

Roger Hackney, Fragkiskos N. Xypnitos,  
and Peter V. Giannoudis

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## Indications

- Rockwood and Tossy classification grades 4–6. Type 3 does no better with surgery than with conservative treatment.
- Chronic pain after at least 9 months of conservative treatment.
- In my experience, many failures of conservative treatment were not type 3.

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## Preoperative Planning

### Clinical Assessment

- History of discomfort and reduced shoulder function, grating and grinding plus dissatisfaction with the cosmetic appearance.

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R. Hackney (✉)  
Department of Trauma and Orthopaedic Surgery,  
Leeds Teaching Hospitals NHS Trust,  
Leeds, UK  
e-mail: roger.hackne@leedsth.nhs.uk

F.N. Xypnitos  
Department of Trauma and Orthopaedics,  
Leeds Teaching Hospitals NHS Trust,  
Leeds, UK

P.V. Giannoudis  
Academic Department of Trauma and Orthopaedic Surgery,  
School of Medicine, University of Leeds,  
Leeds, UK

- Examination shows a displaced lateral end of clavicle that may or may not be reducible.

## Radiological Assessment

- Plain AP radiographs will demonstrate the degree of vertical displacement and any coexisting fracture (Fig. 2.1).
- Calcification of the coracoacromio ligament will be demonstrated.
- Plain AP films do not give an idea of the degree of posterior displacement that often gives rise to an unsatisfactory result from conservative treatment.
- I do not use the classic weight-bearing film, preferring clinical examination.

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## Operative Treatment

### Anesthesia

- General anesthesia with interscalene block.
- Hypotensive anesthesia.

## Table and Equipment

- Basic instruments, plus retractor, osteotomes, drill, saw, specific instrumentation for artificial implant, and AO small fragment set.



**Fig. 2.1** AP radiograph demonstrating the degree of vertical displacement and a co-existing fracture

### Table Set up

- Instruments the same side as the surgeon within the clean air environment.

### Patient Positioning

- Shoulder table with positioner, e.g., Mayfield head ring or Schlein support.
- Patient is semi-reclined with the arm by the side.

### Draping and Surgical Approach

- Prepare the skin and use a U-drape to shut off the operative field.
- An iodine-soaked swab is left in the axilla. A Ioban is used.
- A sabre or bra-strap incision is made 1–2 cm medial to the lateral end of the clavicle, extending halfway to the coracoid.
- Skin flaps are raised above the clavipectoral fascia.
- A T incision is made on the clavicle, based on the lateral end, with subperiosteal elevation of muscle, fascia, and capsule.
- The remaining capsule/scar attached to the clavicle is dissected free.



**Fig. 2.2** The coracoacromial ligament is harvested on a 0.5 cm cubed piece of acromion, which is then held with a 5 ethibond suture

- Using two Trethowan retractors to protect underlying tissues, the lateral 1–2 cm of the lateral ends of the clavicle are removed with a saw.
- The coracoacromial ligament is palpated under the deltoid and dissected free to the edge of the acromion.
- A small osteotome is used to harvest the ligament on a 0.5 cm cubed piece of acromion, which is then held with a 5 ethibond suture (Fig. 2.2).
- A number of devices are commercially available to provide reconstruction of the coracoacromial ligaments. Become familiar with one.
- The coracoid is then approached by the deltopectoral groove, preserving the cephalic vein.
- A pair of curved clips, such as Lahey's, is then used to define a passage between the conjoined tendon and pectoralis minor, allowing the insertion of a finger, palpating the undersurface of the coracoid.
- The guide drill for the device can then be passed safely through clavicle then into or around the coracoid.



**Fig. 2.3** The 5 ethibond suture is passed through the hole in the superior cortex of the clavicle and the bone on the end of the coracoacromial ligament secured into the cavity in the clavicle as the suture is tied



**Fig. 2.4** A suture fixation can be used for additional support to the repair

- The device is tightened and the clavicle reduced.
- A pair of nibblers is used to excavate a cavity in the medulla of the clavicle. A small drill or bone awl is used to make a hole in the superior cortex of the clavicle. The needle of the 5 ethibond suture is passed through this, and the bone on the end of the coracoacromial ligament is secured into the cavity in the clavicle as the suture is tied (Fig. 2.3).
- An additional partially threaded cancellous screw, a Bosworth type screw, with a washer or a suture fixation (Fig. 2.4) can then be used for additional support to the repair. This is used for patients who may not comply with the postoperative instructions, but does require a second operation for removal of screw at 6 weeks.
- The capsule of the reconstructed joint and the clavipectoral fascia are closed with 1 ethibond. Fat is closed with Vicryl.
- A subcuticular stitch is used for skin.

## Postoperative Rehabilitation

- A sling is worn for up to 6 weeks depending upon the reliability of the patient.
- No heavy lifting, pushing or overhead activity is permitted for 6 weeks.

## Follow-up

- It is advisable that the patient will be followed for the next, 2, 4 weeks, and the following 3 and 6 months prior to discharge.

## Further Reading

- Lafosse L, Baier GP, Leuzinger J. Arthroscopic treatment of acute and chronic acromioclavicular joint dislocation. *Arthroscopy*. 2005;21(8):1017.
- Ogilvie-Harris DJ, D'Angelo G. Arthroscopic surgery of the shoulder. *Sports Med*. 1990;9(2):120–8.

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