

IDIOPATHIC POSTERIOR INSTABILITY OF THE SHOULDER JOINT

Results of Operation with Posterior Bone Graft

SVEN-ARNE AHLGREN, THOMAS HEDLUND & LARS NISTOR

Department of Orthopaedic Surgery, Kärnjukhuset, Skövde, Sweden

Five cases of idiopathic posterior instability of the shoulder joint operatively treated mainly by insertion of a bone graft are reported. The late results are satisfactory.

Key words: posterior instability; shoulder joint; bone graft

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Two main groups of recurrent posterior subluxation or dislocation (instability) of the shoulder joint can be recognized, the post-traumatic and the idiopathic (English & Macnab 1974).

This paper reports the results of an operation for idiopathic instability consisting mainly of insertion of a bone graft.

PATIENTS

Four men (age range 18-34 years) and a 64-year-old woman sought medical advice because of instability of the shoulder joint. In four cases the symptoms had started after minor or insignificant trauma and in this group there was an 18-year-old male alcoholic who also had general laxity of the joints. The fifth patient, a 34-year-old man, had 13 years earlier sustained a football injury which was not severe enough to make him attend a doctor but after which the shoulder symptoms commenced. The patients had had symptoms varying from some months to almost 50 years.

Instability of the posterior type was diagnosed at clinical and roentgenological examination (Figure 1). The indication for operation was recurring episodes of painful instability, in some cases occurring with increasing frequency. One male patient could not reduce the dislocations by himself.

OPERATIVE PROCEDURE

The approach is similar to that described by Rowe & Yee (1944), with a skin incision along the spine of the scapula, curving laterally downwards over the posterior aspect of the shoulder joint (Figure 2). The deltoid is separated subperiostally from the spine of the scapula by sharp dissection from the lateral to the medial side where the origin is spared. The muscle is retracted inferiorly and the infraspinatus exposed. Care is taken not to damage the suprascapular and axillary nerves. The infraspinatus tendon and the capsule are divided and the posterior aspect of the glenoid well exposed. About 5 mm from the articular margin a groove is made with an osteotome to receive the transplant, which is taken from the iliac crest. The size of the transplant is about 2 × 2.5 cm and it is allowed to project 8-12 mm posteriorly over the articular surface (Figures 3 and 4). It should be placed in the middle of the posterior aspect of the glenoid and not too cranially or caudally in order to minimize the risk of recurrence of the instability. The tendon or the capsule is duplicated and the deltoid is reattached. Postoperatively the arm is immobilized in neutral position between inward and outward rotation for 4 weeks. Active exercises are then started.

RESULTS

At follow-up the patients were examined clinically and roentgenologically. Follow-up

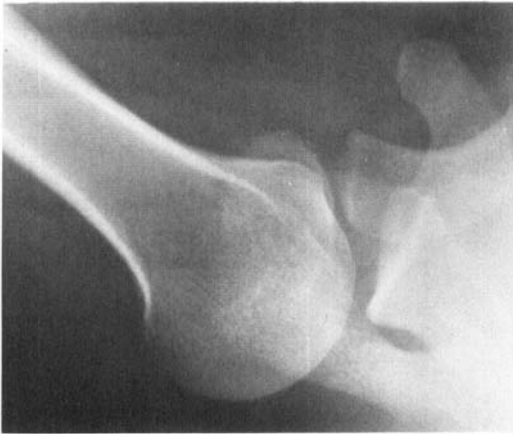


Figure 1. A 22-year-old man. Right shoulder. Vertical caudo-cranial view. Posterior dislocation of the humeral head.

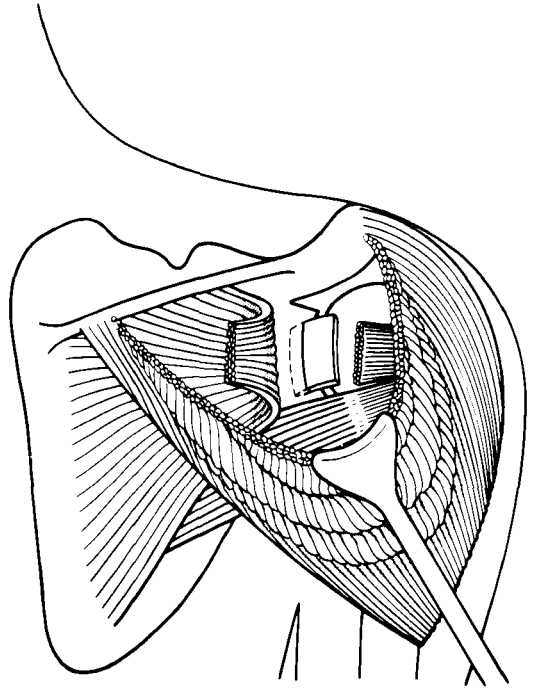


Figure 3. The deltoid is separated from the spine of the scapula and retracted inferiorly. The infraspinatus tendon is divided and the graft in position.

