

RECURRENT DISLOCATION OF THE SHOULDER

BY

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In the *Acta Orthopædica*, vol. XV p. 206 1945, Eivind Thomasen reviews recurrent dislocations of the shoulder. He surveys the literature, and discusses 22 Danish cases, of which 8 were operated by the Hybbinette-Eden method.

His list of references shows however that his reading has been too much in one direction, and readers familiar with the English language, whom he addresses in this paper, will be surprised by his statement that "Anglo-Saxon literature does not afford much information regarding this disease". He has tried in vain to find a reasonable explanation why some shoulder dislocations become recurrent. Had he been better acquainted with British literature he would have discovered that an answer to this problem was given by Bankart in 1938, and was accepted by many of the leading British orthopedic surgeons; he would also have known that Bankart has described an operation which now bears his name in Anglo-Saxon literature, and which is based on this answer.

Bankart's explanation and treatment have been so widely accepted that they cannot be omitted from a review of the subject in 1945 and it is to be regretted that Eivind Thomasen has missed this opportunity of introducing something new into Scandinavian literature; instead he has only been able to show that the Hybbinette-Eden method gives very good results, a fact which has long been recognised by Scandinavian orthopedic surgeons. But the question whether the Hybbinette-Eden method is "*the method*" (p. 234) is still open to disputes; the results are

hardly as good as Eivind Thomasen describes. Some leading British orthopedic surgeons choose Bankart's method, and two have published results of this method which appear to be quite as good as he claims for the Hybbinette-Eden operation.

In an article entitled "Pathology and Treatment of Recurrent Dislocation of the Shoulder", A. S. B. Bankart stresses the separate mechanism, pathology and management of recurrent as opposed to ordinary dislocation of the shoulder. (*Brit. J. Surg.* 26. 23. 1938).

The trauma which leads to recurrent dislocation, he says, is not, as is so often described, a fall onto a widely abducted arm—which may cause an ordinary dislocation— but a fall either onto the back of the shoulder, or onto the elbow when the arm is extended, externally rotated and slightly abducted. In both these positions the humeral head is forced against the anterior rim of the glenoid cavity, and the resulting lesion is not a tear in the capsule, but a tear between the glenoid labrum with the attached capsule, and the bony margin of the cavity. In contrast with a capsular tear which heals readily after reduction of the dislocation, there is no tendency to spontaneous reattachment of the labrum and capsule to the bone, and the gap, between the labrum and capsule on the one hand, and the glenoid bone on the other, persists. This gap may not be big enough for an extraarticular dislocation, and the recurrences are therefore often intraarticular, the humeral head riding onto the glenoid rim and being readily reduced. The lesion is not due to muscular or capsular weakness. It occurs, as is often stated, in young and vigorous persons, in athletes, and in epileptics (an epileptic, it is well known, does not abduct his arm in a fit).

The fact that the glenoid labrum is very often found torn in recurrent dislocations is, as Eivind Thomasen mentions, well known. But it is not surprising that the lesion is not always found, as it can only be demonstrated when the glenoid labrum has been exposed by retracting the divided subscapularis tendon medially. One may then see a vertical gap with the free edge of the capsule and glenoid labrum lying loose over the head of

the humerus. But even now the capsule may still appear to be intact, as the free edge usually lies far medially on the neck of the scapula, obscured by scar tissue; if, however, the capsule is now incised vertically near the rim of the glenoid cavity, a blunt instrument can be passed freely from the joint over the front of the scapular neck, showing that the labrum and capsule have been torn from the bony edge, which is smooth and bare.

Bankart found this lesion in 27 consecutive cases operated on for recurrent dislocation of the shoulder. Watson-Jones described the same finding in a series of 34 cases, and the same was found in 2 cases operated for this method in the Orthopaedic Hospital, Aarhus.

Thus in order to repair the damage one must secure attachment of the torn capsule and glenoid labrum to the rim of the glenoid cavity. Bankart uses the following method:

The patient lies with a small sandbag between his shoulder blades, the affected arm by his side, with another sandbag under the elbow. The skin is incised for 12.5 cms. from the coracoid process downwards and outwards along the anterior border of the deltoid. The cephalic vein is identified between the deltoid and pectoralis major and retracted medially with the latter. The coracoid process is divided 2 cm. from its tip and retracted down with its 3 attached muscles. The humerus is rotated outwards, and an aneurysm needle passed under the subscapularis tendon, which is cut near its insertion, and retracted medially. If there is still no visible defect in the capsule, a vertical incision is made in it over the glenoid margin. The glenoid labrum is now found lying loose in the lateral flap, and the rim of the glenoid cavity is found to be quite smooth and free from attachments. A thin shaving of bone is next chiselled up from the glenoid margin and from the front of the neck of the scapula: the head of the humerus is pulled out of the cavity with a hook or special instrument: 2 pairs of holes are made near the edge of the cavity by taking a good bite with a sharp vulsellum forceps and by careful manipulation working them through the bone. Two threads are drawn from without into the joint, and out through the neighbouring holes, so that there are now 2 pairs of threads on the smooth external surface of the bone. These are passed through the free edge of the capsule, which is pressed down onto the raw bone, and are tied tightly over it with mattress sutures. The bony shaving is replaced over the suture, the subscapularis tendon and the coracoid process are repaired, the fascia and

skin are sutured. The arm is bandaged with the forearm strapped across the chest. Active movements are begun after a month, and full range of movement is said to be obtained at the end of another month.

