KEY PROCEDURES

PRIMARY LIGAMENT REPAIR FOR ACUTE ELBOW DISLOCATION

Adam C. Watts, MBBS, BSc

Published outcomes of this procedure can be found at: *J Orthop Surg Res.* 2015 Aug 20; 10:128, *J Hand Surg Am.* 2015 Mar;40(3):515-9, and *Knee Surg Sports Traumatol Arthrosc.* 2017 Jul;25(7):2271-9.

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Abstract

The elbow is the second most common site for joint dislocation after the shoulder. Elbow dislocations are classified according to the direction of dislocation, with most (80%) being posterolateral. A spectrum of soft-tissue injury may also be present, depending on the direction of dislocation and the energy applied. Most dislocations of the elbow can be treated nonoperatively, but recurrent instability and/or stiffness occur in up to 10% and 40% of patients, respectively. The aim of early surgical stabilization is to prevent these long-term complications. To avoid overtreatment, magnetic resonance imaging is used to identify patients at a greater risk of complications by determining the grade of soft-tissue injury. Those with grade-3 or 4 injuries are managed with fluoroscopic examination under anesthesia. (1) The patient is positioned supine. Fluoroscopic examination is performed with the elbow in full extension and in 30° of flexion. Varus stress is applied with the forearm in pronation. If >10° of joint opening is found, open surgical repair of the lateral ligament complex and common extensor origin is performed. (2) A 5-cm incision is made using a direct lateral approach centered on the lateral epicondyle. The tough lateral fascia may be intact and should be incised in line with the anconeus interval. (3) A rent in the common extensor origin may be found, which can be used for the approach; otherwise, proceed with a Kocher approach to identify the sleeve avulsion of the lateral ligament complex from the humerus. (4) A number-2 synthetic braided suture is used to whip-stitch the lateral ulnar collateral ligament, which is repaired to the lateral epicondyle with use of a bone anchor. The trailing suture ends from the anchor are used to repair the common extensor tendon origin with use of a Mayo needle. (5) With the forearm in supination to externally rotate the humerus and lock the shoulder, valgus instability is assessed with the elbow in full extension and in 30° of flexion. If the medial joint line opens >10°, repair the medial structures in the same manner as the lateral ligament complex through an incision posterior to the medial epicondyle while protecting the ulnar nerve. (6) The patient is referred to physiotherapy for immediate hourly overhead exercises. This

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approach should prevent complications of recurrent instability or stiffness, as early results have been encouraging with no complications recorded.

Adam C. Watts, MBBS, BSc¹

¹Wrightington Hospital, Wigan, United Kingdom

E-mail address: adam.watts@elbowdoc.co.uk

ORCID iD for A.C. Watts: [0000-0003-0795-6462](https://orcid.org/0000-0003-0795-6462)

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