

ARTHROSCOPIC TRANSGLENOID SUTURE OF BANKART LESIONS

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Arthroscopic transglenoid suture of Bankart lesions was performed in 31 patients from 1988 to 1992. The diagnosis in all patients was recurrent traumatic anterior luxation, and a Bankart lesion was found in all cases. Mean time for clinical follow-up was 43 months (ranging from 25 to 76 months). A telephone review of all cases was obtained two years later.

Five patients experienced postoperative wound problems posteriorly, where the sutures were tied over the fascia of the infraspinatus. One transient suprascapular nerve palsy was seen. There was a recurrence of complete dislocation in eight patients, while six patients had had repeated subluxations (total failure rate of 45.1%). Sixteen patients (51.6%) were assessed as having good to excellent results according to the Rowe scoring system. A slight loss of external rotation was found in six cases. Seventeen patients (54.8%) were able to return to their pre-injury level of athletic activity.

Due to the high failure rate, we do not recommend arthroscopic transglenoid suture of Bankart lesions in patients with recurrent traumatic anterior dislocations.

Keywords : shoulder dislocation ; Bankart lesion ; arthroscopy.

Mots-clés : luxation d'épaule ; lésion de Bankart ; stabilisation arthroscopique.

INTRODUCTION

Traumatic anterior glenohumeral instability is a common clinical problem that can be diagnosed easily by history and physical examination. Avulsion of the glenohumeral ligament-labrum complex from the glenoid is the pathophysiological mechanism in the vast majority of traumatic anterior dislocations of the shoulder (1). Open procedures to repair Bankart lesions have been well described and used for decades (2). Since the introduction of the arthroscope, several authors have developed

techniques to stabilise glenohumeral joints arthroscopically (5, 9, 12, 19, 20). One of the first techniques was the use of a metal staple to secure the capsulolabral complex (9). Unfortunately the metal implant placed inside the joint created problems. Morgan and Bodenstab, in 1987, developed a procedure in which the Bankart lesion was repaired arthroscopically with a transglenoid suture (12). The present study was designed to assess the results of this technique.

MATERIAL AND METHODS

Only patients with a firm notion of trauma, recurrent dislocations, and unidirectional anterior instability were included in this study. Patients with subluxations were excluded. Thirty-three patients were thus followed for 25 to 76 months (mean, 43 months). They underwent arthroscopic transglenoid fixation of their Bankart lesions from 1988 to 1992. Two of these patients had moved and could not be traced, leaving 31 patients for follow-up. A telephone review was done two years later.

Of these 31 patients, 21 were males and 10 females. Their ages ranged from 14 to 31 years with a mean age of 22.5 years. Twenty patients had their dominant arm involved, and all had had at least three dislocations. Most patients had dislocated their shoulder between 6 and 10 times.

A Hill-Sachs lesions were found in all shoulders. These lesions were detected by standard radiographs or CT scan. If not, they were seen during arthroscopy as a cartilaginous lesion.

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The operative technique was based on the procedure described by Morgan and Bodenstab in 1987 (12). An examination under anesthesia was done prior to operation to assess the grade and direction of the instability. The patient was then turned to the lateral decubitus position, and arthroscopy performed via a posterolateral portal. After confirming that the Bankart lesion was the only significant pathology, we proceeded with Morgan's technique. At least 4 PDS sutures were placed into the anterior labrum. They were pulled through the glenoid and tied over the fascia of the infraspinatus muscle posteriorly. After the operation the shoulder was immobilised for 4 weeks and then progressive mobilisation and aggressive rotator cuff strengthening exercises were started. Contact sports were not allowed for 6 months.

Rowe's scoring system (15) was used for assessment.

RESULTS

Two kinds of complications were seen in the postoperative period. Five patients had wound problems posteriorly where the sutures were tied over the fascia of the infraspinatus. All wounds eventually healed, leaving a soft and painless scar. One suprascapular nerve palsy was noted, but the patient recovered completely after six months.

We reexamined patients clinically after a mean follow-up of 43 months. Eight patients had had a redislocation and six experienced recurrent subluxations, for a total failure rate of 45.1%.

We have 51.6% (16 patients) with good to excellent results and 48.4% (15 patients) with poor to fair results, according to the Rowe scoring system (15) (table I).

There was no correlation with age, sex, dominance of extremity and number of preoperative dislocations (tables II, III, IV & V). A slight loss of external rotation ($< 10^\circ$) was seen in 6 patients.

