

**Medial Collateral Ligament Repair Is Rarely Necessary in Terrible Triad Fracture-Dislocations**

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**Purpose:** Indications for medial collateral ligament (MCL) repair in terrible triad fracture-dislocations have been proposed but not validated. Biomechanical research suggests that most MCL injuries can be treated nonoperatively if the articular structures and lateral collateral ligament (LCL) are repaired or reconstructed. However, this has not been widely accepted in clinical practice. At our institution, the MCL is not directly addressed unless the elbow remains unstable in full extension and supination after the radial head, coronoid, and lateral ligamentous structures have been addressed. The purpose of this study was to determine the incidence of injuries requiring MCL repair using this protocol and assess rates of late instability following surgical management of terrible triad fracture-dislocations with or without MCL repair.

**Methods:** The records of all patients treated surgically for an elbow fracture-dislocations consisting of a nonreconstructable radial head fracture, coronoid fracture, and posterolateral elbow instability between 2005 and 2016 were reviewed. MCL repair was only considered if a lateral fluoroscopic view in full extension and supination showed residual instability following reconstruction of the articular surfaces and LCL. Patients were included if they had at least 6 weeks of clinical and radiographic follow-up. Late instability, defined as repeat dislocation, nonconcentric ulnohumeral reduction on follow-up radiographs, and/or return to the operating room for instability, was recorded.

**Results:** 21 patients met inclusion criteria, with a mean of 13 months follow-up (range, 1.6-70.3). Two patients required a medial approach for removal of an intra-articular fragment; one of these also had a medial soft-tissue repair without MCL reconstruction given that the exposure was already done. No patients had sufficient instability on intraoperative post-fixation stress view to prompt MCL repair. There were no cases of late instability using this protocol.

**Conclusion:** Surgical treatment of terrible triad fracture-dislocations involves restoration of the articular anatomy with radial head reconstruction or replacement, coronoid fixation or anterior capsular repair, and repair or reconstruction of the LCL and lateral soft tissues. With stable repairs of these points of instability and a standardized post-fixation stress view to rule out persistent posterolateral rotatory instability, MCL injuries can be treated nonoperatively in the vast majority of patients.