THE BOYTCHEV PROCEDURE FOR RECURRENT ANTERIOR DISLOCATION OF THE SHOULDER. A CONTROVERSIAL TECHNIQUE

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In the Boytchev technique the conjoined tendons of the coracobrachialis and short head of the biceps, together with the tendon of the pectoralis minor and the detached tip of the coracoid process are rerouted behind the subscapularis muscle, and reattached to the coracoid process with a screw. During a 10-year period 37 patients with recurrent anterior dislocation underwent a Boytchev procedure.Twenty-six patients (with 27 shoulders) were available to follow-up. The results of this retrospective study were disappointing, as the overall redislocation rate was 44%. The opinions of other authors were found to be extremely divergent.

Keywords : shoulder ; recurrent anterior dislocation ; Boytchev.
Mots-clés : épaule ; luxation antérieure récidivante ; Boytchev.

INTRODUCTION

The surgical procedures for recurrent anterior dislocation of the shoulder are based on two principles : either passive control of the humeral head with capsular repair, like in the Bankart procedure, or active control, in which the muscle power prevents redislocation, as in the modified Bristow procedure and in the Boytchev (1) procedure. Boytchev (1902-1971) was a Bulgarian orthopedic surgeon, who described his technique in 1951 (1).

PATIENTS AND METHODS

Between July 1985 and February 1995, 37 patients were operated in Vejle Hospital, Denmark, with the Boytchev procedure. Of these 37 patients, 5 could not be traced, 5 did not respond, and one did not wish to participate, so that 26 patients with 27 shoulders were available for a follow-up study. The mean follow-up period was 7 years. There were 4 women and 22 men. Their average age at the time of operation was 26 years (range 16 to 46 years). Eighty-two percent indicated trauma as the cause of primary dislocation ; 12% did not experience any trauma, and for 6% these data were not available. The dominant arm was affected in only 31% of the cases. Radiographs showed a Hill-Sachs lesion in 2 patients, and a fracture of the greater tuberosity in one patient. The operations were performed by 11 different surgeons.

Subjective satisfaction, ability to work and sports activities, were taken into account. From an objective point of view the redislocation rate and the C. R. Rowe score (5) were used.

RESULTS

Forty-six percent of the patients were satisfied with the result ; 29% indicated the result as fair, and 25% as not satisfactory. Two patients (8%) had changed work because of shoulder impairment. Sixty-eight percent indicated no change in sporting activity ; 4% played at a higher level, and 28% at a lower level.

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The overall redislocation rate was 44% (12 / 27). According to the C. R. Rowe score there were 46% excellent results (90-100 points), 0% good results (75-90 points), 18% fair results (51-75 points), and 36% non-satisfactory results (0-50 points). An appreciable loss of external rotation was noted in only 6%.

COMPLICATIONS

Five out of 26 patients, or 19%, needed reoperation : two underwent a Putti-Platt procedure, one underwent an arthroscopic Bankart repair, one a second Boytchev procedure, later followed by resection of the labrum, and one had the screw removed. There were no infections or problems with the musculocutaneous nerve, in contrast with other studies (6).

DISCUSSION

At first sight the idea behind the Boytchev technique is just brilliant. Two or 3 tendons are simply rerouted, so that they form an active anterior barrier against redislocation of the humeral head. This corresponds with the perfect results cited by Ha'Eri (4) and by Conforty (3) : zero percent recurrences, after a minimum follow-up period of 2 and 9 years respectively.

But further thinking leads to the assumption that rerouting of 2 or 3 tendons behind the subscapularis muscle might pull this stabilizing muscle forward, so that redislocation is in fact promoted, especially if the tendons are placed under great tension. Claes (2) noted 21% recurrences (13% dislocations ; 8% subluxations) and Warren-Smith *et al.* (6) found 13% of their 39 patients complaining of episodes of possible subluxation at an average of 14.3 months after surgery. Moreover, they found that 20% had musculocutaneous nerve palsy, but most of these recovered fully. They also noted 5% superficial and 5% deep infections. Other authors have found problems with the screw as an indication for surgery (4). Our study included 11 different surgeons. In other studies all the surgical procedures have been performed by one or two surgeons (3, 4). It is inconclusive as to what degree the redislocation frequency is affected by this.

A Medline computer search, covering the period 1966-1999, provided no further information about the Boytchev technique. In view of this scarcity of data, one can only state that it is impossible to pronounce a fair judgement for the present.More studies are required in order to reach a sufficient level of objectivity.

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SAMENVATTING

H. L. DALSGAARD, C. B. GØTHGEN, M. J. HOOG-MARTENS. De Boytchev operatie voor de behandeling van recidiverende voorste schouderluxatie. Een controversiële techniek.

Bij de Boytchev techniek worden de pezen van de m. coracobrachialis, van de korte bicepskop en van m. pectoralis minor, samen met hun benige insertie aan de processus coracoideus, achter de m. subscapularis doorgevoerd, en vervolgens weer vastgehecht op hun normale plaats met behulp van een schroef. Over een periode van 10 jaar werden 37 patiënten met recidiverende schouderluxatie behandeld volgens de Boytchev-methode. Zesentwintig patiënten (27 schouders) werden gecontroleerd bij follow-up. De resultaten van deze follow-up waren teleurstellend : het totale recidief-

percentage bedroeg 44%. Overige litteratuur omtrent deze, op het eerste gezicht aantrekkelijke techniek, is schaars en de meningen sterk uiteenlopend.

RÉSUMÉ

H. L. DALSGAARD, C. B. GØTHGEN, M. J. HOOGMARTENS. L'opération de Boytchev dans le traitement de la luxation antérieure récidivante de l'épaule : une technique controversée.

Dans la technique de Boytchev, les tendons du muscle coraco-brachial, du muscle court biceps, et du muscle petit pectoral sont passés, avec leur insertion osseuse proximale, derrière le muscle sous-scapulaire, après quoi ils sont réinsérés sur l'apophyse coracoïde à l'aide d'une vis. Pendant une période de dix ans, 37 patients présentant une luxation antérieure récidivante de l'épaule ont été traités par la technique de Boytchev. Les auteurs décrivent rétrospectivement une série de 26 patients (27 épaules) dont le résultat est décevant : 44% de récidives. Les données de la littérature concernant ce sujet sont très limitées et extrêmement divergentes.