In the group of patients with acceptable results the rate of return to sports was high. All competitive athletes returned to their preinjury level of performance. In contrast, in the group with poor results no competitive athlete regained his previous level.

We did a telephone review two years later (mean follow-up time of 67 months). None of the patients with a good result at the first follow-up had experienced subsequent instability. Three were not

practising sports at the same level as previously, but for reasons other than their shoulder problem.

DISCUSSION

The results of this study were compared with those of the literature (table VI). Arthroscopic stabilisation with transglenoid suture was, as already mentioned, introduced by Morgan and Bodenstab (12). In their 1987 report, they had 25 patients with recurrent traumatic anterior dislocations. After a follow-up of 17 months, none recurred. In 1991, Morgan reported an extended list of patients with a recurrence rate of only 5% (13). Several authors have published acceptable to excellent results using this technique (3, 4, 10, 14, 16, 17). However starting in 1993, several studies have appeared in the literature signalling less appealing results. According to these papers, recurrence rates with this technique ranged from 27 to 49%, and were felt to be unacceptably high (table VI) (6, 7, 8, 11, 18, 21).

It is difficult to explain why these later results, including ours, are worse than those previously reported. The length of follow-up cannot be a determining factor because Walch *et al.* (18) showed that 77% of recurrences occurred within 18 months. As can be seen in table VI, the follow-up is long enough in every study.

The surgical learning curve is sometimes considered to be important in early failures. Neither in the study of Walch *et al.* (18) nor in ours did this factor seem to be valuable.

Indications have not been consistent for arthroscopic transglenoid suture. The term anterior instability is often used without specifying whether the origin is traumatic or not. Moreover, primary and recurrent dislocations are sometimes grouped

