

Background Healing of rotator cuff tendons is still a challenge especially in the elderly population. Failure rate of rotator cuff repairs (RCR) is still high (25–70%); augment patches may provide both a structural and a biological support.

Methods: Between 2014 and 2016, 45 patients with large-massive rotator cuff tears were prospectively enrolled in the study. They all underwent arthroscopic double-row RCR with extracellular porcine dermal matrix augmentation. At 1-year, an MRI scan was performed to assess integrity of the repair. Oxford Shoulder Score (OSS), Constant Score (CS) and Visual Analogue Scale (VAS) pain score were used preoperatively and at 3, 6, 12-month follow-up. Minimum follow-up: 1-year.

Results: Patients mean age was 70 (53–81). MRI scans performed at 1-year showed 7 rotator cuff tears out of 34 patients (20%). Both mean CS and OSS improved postoperatively at 3, 6 and 12-month, with statistically significant improvement ($p < 0.01$) already at 3-month. Range of movement significantly improved: mean abduction improved from $95.8^\circ (\pm 33.3^\circ)$ to $161.8^\circ (\pm 21^\circ)$ ($p < 0.05$); mean forward flexion from $107^\circ (\pm 37^\circ)$ to $165.9^\circ (\pm 24.3^\circ)$ ($p < 0.05$). The pain also decreased significantly postoperatively ($p < 0.01$). No complications or adverse reactions were observed.

Conclusions: This study showed a healing failure rate of 20%, which is low compared to what is described in the literature for standard rotator cuff of large-massive tears in similar patient age groups to ours. Augmented patches were shown to be a safe and reliable support to RCR for large-massive tears. Patients recovered good shoulder function and returned to their daily life activities with good control of pain.

MID-TERM SURGICAL RESULTS OF PROXIMAL ULNAR AND RADIAL FRACTURE-DISLOCATIONS CLASSIFIED AND TREATED WITH A NEW COMPREHENSIVE CLASSIFICATION SYSTEM



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Aim: The aim of this study was to analyse the mid-term clinical results of a large sample of patients with complex fracture-dislocations of the proximal ulna and radius classified and treated with a new diagnostic and therapeutic classification system in order to assess its clinical usefulness.

Background: Complex fracture-dislocations of the proximal ulna and radius (i.e. trans-olecranon fracture-dislocations and “Monteggia-like lesions”) represent a challenge even for expert orthopedic surgeons. A new comprehensive classification, the “Proximal Ulnar and Radial Fracture-Dislocation Comprehensive Classification System (PURCCS)”, was recently proposed with a detailed diagnostic and therapeutic algorithm.

Methods: We studied 66 patients (67 elbows) with a mean age of 57 years. All patients were classified with the PURCCS by use of standard radiography, computed tomography, and intraoperative fluoroscopy. Surgical treatment was performed according to the PURCCS therapeutic algorithm. Patients were evaluated clinically and radiographically after a mean of 71 months of follow-up (range, 6–156). The clinical evaluation was performed with the MEPS, DASH-score and the m-ASES.

Results: Each pattern of fracture-dislocation in our series found its own position within the PURCCS. At the last follow-up, the mean MEPS, DASH-score and m-ASES were 95.4, 8.52 and 100, respectively. The mean extension, flexion, pronation, and supination were 14° , 138° , 81° , and 78° , respectively. According to the MEPI, 88%, 9% and 3% of cases were rated as excellent, good and fair, respectively. Reintervention rate for major complications was 14% (2 proximal R-U synostosis, 2 elbow stiffness and 5 nonunion). A slight or moderate osteoarthritis was observed in 29% of patients.

Conclusions: The surgical treatment of complex fracture-dislocations of the proximal ulna and radius is effective when the main lesions of each injury pattern are treated adequately. This study showed satisfactory clinical results in the majority of cases, with few major complications and reinterventions. The PURCCS helps to identify the main lesions and its therapeutic algorithm helps to select the correct surgical treatment. The PURCCS is a comprehensive classification that may contribute to the surgical management of these difficult injuries.

