

SCREW FIXATION OF A COMPLETE ROTATOR CUFF TEAR

J. VERMEIREN, F. HANDELBERG, P. P. CASTELEYN

Partial and sometimes full-thickness rotator cuff tears can be managed by arthroscopic debridement and anterior acromioplasty. The recent literature on shoulder arthroscopy does not however mention any alternative operation techniques for this very common lesion.

We present a case of a distal avulsion of the supraspinatus tendon which was reattached with one screw and washer under arthroscopic control. Indications for this type of fixation are discussed.

Keywords : rotator cuff tear ; arthroscopy ; screw fixation.

Mots-clés : rupture de la coiffe des rotateurs ; arthroscopie ; fixation par vis.

CASE REPORT

A 64-year-old retired miner had been complaining of a problem with his left shoulder for 9 months when he was first seen at our clinic. He recalled a sudden movement to have triggered his pain and discomfort. There was a limited range of motion. Impingement tests in abduction as well as in flexion were positive.

A CT-arthrogram and a double-contrast arthrogram (fig. 1) showed a total, distal rupture of the rotator cuff. Since conservative treatment had failed to improve the condition ; an arthroscopic evaluation was proposed.

At arthroscopy a distal avulsion of the supraspinatus tendon was found with minimal retraction of the proximal end. The insertion site of the rotator cuff was roughened with a powered abradar through an anterior portal. Then the proximal supraspinatus stump was reattached to



Fig. 1. — Preoperative arthrogram showing a complete distal avulsion of the rotator cuff.

the humerus by means of a 3.5-mm ASIF cortical screw and polyacetate washer.

A good reduction of the cuff tear was observed from the glenohumeral joint cavity. An arthroscopic anterior acromioplasty was performed. Continuous passive motion was started immediately. Active exercises were started at 3 weeks after the operation. Radiographic examination showed the screw well in place, but a secondary impingement under the acromion could be detected (fig. 2).

Three months later the screw was removed under local anesthesia. At 5 months follow-up the

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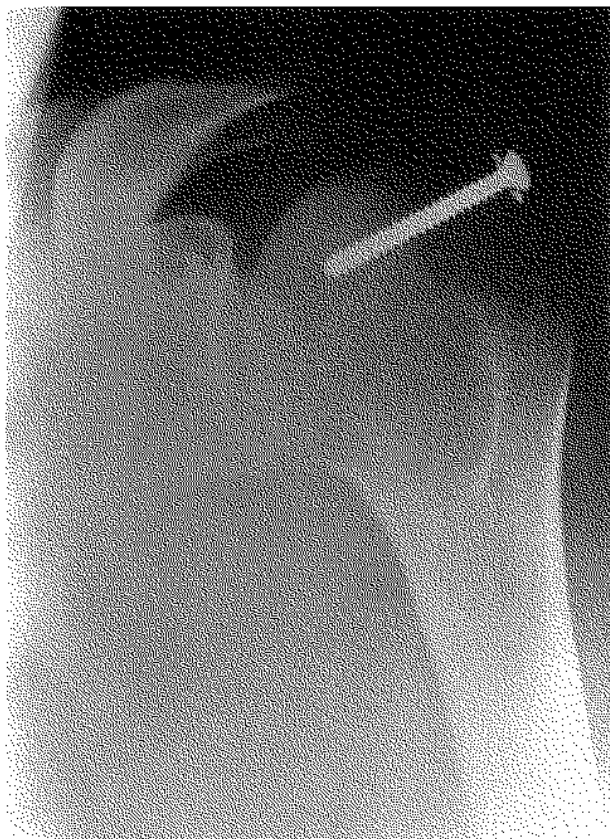


Fig. 2. — Postoperative radiograph showing screw and washer fixation of the cuff.

range of motion of the shoulder joint was 150° of flexion, 130° of abduction, 40° of extension and a normal rotation range. The patient's score for pain improved greatly compared to the preoperative evaluation, whereas stability and strength stayed as good as before. His ability to perform activities of daily living improved slightly.

DISCUSSION

Most authors agree that impingement of the rotator cuff needs operative treatment once a complete tear of the tendon is apparent (3, 9, 10). This was usually achieved by opening the shoulder joint and restoring the affected tendons (7, 10).

Recently, reports have been published on the arthroscopic diagnosis and treatment of rotator cuff tears (1, 4, 5, 6, 8, 11). These authors all agree

on the limited value of debridement and anterior acromioplasty in cases of complete tendon tears (8, 10, 11). Gartsman recorded only 14 satisfactory results out of 25 cases (8), and Ellman reported comparable figures. He mentioned no excellent results in the complete tear group (5).

Esch found 20 of 26 patients with an acceptable U.C.L.A. rating score after acromioplasty for a complete tear of the cuff (6). However an exact comparison between these results is not possible because of different rating scales (the U.C.L.A. rating scale and the American Shoulder and Elbow Surgeons Shoulder Evaluation Form) (6, 2). On the other hand Neer reported 90% excellent and good results in his series of open repair of complete cuff tears (10).

Our present case can be described as a group II (full substance tear of entire supraspinatus), Segment 3 (isolated supraspinatus tear), Stage I (proximal stump close to bony insertion), according to Patte's new classification system (12). The same lesion is described as a full thickness tear of the supraspinatus, grade I (small) by Ellman (4). The usefulness of these descriptions is still to be evaluated in the future. The clinical result of the screw fixation was good, according to the U.C.L.A. scoring system (6).

The indications for a procedure as described in our reported case are of course very limited: there must be distal avulsion of the cuff with no secondary retraction of the stump. Furthermore it is questionable whether a watertight, smooth undersurface of the cuff is possible to achieve in this manner.

There is also the need for screw removal because of possible impingement. We must emphasize the technical difficulties of percutaneous reduction of the stump and subsequent drilling and screwing.

On the other hand quick postoperative recovery and minimal tissue damage are in favor of this technique. Therefore we believe this procedure to be an alternative to open repair of selected distal supraspinatus avulsions.

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SAMENVATTING

J. VERMEIREN, F. HANDELBERG en P. P. CASTELEYN. Schroeffixatie van een complete scheur van de rotatoren cuff.

Een alternatieve, arthroscopische behandeling voor een distale avulsie van de supraspinatuspees wordt beschreven. De pees wordt onder arthroscopische controle met een schroef gefixeerd aan de humerus. Kort overzicht van de literatuur.

RÉSUMÉ

J. VERMEIREN, F. HANDELBERG et P. P. CASTELEYN. Fixation par vis d'une rupture de la coiffe des rotateurs.

Description d'une thérapeutique alternative pour la fixation d'une avulsion distale du tendon du sous-épineux. Le tendon est fixé par une vis à l'humérus sous contrôle arthroscopique. Revue de la littérature.