Table I. — Rowe scoring system

Excellent	11	> 51.6%
Good	5	
Fair	6	> 48.4%
Poor	9	

Table II. — Recurrence rate in relation to age

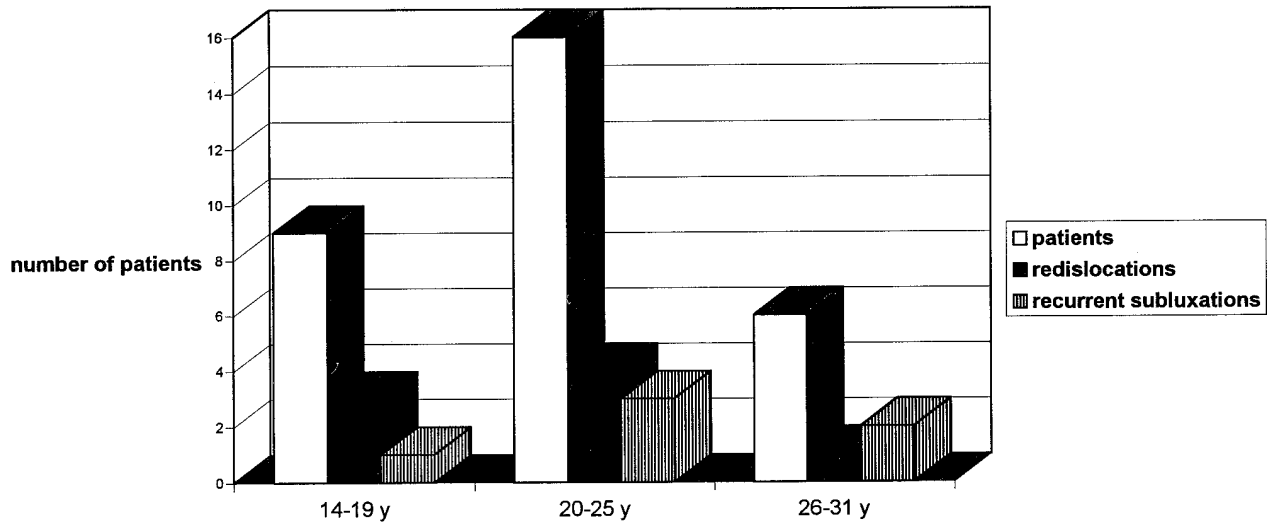


Table III. — Recurrence rate in relation to sex

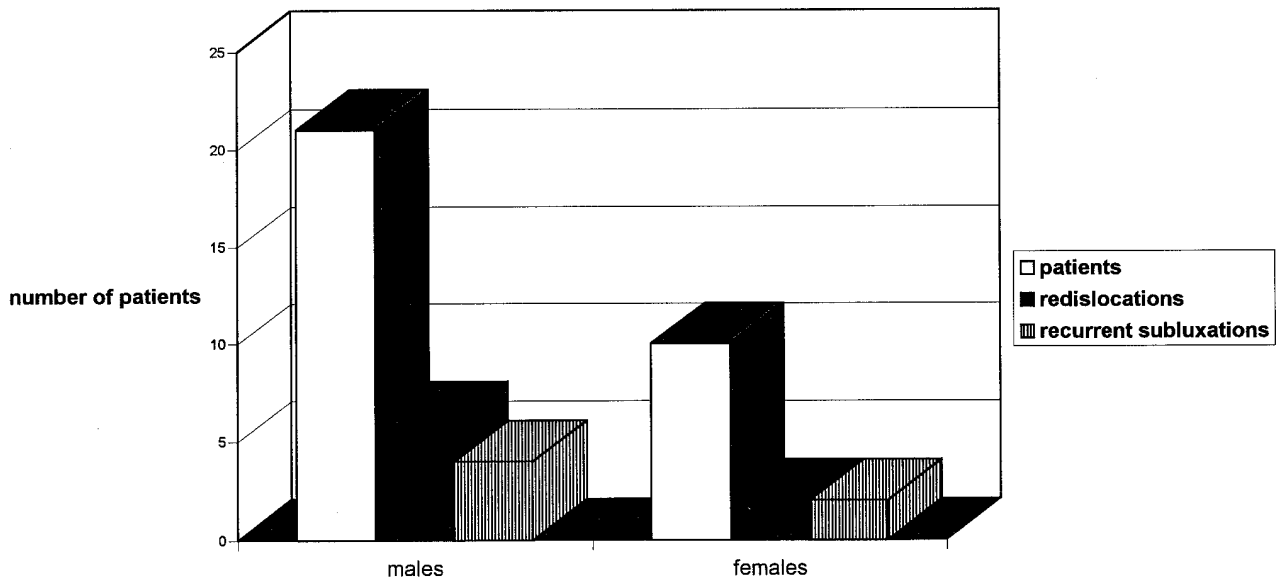


Table IV. — Recurrence rate in relation to dominance of extremity

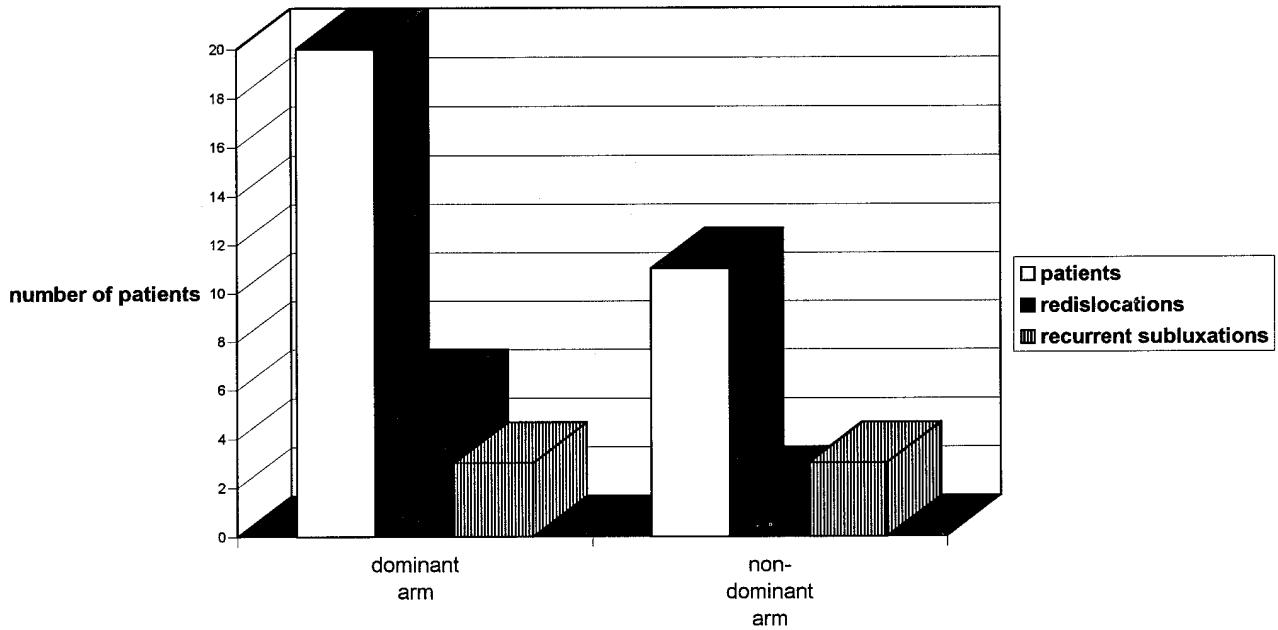


Table V. — Recurrence rate in relation to number of pre-operative dislocations

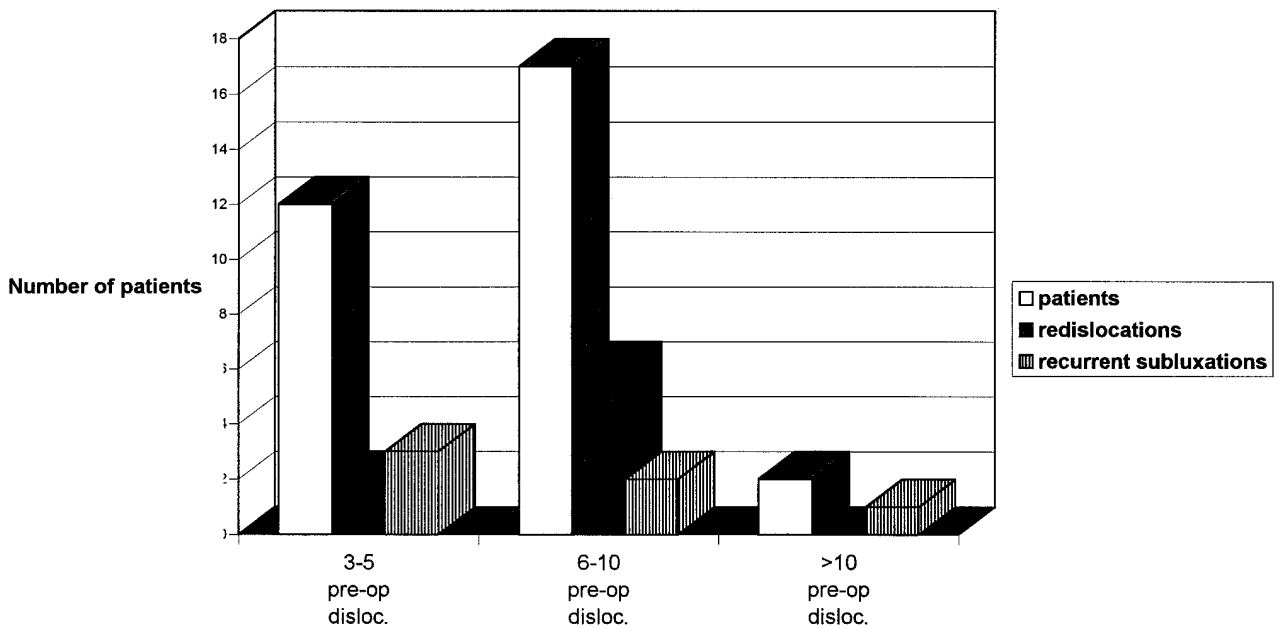


Table VI. — Review of published results
of arthroscopic transglenoid suture of Bankart lesions

	Number of cases	Indications	Follow-up (months)	Recurrence rate
Morgan 1987 (11)	25	Traumatic recurrent anterior dislocations	17	0%
Caspari 1991 (4)	49	Traumatic anterior instability	24-72	?
Morgan 1991 (12)	175	Traumatic recurrent ant. dislocations	12-84	5%
Benedetto 1992 (3)	22	14 primary ant. disloc.	29	0%
Landsiedl 1992 (9)	65	Recurrent anterior dislocations	35	13.8%
Grana 1993 (5)	27	4 acute instability 23 chronic instability	36	44%
Uribe 1993 (16)	49	Recurrent anterior instability	24	18%
Savoie 1993 (15)	136	Anterior instability	?	6%
Green 1995 (6)	47	Anterior instability	37	42%
Walch 1995 (17)	59	Recurrent anterior dislocations	49	49%
Youssef 1995 (18)	30	Traumatic anterior dislocations	38	27%
Mologne 1996 (10)	49	Traumatic anterior instability	30	41%
Guanche 1996 (7)	15	Traumatic anterior dislocations	17-42	33%
Pagnani 1996 (13)	37	Recurrent anterior instability	67	19%

together in the same study. Thus, comparisons between studies are difficult.

