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Original Article

Intra-articular scapular fractures: Outcomes after internal fixation



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ABSTRACT

Background: Although operative treatment may offer an appropriate management option for displaced glenoid fractures, there is sparse research assessing post-operative functional outcomes. This study assessed functional outcomes of patients after undergoing open reduction and internal fixation of displaced glenoid fractures.

Methods: Fifteen patients were treated with open reduction and internal fixation for displaced intra-articular fractures between 2005 and 2010. The indication for operative fixation was intra-articular displacement >4 mm. Post-operative functional outcomes were assessed via retrospective chart review. Evaluation included review of pre-operative imaging for fracture type, review of post-operative plain radiographs for fracture healing, Disabilities of the Arm Shoulder and Hand (DASH) and American Shoulder and Elbow Surgeon Assessment (ASES) scores at last follow-up.

Results: At a mean follow-up of 49 months (24–87 months) all patients had radiographic healing. The mean DASH score was 10 (range 0.83–29.17). Mean ASES score was 90 (range 41.7–100). No patients had evidence of hardware failure or infection.

Conclusions: Open reduction and internal fixation of displaced intra-articular glenoid fractures results in stable fixation and is associated with good functional outcome.

Level of evidence: Level IV. Case series.

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1. Introduction

Scapula fractures are rare injuries accounting for 1% of all fractures¹ and often occur in the setting of high-energy trauma.^{2,3} With typical high-energy mechanism of injury, scapula fractures often present with associated injuries (up to

88%) including fractures elsewhere in the shoulder girdle, thoracic/chest injury, head injury and spinal fracture.^{4–8}

While still controversial nonoperative treatment is the mainstay for most extra-articular scapular fractures.¹ Intra-articular glenoid fractures can lead to significant morbidity including chronic pain, instability, and early onset

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degenerative disease.⁴ For these reasons displaced intra-articular glenoid fractures have been managed surgically with good to excellent results.⁹⁻¹¹ To our knowledge there has only been one study¹¹ that has specifically assessed patient outcomes after ORIF of intra-articular glenoid fractures. The purpose of this analysis was to add to the body of research by assessing patient based functional outcomes after open reduction and internal fixation for displaced glenoid fractures.

2. Materials and methods

Institutional review board approval at the University of Southern California Health Sciences Campus was obtained prior beginning our investigation. Using a search of CPT code 23585 for open treatment of scapular fracture we were able to find forty-eight patients who undertook open reduction internal fixation of a scapula fracture at our private institution between the years of 2005 and 2010. Imaging was reviewed by

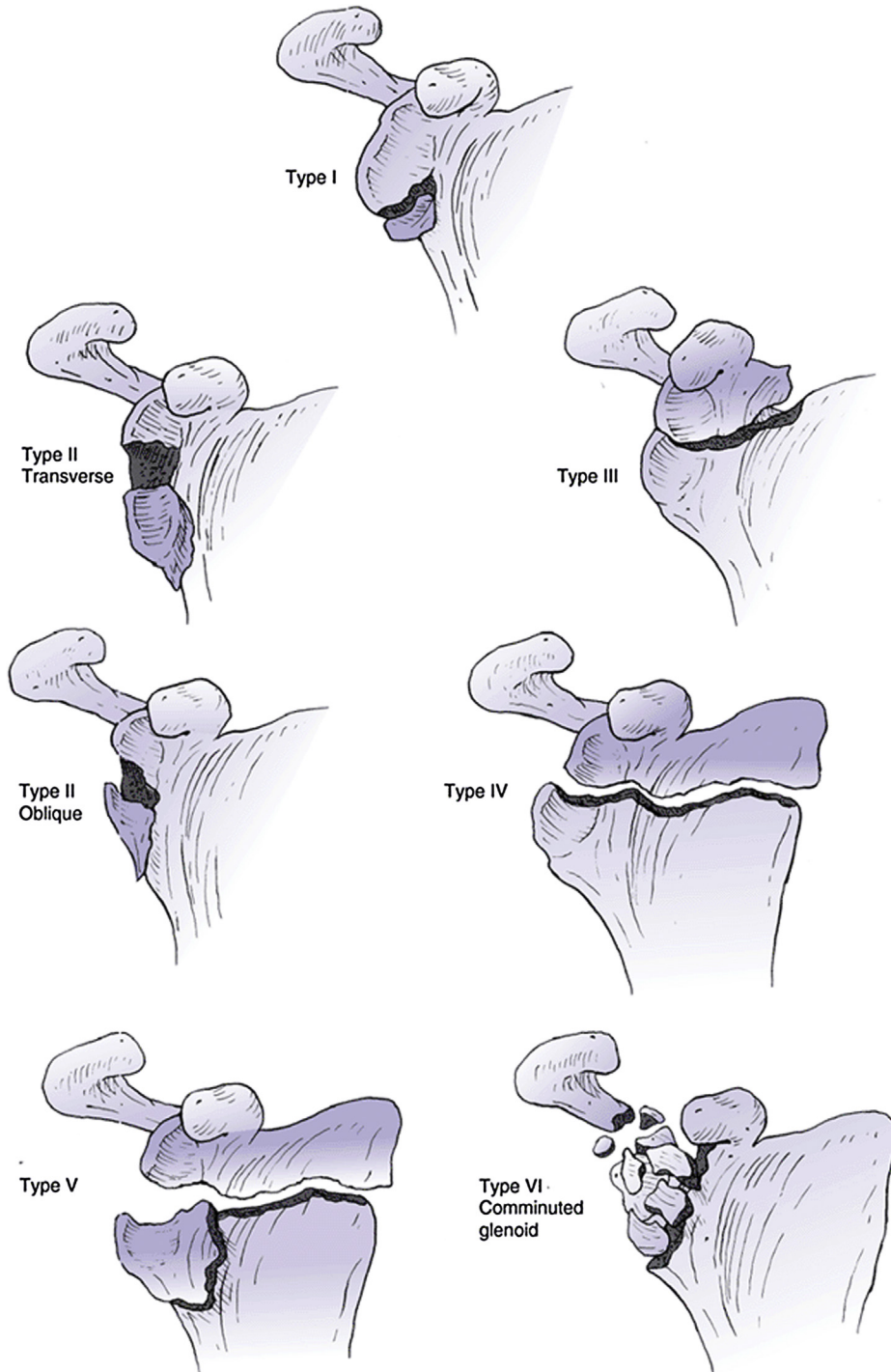


Fig. 1 – Ideberg classification of glenoid fractures into five types, with comminuted type VI of Goss added.

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