

Posterior dislocation of the shoulder with a large anteromedial defect of the head of the humerus

A case report

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Summary. *A new surgical technique for treating a posterior dislocation of the shoulder with a large anteromedial defect of the humeral head is described; it can be applied to those very severe dislocations that might otherwise be considered to need replacement or arthrodesis. A transverse osteotomy below the surgical neck of the humerus with lateral rotation of the head into anteversion limits medial rotation and this prevents the edge of the defect impinging on the posterior edge of the glenoid to cause redislocation.*

Résumé. *Cet article présente une nouvelle technique de traitement chirurgical de la luxation postérieure de l'épaule avec encoche antéro-interne étendue de la tête humérale. Elle peut être employée dans les cas où on envisagerait de recourir à une arthroplastie ou à une arthrodeuse de l'épaule.*

Une ostéotomie horizontale, immédiatement au dessous du col chirurgical de l'humérus, permet d'obtenir la rotation externe de la tête jusqu'à la position d'antéversion.

Grâce à cette technique, la rotation interne du bras est limitée de telle sorte que le bord de l'encoche ne puisse arriver jusqu'au rebord de la cavité glénoïde et provoquer ainsi la reluxation.

Key words: *Shoulder, Posterior dislocation, Head of humerus, Defect, Rotational osteotomy.*

Introduction

Posterior dislocation of the shoulder is rare, the incidence being only 1.5–2.0% of dislocations of this joint [3, 6]. It is also the most missed dislocation

of a large joint, with up to 60% diagnosed late [3, 4], especially when posterior dislocation is a result of a sequence of uncoordinated muscle violence caused by electric shock treatment or an epileptic fit. An anteromedial defect of the humeral head is often produced. Closed reduction is usually impossible and the presence of the defect usually indicates the need for surgical intervention. This paper describes an operation to overcome the problem of the large medial defect of the head of the humerus.

Case report

A 43-year-old male bus driver had an epileptic fit and sustained a fracture of the mandible. He was treated in a faciomaxillary unit and the posterior dislocation of his shoulder was overlooked for three weeks.

Radiographs confirmed that the defect involved 40% of the joint surface of the head of the humerus (Figs. 1 and 2). Four weeks after the injury open reduction was undertaken.

The joint was approached anteromedially, between the supraspinatus and the subscapularis. The humeral head was firmly locked at the posterior glenoid edge. The compressed and broken fragments of the head were partially extracted and the lesser tuberosity which was still incompletely attached by soft tissues was firmly resutured to the head (Fig. 3). A transverse osteotomy of the surgical neck of the humerus was then performed and the head rotated to bring the margin of the defect to the posterior third of the glenoid. The arm, flexed at the elbow, was medially rotated on to the patient's abdomen (Fig. 4), and held while the osteotomy was fixed with a wire loop. Immobilization with a Velpeau dressing was continued for four weeks.

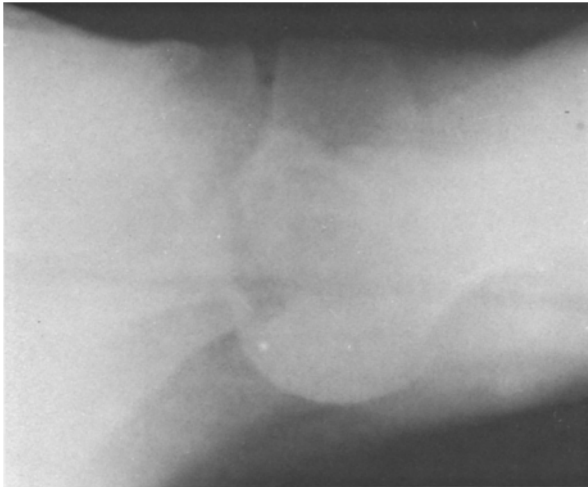


Fig. 1. The axillary view showing posterior dislocation of the shoulder with a large anteromedial defect of the humeral head

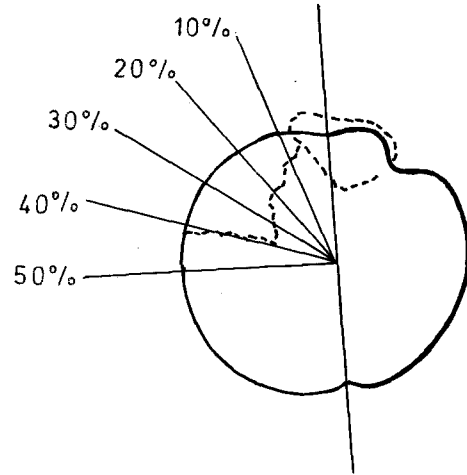


Fig. 2. Diagram of the defect of the humeral head which involves 40% of the articular surface

