A SURGICAL APPROACH FOR THE REPAIR OF LARGE TEARS OF THE ROTATOR CUFF

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The authors report a transacromioclavicular approach with conservation of a digastric deltotrapezial flap which provides a wide exposure and facilitates the repair of large tears of the rotator cuff.

Keywords : shoulder ; rotator cuff tear ; acromioclavicular joint.
Mots-clés : épaule ; rupture de la coiffe des rotateurs ; articulation acromio-claviculaire.

Thorough visualization of large tears of the rotator cuff is mandatory for adequate surgical treatment. Resection of the acromioclavicular joint that yields wide access to the injured area is used when there is dull aching pain or evidence of radiological degeneration. Subperiostal dissection of the acromioclavicular, deltoid and trapezial insertions liberates a digastric flap which can be pulled and attached to the glenoid, thus protecting and reinforcing the frayed rotator cuff.

TECHNIQUE

The patient is placed in the sitting position, and the arm draped free. An S-shaped incision is made from the lateral aspect of the neck on the prominence of the upper trapezius, across the acromioclavicular joint and along the upper fibres of the deltoid. The medial edge of the skin incision is separated from the deltoid aponeurosis, thereby allowing free access to the deltopectoral groove where the coracoacromial ligament is tagged with a suture, detached from the coracoid process and saved for subsequent reinforcement of the flap. Two parallel lines are made with the electrocautery knife on either side of the joint to mark the clavicular and acromial osteotomy sites. The fibres of both the trapezius and the deltoid are then split 3 to 4 cm above and below the anterior margin of the acromioclavicular joint (fig. 1). Finally, the anterior acromion and the lateral extremity of the clavicle are osteotomized with a Gigli saw. The

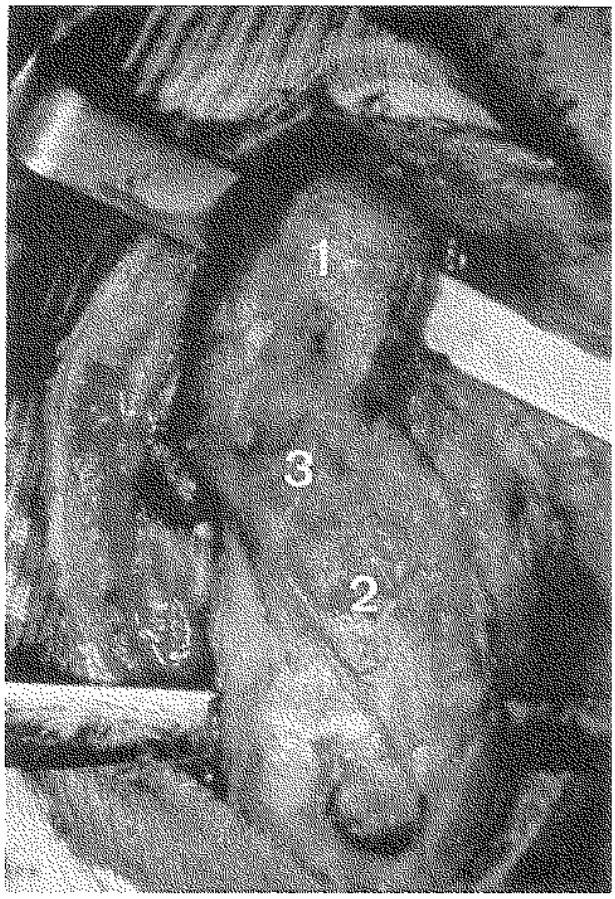

Fig. 1. — Dissection of the delto (1)-trapezial (2) flap containing the acromioclavicular joint (3).

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"digastric" deltotrapezial flap which is approximatively 4 cm wide and 6 cm long including the acromioclavicular joint, is carefully dissected free from the underlying structures. Prior to completion of this dissection, the coracoacromial stump is brought from under the anterior deltoid and kept attached to the deep surface of the flap. The remaining anterior acromion is then beveled using Neer's technique, and the articular stump is burred off with an electric drill. While one assistant holds a retractor between the acromion and the humeral head and another exerts downward traction on the forearm, the free digastric flap is pulled backward and forward, thus permitting visualization of the region and subsequent repair (fig. 2).

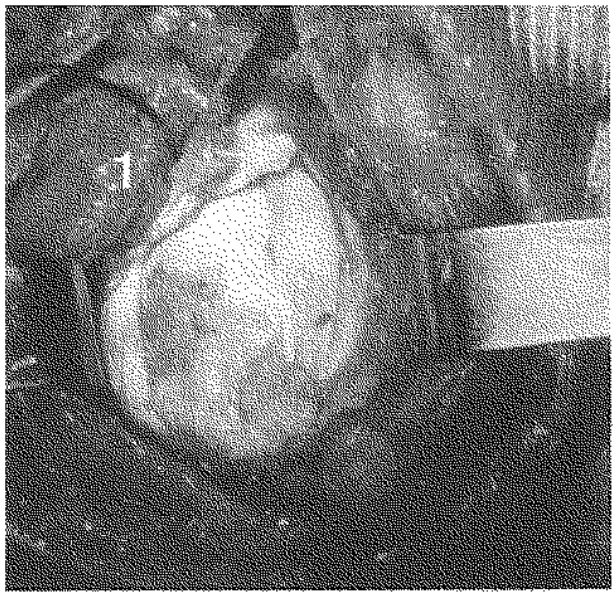

Fig. 2. — Exposure of a large rupture of the rotator cuff by pulling backward the deltotrapezial flap (1).

