

LONG-TERM RESULTS OF THE BOYTCHEV PROCEDURE FOR THE TREATMENT OF RECURRENT DISLOCATION OF THE SHOULDER

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The authors present the long-term results obtained with the Boytchev technique in the treatment of recurrent anterior dislocation of the shoulder. Recurrence, clinical outcome and functional limitations were evaluated.

A total of 27 shoulders in 25 patients were studied. The average follow-up period was 13.3 years. There were no immediate neurovascular complications and no residual pain. The average recovery time was 4.3 months. Dislocation recurred in five shoulders (18%) and 18.5% of the patients were left with restricted mobility. All patients resumed their previous employment although sporting capacity recovered to pre-injury levels in only 9 of 15 patients. The results were classified as good in 18.5% and as excellent in 40.7% of the patients, but the remaining 40.7% had a fair or poor result.

In conclusion, the recurrence rate is high and nearly 20% of the patients are left with limited shoulder mobility. Furthermore, although all the patients were able to return to their job, only 60% of those engaged in sports regained their previous level. This technique, although attractive, is better avoided.

Keywords : Boytchev procedure ; shoulder ; recurrent dislocation.

Mots-clés : technique de Boytchev, luxation récidivante ; épaule.

More than 150 techniques have been designed for the surgical treatment of recurrent dislocation of the shoulder. This figure in itself is an indication that no one technique has a 100% success rate.

The Boytchev technique (1) can be classified under the procedures based on active muscular control. A musculotendinous flap, obtained by disinserting the origin of the short head of the biceps, the pectoralis minor and the coracobrachialis from the coracoid process, is passed under the subscapularis muscle and then reinserted with a screw (fig. 1). Theoretically, the net result of the Boytchev technique is an active "belt" which prevents anterior displacement of the head of the humerus. But in reality the capsule is pulled anteriorly, which jeopardizes the result.

Later on, the original design was simplified to include only the vertical fibres of the pectoralis minor (2). Our team limited the rerouting to the coracobrachialis and to the short head of the biceps, so that only muscle fibers with a single direction were used. In our hands both techniques gave excellent results after a short follow-up period (5, 6).

INTRODUCTION

The glenohumeral articulation is an example of an enarthrosis which owes its stability almost exclusively to capsular and muscular control. Consequently, any injury affecting these structures easily converts it into an unstable joint.

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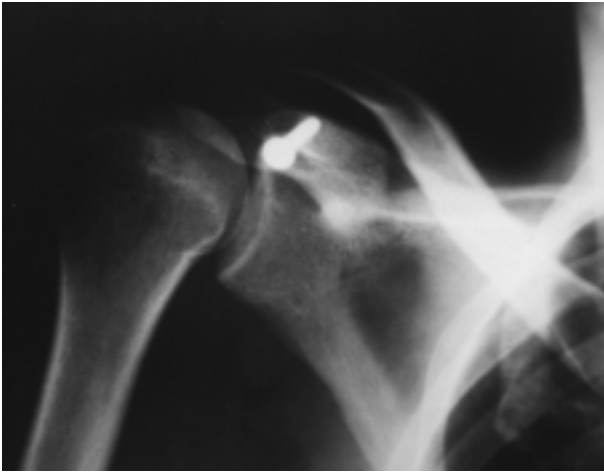


Fig. 1. — Postoperative xray showing reattachment of the coracobiceps musculotendinous flap.

PATIENTS AND METHODS

A total of 25 patients (27 shoulders) were included in this study. The operation was bilateral in two patients.

All subjects studied had recurrent anterior dislocation, the average number of dislocations being three. The average age at the first dislocation was 20.2 years (13 to 24 years). The average time period between the first dislocation and the operation was 4.3 years (3 months to 12 years). There were 22 men and 3 women.

Two patients were left-handed ; one was affected on the right and the other one on the left. The remaining 23, all right-handed, were divided into three groups ; 15 had a right, 6 a left and 2 a bilateral recurrent dislocation. The original cause of dislocation was a sports injury in 11, a traffic accident in 5, an accidental fall in 9, and a minor injury in two.

The level of physical activity before the first dislocation was high in 16 patients (regular sports activity in 13, manual work in 3) and medium in 9 (3 housewives, 6 sedentary professions).

Detailed description of the technique was given previously (6).

The results were qualified as excellent, good, fair or poor based upon recurrences, pain, restriction of motion, and level of activity (6).

RESULTS

The average follow-up period was 13.3 years (range 9 to 17). No complications which could be

attributed to the operation, such as associated infections or neurovascular injuries, occurred. The recovery period averaged 4.3 months (range 7 weeks to 8 months).