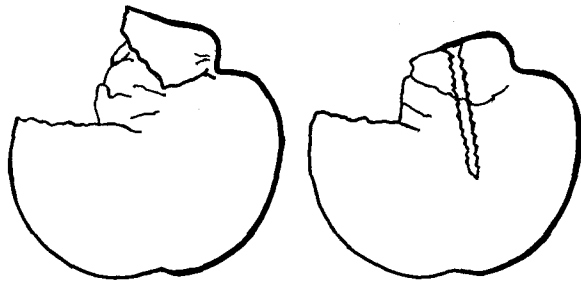


Fig. 3. A diagram to show how the compressed particles of the humeral head are remodelled with fixation of the lesser tuberosity with a screw or sutures

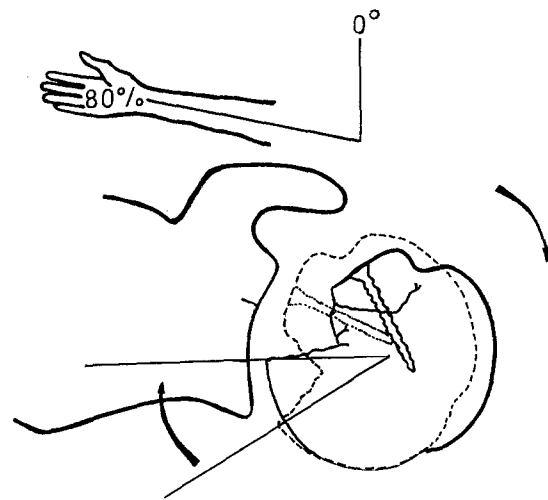


Fig. 4. Rotation of humeral head laterally to replace the margin of the defect in the posterior third of the glenoid. The arm is in internal rotation

Result

The patient was kept in a Rehabilitation Centre for one month and then treated as an out-patient, after which he continued his exercises at home. One year later he had full elevation of the shoulder but moderately limited medial rotation with lateral rotation to 20° (Figs. 5 and 6). There was no pain. Compared to the opposite shoulder the muscles showed slight wasting. The joint was stable, with no evidence of subluxation.

Discussion

In 1952, McLaughlin [3, 4] reported the technique of surgical treatment for posterior dislocation with an anteromedial defect of the humeral head. Some time later Neer [5] modified the operation. Both these methods worked well when the defect was only 30% of the surface of the head. With defects which were larger the results did not appear to be so satisfactory. The Eden Hybbinette [1, 2] technique has been also applied to such cases with