The acromial and clavicular ends are dissected away subperiosteally from the soft tissues of the flap. The fragile capsuloaponeurotic junction between the trapezius and the deltoid is reinforced by suturing the coracoacromial ligament to the deep surface of the flap. The latter is then shifted downward to the repaired cuff and fastened above the glenohumeral joint either by stapling it to the supraglenoid process of the scapula (fig. 3) or by suturing it firmly to the upper rim of the glenoid and the labrum. When no neighbouring tendon can be transferred or excised to patch the cuff defect and an artificial graft is not desired, the flap can be spread and sutured to the edges of the cuff defect (fig. 4). Ideally however, the flap is used to strengthen rather than provide continuity to the cuff. The skin is then closed over 2 suction drains which are removed after 48 hours. Physical

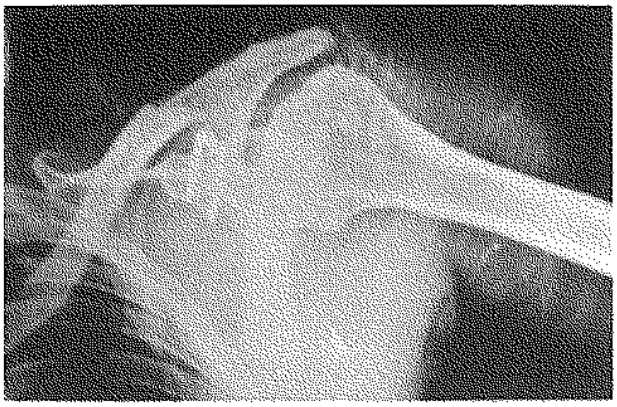

Fig. 3. — Stapling of the deltotrapezial flap to the upper rim of the glenoid.

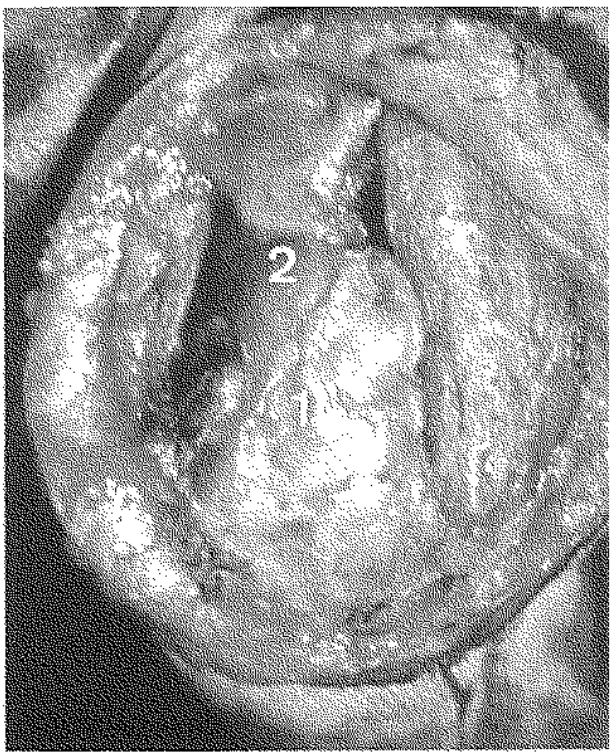

Fig. 4. — Rerouting of the deltotrapezial flap (1) after reattachment to the labrum (2).

therapy is started using upward movements from a resting position with the aid of an abduction wedge, which is gradually lowered and completely withdrawn 6 weeks following surgery.

DISCUSSION

The transacromial approach with joint resection and standard excision of the acromial arch gives wide exposure to large rotator cuff tears (4, 5). Use of a continuous deltotrapezial flap offers several advantages (2). First, it permits thorough exploration of the region, as it can be swung both forward and backward over the cuff. Second, since the trapezius, the deltoid, and the supraspinatus. are synergists in abduction of the arm (1, 3, 6), the flap secured to the upper rim of the glenoid can rotate the scapula as well as abduct the arm. Finally, while sutures often rip out of the cuff, the flap that is solidly anchored to the glenoid both thickens the frayed tendons and reinforces the cuff.

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SAMENVATTING

H. MESTDAGH, P. URVOY en E. BUTIN. Chirurgische benadering voor herstel van grote scheuren van de rotatoren-cuff.

Frekwent kunnen exploratie en hechting van uitgebreide rupturen van de rotatoren-cuff alleen uitgevoerd worden na resectie van het acromio-claviculair gewricht. De auteurs gebruiken hierbij een digastrische flap, gepreleveerd op deltoideus en trapezius, die naar distaal verplaatst wordt op de rotatoren-cuff, zodanig dat de gehechte streek beschermd wordt en de abductiekracht versterkt wordt.

RÉSUMÉ

H. MESTDAGH, P. URVOY et E. BUTIN. Présentation d'une technique de réparation des ruptures étendues de la coiffe des rotateurs.

L'exploration et la réparation des ruptures étendues de la coiffe des rotateurs nécessitent fréquemment la résection de l'articulation acromio-claviculaire. Les auteurs y associent l'individualisation d'un lambeau digastrique trapézo-deltoïdien continu qui, abaissé au contact de la coiffe, protège la zone réparée et renforce sa fonction d'abduction du bras.