In most cases of traumatic instability, a true Bankart lesion (detached labrum) is responsible for the recurrent (sub)luxations, but an attenuated inferior glenohumeral ligament or a combination of both can also cause instability. In our study, all shoulders presented with Bankart lesions and we consequently repaired only the detached labrum. Perhaps this technique does not sufficiently correct the ligamentous laxity.

The preparation of the glenoid rim is another important factor that can influence the result. We used one anterior working portal, whilst we viewed the joint from the standard posterolateral portal. It was therefore occasionally very difficult to verify whether the antero-inferior part of the glenoid rim was prepared in such a way as to provide good ingrowth of the reattached labrum. This, we feel,

might have contributed to the failure of some operations.

Finally, we wish to stress that while a minimum follow-up of 2 years is required, this same interval might actually be enough to assess the results of glenohumeral stabilisation. None of our patients with good results experienced instability after a period of 24 months. Walch *et al.* (18) reported similar findings, with 81% of recurrences occurring within 24 months. Pagnani *et al.* also found no failures after 2 years (14). In conclusion, we do not recommend arthroscopic transglenoid suture of Bankart lesions due to its high failure rate.

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SAMENVATTING

K. DE MULDER, H. MARYNISSEN, C. VAN LAERE, K. LAGAE, G. DECLERQ. Arthroscopische transglenoidale hechting van Bankart letsels.

Arthroscopische transglenoidale hechting van Bankart letsels werd uitgevoerd bij 31 patienten in de periode van 1988 tot 1992. De diagnose bij elkeen was een traumatische recidiverende anterieure luxatie en een Bankart letsel werd telkens gevonden. Gemiddelde follow-up tijd was 43 maanden (minimum 25 en maximum 76 maanden). Twee jaar later werd nog een telefonische controle verricht.

Vijf patiënten hadden postoperatief problemen met de wondheling, waar de hechtingen over de fascia van de infraspinatus waren geknoopt. Een tijdelijke nervus suprascapularis uitval werd vastgesteld ; 8 patienten hadden opnieuw een volledige ontwrichting van hun schouder, terwijl 6 patienten last hadden van subluxaties (45,1% faling). 16 patienten (51,6%) werden excellent of goed bevonden volgens het evaluatiesysteem van Rowe. Een licht verlies van externe rotatie werd opgemerkt in 6 gevallen. 17 patienten (54,8%) konden opnieuw hun vroegere niveau van sportbeoefening bereiken.

Omwille van dit hoge falingspercentage raden wij een arthroscopische transglenoidale hechting van Bankart letsels af bij patienten met traumatische recidiverende anterieure luxaties.

RÉSUMÉ

K. DE MULDER, H. MARYNISSEN, C. VAN LAERE, K. LAGAE, G. DECLERQ. Suture transglenoïdienne arthroscopique des lésions de Bankart.

La suture arthroscopique transglenoïdienne des lésions de Bankart a été réalisée chez 31 patients entre 1988 et 1992. Le diagnostic de luxation antérieure récidivante post-traumatique a été posé chez tous les patients ; une lésion de Bankart a été confirmée chaque fois. Le suivi

moyen est 43 mois (allant de 25 à 76 mois). Un contrôle téléphonique a été réalisé deux années après.

Cinq patients ont présenté dans le post-opératoire immédiat une inflammation superficielle au niveau de l'abord postérieur par lequel les sutures avaient été appuyées sur le fascia du sous-épineux. Une paralysie transitoire du nerf sus-scapulaire a été notée dans un cas. On déplore une récurrence de luxation antérieure de l'épaule chez 8 patients et des épisodes de subluxation

chez 6 patients (échec total de 45,1%). Seize résultats (51,6%) furent classés excellents ou bons selon l'échelle de Rowe. Un déficit minime de rotation externe persiste chez 6 patients. Dix-sept patients (54,8%) ont récupéré leur niveau sportif pré-traumatique.

Vu l'incidence élevée d'échecs, nous déconseillons la suture transglénoïdienne arthroscopique des lésions de Bankart en cas de luxations antérieures récurrentes traumatiques.