THE NEW FULL ARTHROSCOPIC REVISION TECHNIC AFTER LATARJET PROCEDURE



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Aim: Aim of the study is improve the results of revisions after coracoid transfer procedure.

Background: The Latarjet procedure is method of choice in case of glenoid bone loss and anterior inferior instability or revision procedures. However, recurrence after this procedure is possible. One of the methods for the revision after Latarjet procedure is Eden-Hybinette technique. The recurrence after this bone grafting procedure is described too. One of the reasons of recurrence is graft resorption and capsular deficiency. Long head of biceps transfer for capsular reinforcement was described by several authors and can improve the results.

Methods: We describe a full arthroscopic revision technic after Latarjet procedure, which consists of transposition of the long head of the biceps together with bone block through subscapular split. Tips, tricks and step by step technic are presented.

Results: The early results of first 3 cases are described. After 3 months bone and tendon healing is confirm on MRI and CT. Full range of motion, absence of apprehension and biceps pain was reached at 6 months.

Conclusions: The arthroscopic transposition of bone block together with long head of biceps through the subscapular split like in initial Latarjet procedure can be perspective surgical treatment option for recurrence after coracoid transfer.

THE ANATOMY AND VARIATION OF THE SUBCLAVIUS MUSCLE, ITS CORACOID ATTACHMENT, AND RELATION TO THE CLAVI-CORACO-AXILLARY APONEUROSIS



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Aim: To describe the anatomy of the subscapularis muscle (SM) and the lateral aponeurotic extension of the pars paramuscularis (the medial coracoclavicular ligament, MCCL) and its attachment to the coracoid in relation to the clavi-coraco-axillary aponeurosis (Testut, 1904).

Background: During a surgical anatomy programme conducted at the Division of Clinical and Functional Anatomy at the Medical University of Innsbruck we noted additional fibrous structures contiguous with, and extending from, the SM epimysial fascia inserting into the base, medial margin and tip of the CP. This observation, suggested (1) that anatomical variations of the coracoid insertion of the SM are more common than previously reported, and (2) that the function of the SM is more subtle than simply that of stabilising the clavicle at the sternoclavicular joint. Furthermore, the fact that the SM has a discrete nerve supply supports the notion that the SM has (or had) a more important role in the function of the upper extremity than conventionally considered.

Methods: Embalmed human cadavers, preserved using an arterial injection of a formaldehyde-phenol solution and immersion in phenolic acid in water for one to three months, were used. The bodies were donated to the Division of Clinical and Functional Anatomy at the Medical University of Innsbruck, Austria, following pre-mortem informed consent for their use in scientific studies. 52 upper extremities (26 bodies; 14 male; mean age 78 years (range: 58–93)) were dissected to demonstrate the SM, including variants of the muscle and its attachments to the coracoid. The nerve to subclavius was dissected (in 44 of the 52 specimens), while the artery was dissected in 19 specimens.

The following dimensions were measured: (1) the axial (apparent) length of the clavicle (from the anterior rim of the sternal facet of the clavicle in the midline of the shaft to the anterior rim of the acromial facet in the midline of the shaft); (2) the (real) length of the clavicle measured between the two points given but on the external surface. An estimation of overall curvature of the clavicle was calculated by comparison of the two length measurements expressed as a ratio, a larger ratio being indicative of greater overall curvature (medial antecurve and lateral retrocurve combined) of the clavicle; (3) The overall length of the SM (muscular part and fibrotic extension) was measured from the lateral extent of its origin on the first rib to (a) the coracoid and (b) the lateral end of the insertion in the sulcus m. subclavii; (4) the length of the insertion of the SM in the sulcus M subclavii; (5) the distance from the origin of the SM on the first rib at which the nerve to subclavius entered the muscle; and (6) the distance, as defined for the nerve, at which the artery to the muscle entered the muscle where this was possible. Measurements were recorded to the nearest millimetre. Variations in the extent and dimensions of