Bankart reported that he had no recurrence among the 27 cases he had operated by this method.

His interpretation and operation for this condition were recognised immediately in the Anglo-Saxon orthopedic world.

In 1939 Campbell gave a detailed account of Bankart's idea, operation, and results, in his "Operative Orthopedics" (p. 461). In 1943 McMurray wrote in his "Practice of Orthopedic Surgery" (p. 75) "Although many operative procedures have been described and practised, the results obtained by Bankart's operation are so consistent that this procedure should always be adopted the results of the operations are excellent." In the same year Watson-Jones wrote in "Fractures and Joint Injuries", vol. II p. 458 about Bankart's method, "it is by far the most reliable". He operated on 34 cases by Bankart's method without recurrence, "despite the fact that most of the patients resumed athletics, many played Rugby football, one played for England, and several are pilots in the Royal Air Force." Walter Mercer (Orthopedic Surgery, 1944, p. 682) also chooses Bankart's operation.

In fact there appears to be considerable confidence in Bankart's method, and the published results of 2 surgeons—61 cases without recurrence—are promising. On the other hand Eivind Thomasen quotes 169 cases operated by the Hybbinette-Eden method, with one recurrence. Unfortunately for neither method have we a detailed account of the postoperative shoulder movement. For both methods full postoperative movement is claimed, although one would expect some limitations after operation on the joint capsule. Eivind Thomasen reported that among 8 cases 5 had full range of movement, 1 had limitation of external rotation, and 2 were not re-examined.

Here in the Orthopaedic Hospital, Aarhus, the results of the Hybbinette-Eden method, have been less satisfactory than Eivind Thomasen's findings. Of 6 operated cases, 2 recurred, and in both cases the bone graft was found to have broken. It was

therefore thought worthwhile to try Bankart's method. So far 2 cases have been treated, one had been operated previously by the Hybbinette-Eden method.

B 22038 a 22-year-old woman hairdresser, fell in Jan. 1943, onto the right shoulder and dislocated it while skiing. The shoulder reduced spontaneously. Since then there had been innumerable dislocations, several daily towards the end.

9.6.45 Bankart's operation: method followed exactly; a hole was made unintentionally in the capsule laterally, while isolating the subscapularis tendon. This was repaired immediately. No obvious defect could be seen at first, but after incising the capsule vertically over the glenoid margin, the labrum was found lying free from the bony margin, just as Bankart described. The arm was immobilised for 4 weeks, and then active movements were begun. The patient was very apprehensive, but after 10 days, movements were full except for 15° limitation of external rotation compared with the opposite side. 4 months after operation the patient was re-examined; she was working as a hairdresser without disability; there had been no recurrence, but with the scapula fixed external rotation was 0° .

24112. 20-year-old male electrician, dislocated the R. shoulder in a motorcycle accident, Feb. 1944. The shoulder was reduced at the local hospital. There were innumerable redislocations.

13.1.45 Hybbinette-Eden operation.

7.8.45 Patient woke with shoulder dislocated. There were about 20 further dislocations, in the next 4 months.

3.12.45 Re-admitted. X-ray showed that the graft had broken.

4.12.45 Bankart Operation. The graft was found lying as a loose sesamoid in the subscapularis tendon, and a hole was made in the front of the capsule while removing it. This was repaired. After incising the capsule over the glenoid rim, the bone edge was found to be free of attachments, and the labrum lying partly free at the lower end of the incision; this loose part was removed, and Bankart's operation was completed.

This case, says Chief Surgeon Bentzon, shows that there will always be some patients in whom the anatomical arrangement of the joint makes the Hybbinette-Eden operation unsatisfactory. Namely, those in whom, as the accompanying stereoscopic X-ray of the last patient shows, the glenoid cavity faces so anteriorly that a graft placed according to the Hybbinette-Eden method will lie almost sagittally, and thus have its value as a bony block reduced.

One may expect that the near future will bring bigger numbers so that we may assess the risk of recurrence in Bankart's operation. The operation has been known now for 7 years, and the number of "peaceful" orthopedic lesions has increased during the war.

A small numbers of cases from the Orthopaedic Hospital, Aarhus, gives the impression that the Hybbinette-Eden operation is not quite so outstanding as Eivind Thomassen's figure suggest.

For both operations we lack a detailed account of the post-operative shoulder function. But even if the results do not then show any significant difference many surgeons would prefer Bankart's method as "*the* method". In the first place it aims at radical repair of the original lesion (assuming that Bankart's explanation is the correct one, which many things indicate), while the Hybbinette-Eden method is unanatomical. Secondly, Bankart's operation requires only one exposure, while the Hybbinette-Eden method also requires exposure for taking the bone-graft.

This contribution aims to show that Anglo-Saxon literature does afford much information concerning the disease, and to introduce Bankart's interpretation of and treatment for recurrent dislocation of the shoulder.