

## Do Scapular Body Fractures Need Follow-up? In Large Series of Scapula Fractures, No Late Conversions to Surgery

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**Purpose:** Scapular fractures are uncommon injuries often associated with high-energy trauma and thoracic injury. These injuries most commonly involve the scapular body and have been traditionally managed nonoperatively. There is scant evidence or large clinical series of scapula fractures to guide surgeon treatment recommendations as these injuries rarely require surgery and often do not follow up with orthopaedic surgeons. The purpose of this study was to evaluate a large series of extra-articular scapular fractures and determine the rate of long-term complication and conversion to surgical treatment.

**Methods:** This was a retrospective cohort study of all scapula fractures (OTA / AO 14F) treated at a single Level I institution over an 8-year study period. All patients with available plain film radiographic and CT images were included. Review of medical records and imaging was performed to determine demographic data and measure glenopolar angle (GPA), scapular angulation, medialization, associated injuries, fracture morphology, and clinical course.

**Results:** 379 patients were included in this study (average age of 44 years, 76% male). 6.5% of cases had an associated humerus fracture, 26.9% had clavicle fractures, 60% had pulmonary trauma, 59% had rib fractures, and 29.6% had spine fractures. Mean medialization was 3.8 mm (standard deviation [SD] 6.6, scapular angulation was 7.5° (SD 13.3), and GPA was 39.7° (SD 7.4). 35% of fractures involved the scapular spine, 2% the acromion, and 10.5% the coracoid. Kellgren-Lawrence scores were low (77% of 0, 3.4% of 1, 9.2% of 2, 2.5% of 3). 39 patients had intra-articular glenoid fractures, 17 patients were managed operatively with open reduction and internal fixation. No patients who were initially managed nonoperatively with weightbearing as tolerated in a sling converted to surgery during the follow-up period.

**Conclusion:** In this large series of scapular fractures, no patient initially managed without surgery was converted to surgical intervention. Despite a large and varied number of associated injuries, patients may not require routine radiographic follow-up.