping of this ligament has been observed at operation on one occasion recently.

SUMMARY

Forty-three shoulders in 38 patients have been reviewed. They were all operated on for long-standing incapacitating calcific tendinitis in the region of the supraspinatus tendon. Excellent or good results were obtained in 34 out of 43 shoulders. The methods employed were simple incision and curettement in 12 shoulders, curettement combined with partial resection of the acromion in 26 shoulders, and resection of the acromion in 5 shoulders. The results were the same in these three groups and about 80 per cent of the operations were successful. The most commonly affected patients were women of 45–50 years of age.

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