Operation of Du Toit/Roux for Recurrent Anterior Dislocation of the Shoulder

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Summary

Objectives
Restoration of stability and function of the shoulder.

Indications
Recurrent posttraumatic anterior shoulder dislocation with detachment of the anterior part of the labrum and the capsule.

Contraindications
Absence of detachment of anterior soft tissues in patients with habitual dislocation or multidirectional instability.
Big Hill-Sachs lesion.
Poor local skin conditions.
Poor general health.

Surgical Technique
Anterolateral deltopectoral approach. External rotation and exposure of the tendinous part of the subscapularis which is cut in a tongue shaped fashion. Exposure of the detachment of labrum and capsule at the scapular neck. After freshening of the rim of the glenoid labrum and capsule are fixed there with a staple. Suture of the capsule. Reattachment of the subscapularis. Wound closure in layers. Immobilization in a shoulder-arm bandage (Gilchrist). Early functional after treatment.

Results
Clinical and radiological follow-up of 48 out of 55 operated patients after a mean of 2.8 years (1 to 10 years). Of this group 20 patients filled in a questionnaire after 11 to 12 years. The incidence of early recurrence was 2% and of late recurrence 5%. An excellent to good subjective result was reported by 90% of the patients, even at the longer follow-up.

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**Surgical Principles and Objective**

Restoration of anatomy and function of the shoulder through closure of the anterior soft tissue defect with the help of staples according to a modified technique of Du Toit/Roux [2].

**Advantages**

Reinsertion of the anterior soft tissue to the glenoid rim [1, 8] reestablishes the contact of the joint capsule with the anterior border of the glenoid. It prevents a locking over the rim of the glenoid by the Hill Sachs defect [4, 5].

Advantages over other surgical methods: technically simple procedure as the surgical steps performed in the depth of the approach are limited to the insertion of the staple into the anteroinferior rim of the glenoid.

Advantages over an arthroscopic procedure: creation of a solid anterior fibrotic scar reducing the incidence of recurrence.

If needed, a capsulorrhaphy and a tightening of the subscapularis tendon can be done.

The stable fixation of the capsule allows immediate postoperative exercises. For this reason the technique can also be used in patients suffering from epilepsy.

The decrease in shoulder mobility is negligible and concerns exclusively the external rotation.

**Disadvantages**

Loosening of the staple which may require its removal.

Staple cannot be used in patients with metal allergies.

**Indications**

Recurrent anterior shoulder dislocation with persistent detachment of the capsule from the glenoid rim or redundancy of anterior tissues. An adequate trauma as well as the need for assistance in reducing the first dislocation make such a detachment suspect; it should be confirmed by CT-arthrography or magnetic resonance imaging.

**Contraindications**

Absence of soft tissue detachment or redundancy in instances of habitual dislocation, or multidirectional instability.

Hill-Sachs defect greater than a third of the humeral head circumference.

Voluntary dislocation.

Usual contraindications such as ill health and poor skin conditions.

**Patient Information**

Postoperative hemorrhage.

Implant made from titanium alloy: allergy?

Loosening and migration of staple, possible need for removal.

Risk of nerve injury (musculocutaneous or axillary nerve).

Length of postoperative care including absence from work for blue collar workers: approximately 6 weeks.

Limitation of motion of shoulder joint.

Risk of joint infection with possible need for revision.

Incidence of recurrence < 5%.

**Preoperative Work Up**

CT arthrography or magnetic resonance imaging to document detachment of soft tissue or redundancy.

Anterior-posterior and axial radiographs and tangential film with the arm in 60° of internal rotation to assess the size of the Hill-Sachs lesion.

**Surgical Instruments**

- Shoulder set.
- Straight chisel, 10 mm wide.
- Staples, 13 × 15 mm (Titanium).