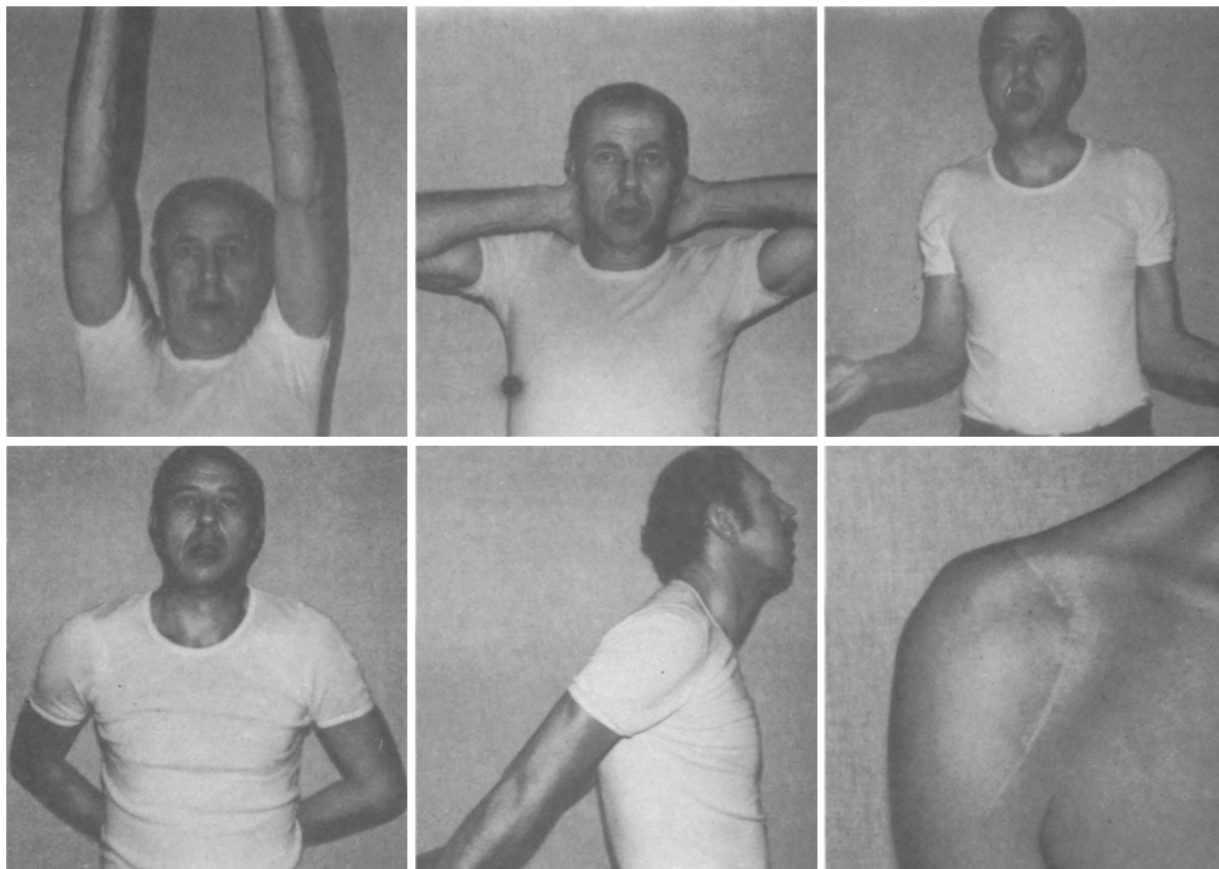


Fig. 5. Function of the shoulder a year after operation

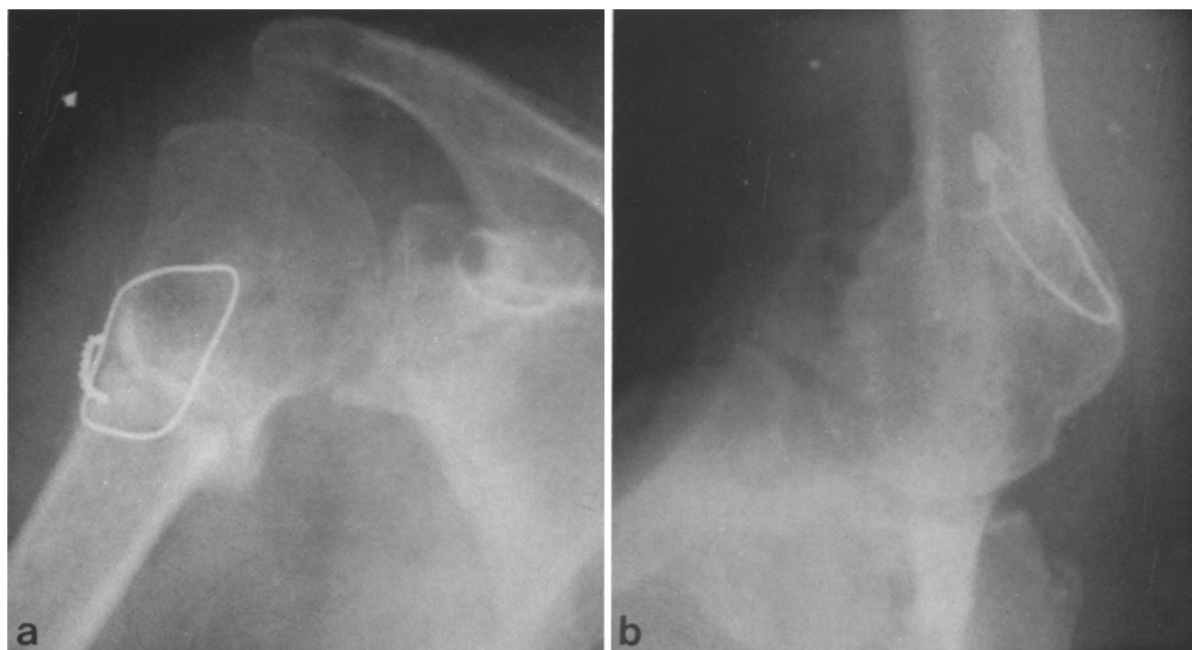


Fig. 6a, b. Radiographs showing the osteotomy five months after operation. a Neutral rotation, b axillary view

variable success. On this basis, when the defect is more than 40% of the surface of the head, replacement or arthrodesis has been recommended.

Our technique may be used for posterior dislocations with a defect of 50% of the humeral head; the lesser tuberosity remains, and the defect can be remodelled by the growth of new bone.

The wire gives firm fixation to the osteotomy and it does not need to be removed.

Conclusion

Derotation osteotomy of the humeral head presents a useful method of treatment for posterior dislocation of shoulder with a large anteromedial defect of 30–50%. The anterior approach enables the decision to be made at operation as to whether the McLaughlin, the Neer, our method or a combination of Neer's and our method should be used.

References

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