Recurrences : dislocation recurred in five shoulders (18%) between 4 and 43 months. Three patients underwent further surgery, and two declined it. The Bristow-Latarjet technique was used as a salvage procedure.

Pain : None of the patients complained of any pain.

Mobility : A total of 5 shoulders (18%) had restricted mobility, more specifically reduction of external rotation. In one patient it reached 20°.

Postoperative level of activity : All patients were able to return to their normal activities. However, only 9 out of 15 engaged in sports fully regained their previous level. Three manual workers returned to their initial occupation.

The results were classified as unsatisfactory in 5, fair in 6, good in 5 and excellent in 11 patients (table I).

Table I. — Outcome scoring system

	recurrences	pain	restriction of mobility	level of activity
excellent	no	no	no	normal
good	no	no	external rotation < 25°	normal
fair	no	yes	external rotation > 25°	no sports activity
poor	yes	yes	other limitations	no sports and work activity

DISCUSSION

The Boytchev technique has an unacceptably high recurrence rate : 18% in this study, and 44% in the series of Dalsgaard *et al.* (3). The latter authors refer to studies with 0%, 21% and 13% recurrence rates. In other words, the procedure is at best very controversial. Nowadays safer techniques are available, such as the Bristow-Latarjet and the Bankart procedure ; their recurrence rate is in the vicinity of

3%. This means that the Boytchev technique can no longer be recommended. The reason for the multiple recurrences is probably the fact that the musculotendinous flap pulls the capsule forwards, so facilitating dislocation.

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SAMENVATTING

P. ZAMORA-NAVAS, A. BORRÁS VERDERA, J. PORRAS GARCÍA, A. PADILLA MÁRQUEZ, P. LINARES. De Boytchev operatie voor de behandeling van recidiverende schouderluxatie. Resultaten op lange termijn.

De auteurs gaan vooral in op het aantal recidieven, het klinisch resultaat en de blijvende functiebeperkingen. Het gaat om 27 schouders bij 25 patiënten met een gemiddelde follow-up van 13,3 jaar. Geen enkele vroegtijdige neurovasculaire complicatie werd vastgesteld, evenmin als blijvende pijn. Gemiddeld was een herstelperiode van 4,3 maanden nodig. Vijf schouders hervielen (18,8%), en 18,5% der patiënten hielden een

bewegingsbeperking over na de ingreep. Allen hernamen hun vroeger werk, maar slechts 9 op 15 sportbeoefenaars bereikten opnieuw hun vroeger niveau. Het resultaat werd beschouwd als excellent in 40,7% der gevallen, goed in 18,5% en matig of slecht in 40,7%. Samenvattend kan men dus stellen dat het recidiefpercentage opvallen hoog was (18%), terwijl 187,5% der patiënten een bewegingsbeperking overhielden. Alhoewel allen hun vroeger werk hernamen, bereikte slechts 60% van de sportenthousiasten het vroegere niveau. De operatie van Boytchev, alhoewel aantrekkelijk op het eerste gezicht, is niet aan te bevelen.

RÉSUMÉ

P. ZAMORA-NAVAS, A. BORRÁS VERDERA, J. PORRAS GARCÍA, A. PADILLA MÁRQUEZ, P. LINARES. Résultats à long terme de l'opération de Boytchev dans le traitement de la luxation récidivante de l'épaule.

Les auteurs rapportent les résultats à long terme obtenus avec l'opération de Boytchev dans le traitement de la luxation antérieure récidivante de l'épaule. Ils ont étudié les récurrences, le résultat clinique et les limitations fonctionnelles. Cette étude a porté sur 27 épaules chez 25 patients. Le suivi moyen est de 13,3 ans. Ils n'ont relevé aucune complication neurovasculaire précoce, ni aucune douleur résiduelle. La récupération a pris en moyenne 4,3 mois. Il y a eu 5 récurrences de luxation (18%) et 18,5% des patients conservaient une limitation de la mobilité. Tous les opérés ont repris leur travail antérieur ; le niveau sportif n'a été récupéré que chez 9 opérés sur 15. Les résultats ont été considérés comme bons dans 18,5% et excellents dans 40,7% ; les 40,7% restant étaient médiocres ou mauvais.

En conclusion, cette opération a donné un taux élevé de récurrences et près de 20% des patients ont conservé une limitation de la mobilité articulaire. De plus, bien que tous les opérés aient repris leur travail antérieur, ceux qui pratiquaient le sport n'ont recouvré leur niveau antérieur que dans 60% des cas. L'opération de Boytchev, bien que séduisante au premier abord, doit être rejetée.