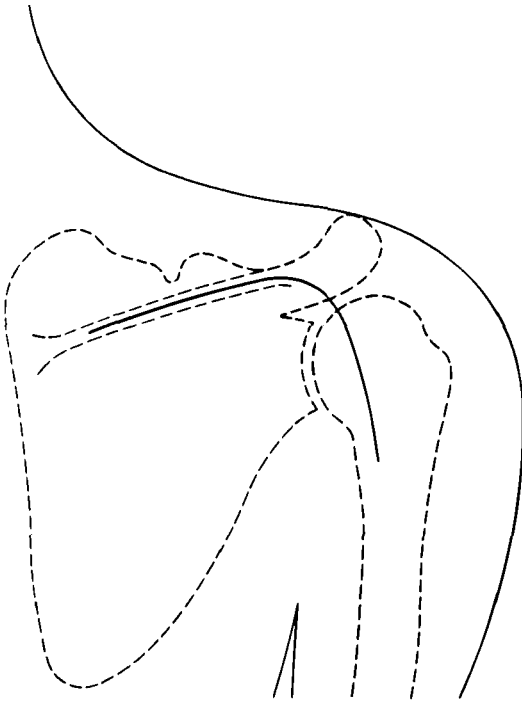


Figure 2. Posterior aspect of the right shoulder showing the skin incision.

time varied; 15 months in one case, 30 months in one case and at least 4 years in three cases.

Two male patients considered their shoulders to be completely normal. They had

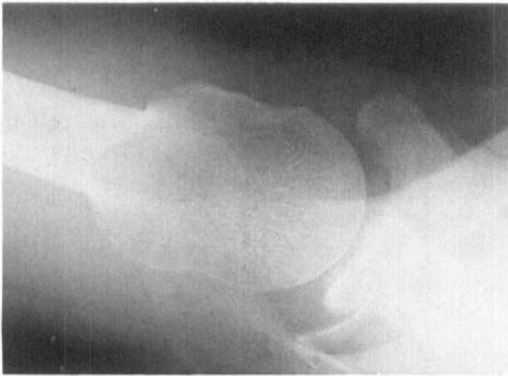
a full range of motion and no instability could be provoked. Another of the male patients stated that during the first 2-3 years after operation he had experienced only some crepitations in the shoulder but later got a feeling of incipient locking in a certain position of the arm. He had no feeling of instability and thought himself much better than before operation. Clinical examination revealed no instability during movement, but when the humerus was slightly flexed and inwardly rotated the examiner could force the humeral head somewhat backwards indicating slight instability. The sensation the patient thereby felt was not familiar to him. The mobility was normal.

The patient with general joint laxity considered himself definitely improved by the operation even if he experienced some residual instability which could be verified. A slightly decreased mobility was noted.

The 64-year-old woman, reviewed 4 years



A



B

Figure 4. A 34-year-old man. Postoperative roentgenograms of the right shoulder.

(a) A-P view. The graft is clearly visible through the humeral head.

(b) Vertical caudo-cranial view showing the graft and its position in the scapular neck.

after operation, was satisfied, considered the shoulder stable, painless and with sufficient mobility. At clinical examination the humeral head could be seen to bulge backwards during

movements either spontaneously or after slight provocation. Inward rotation was moderately decreased, otherwise mobility was normal.

In no case did the roentgenological examination reveal resorption and disappearance of the graft.

DISCUSSION

A division of posterior dislocations and subluxations of the shoulder into a post-traumatic (traumatic) and a idiopathic (atraumatic) group seems well-founded.

The term dislocation is questionable though a true dislocation with no contact between the articular surfaces may occur. A "subluxation" with articular contact partially maintained is not unusual. The term "instability" covers the various alternatives from slight incongruity to complete dislocation and has therefore been suggested as a more suitable term (DePalma 1973).

Four of the cases in the present series can be classified as instability of the idiopathic type. The aetiology in the case with the football trauma is a little uncertain. The trauma seems significant, but a posterior dislocation which reduces spontaneously must be due to an inherent tendency to instability. It therefore seems reasonable to assume idiopathic instability also in this case.

Several operations have been designed for cases where the symptoms indicate surgical intervention. Such operations are: soft tissue operations (Sjövall 1944, Ekman 1948, Severin 1954, Boyd & Sisk 1972, English & Macnab 1974, Lindholm 1974); skeletal operations such as a posterior bone graft (Asplund 1942, Hindenach 1947, Fried 1949, Lindholm 1974) or an osteotomy of the glenoid cavity (Scott 1967, English & Macnab 1974) and combined procedures (Dimon 1967, McLaughlin 1962, DePalma 1973). In the present series a combined procedure with a posterior bone graft and a raphe of the infraspinatus tendon or posterior capsule was

chosen in four cases out of five and in the fifth only the bone graft was used.

The results can be judged as excellent in two cases and very good in one case. The other two patients considered themselves definitely improved. It is remarkable, however, that the woman thought that her shoulder was stable in spite of the instability clearly demonstrable at the clinical examination.

A fairly extensive search of the literature for idiopathic posterior instability of the shoulder joint treated with a posterior bone graft revealed several reports all with favourable results (Hohmann 1933, Asplund 1942, Toumey 1948, Jones 1958, Galli 1959, Dimon 1967, Lindholm 1974) but in each report there were only one or two cases and the interval between the operation and the review was often less than a year. DePalma (1973), who has had greater experience, favoured a combined procedure with a bone graft or osteotomy of the neck of the scapula supplemented by tendon shortening and reported "no failures".

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Correspondence to: Sven-Arne Ahlgren, M.D., Department of Orthopaedic Surgery, Central Hospital, S-251 87 Helsingborg, Sweden.