

Indian Journal of Research PARIPEX ORIGINAL RESEARCH PAPER		Orthopaedics
OPERATIVE VERSUS NONOPERATIVE TREATMENT OF DISPLACED SCAPULAR FRACTURES		KEY WORDS:
Dr. Bibhudarshi Mohapatra	3 rd Year Orthopaedics Resident, HMCH, BBSR.	
Dr. Subhranshu Sekhar Nayak	Asst. Professor ,Dept of Orthopaedics, HMCH, BBSR.	
Prof. Dr. Sunil Kumar Dash	Professor, Dept Of Orthopaedics, HMCH, BBSR.	
ABSTRACT	Introduction: Operative indications for displaced scapular fractures have been controversial and inconsistent. Surgeons have been dissuaded to operate on these uncommon fractures because of the complex anatomy, approaches, and fracture patterns. It is unclear whether return to work, pain, or complications differ in patients with scapular fractures treated nonoperatively or operatively. Objectives: To assess differences in rates of union, range of motion, ability to return to work, pain, and complications between operatively and nonoperatively treated scapular body and neck fractures. Methodology: We retrospectively reviewed 44 patients with 44 scapular fractures treated between November 2023 and October 2025. Of the 44 fractures, 21 were treated with open reduction internal fixation and matched by age, occupation, and gender to 23 patients treated nonoperatively. The proportions of AO/OTA fracture types were similar in the two groups. The mean displacement, shortening, and angulation were greater in the operative group as compared with the nonoperative group. All patients were followed until healing or discharge from care (average, 1 year; range, 6–12 months). We assessed complications, return to work, and radiographic healing. Results: All fractures healed. We found no differences in return to work, pain, or complications. Conclusions: Our observations suggest operative treatment of displaced scapula fractures results in similar healing, return to work, pain, and complications as nonoperative treatment. We do not recommend operating on any scapular neck or body fractures displaced less than 20 mm.	
	INTRODUCTION : Scapular fractures are uncommon with incidence being reportedly 1% of all fractures and 3% - 5% of upper extremity fractures. Substantially displaced fractures of the scapula may affect shoulder girdle function resulting from malalignment, arthrosis, rotator cuff dysfunction, scapulothoracic dyskinesis, and impingement-type pain. Historically, nonoperative intervention and early ROM have resulted in predictable healing, return to activities of daily living, and reduction in pain. Because of the extensive muscular attachments and envelope, early and complete healing occurs. Insufficient bone stock, complex 3D anatomy, and difficult surgical exposures create problems with internal fixation. Displaced scapular body and glenoid neck fractures with and without intraarticular glenoid fractures can be reduced through a modified Judet approach. However, it is unclear whether return to work, pain, or complications differ in patients with scapular fractures treated nonoperatively or operatively. We therefore compared: (1) rates of union; (2) ROM; (3) return to work; (4) pain; and (5) complications of patients treated nonoperatively and operatively	
		fractures treated between November 2023 and October 2025. Of the 44 fractures, 21 were treated with open reduction internal fixation and matched by age, occupation, and gender to 23 patients treated nonoperatively. The proportions of AO/OTA fracture types were similar in the two groups. The mean displacement, shortening, and angulation were greater in the operative group as compared with the nonoperative group. All patients were followed until healing or discharge from care (average, 1 year; range, 6–12 months). We assessed complications, return to work, and radiographic healing.
		Inclusion Criteria: • Age >18 years • Radiographically diagnosed scapular or glenoid fracture • Treatment by open reduction and internal fixation • Follow up until radiographic union and functional outcome were established
		Exclusion Criteria: • Inadequate radiographic and/or functional analysis • Surgical approach other than the modified Judet for scapular or glenoid fracture
		Operative Procedure: Modified Judet Approach Operative Indications : -Medial displacement > 20 mm -Shortening > 20 mm -Angular deformity > 45degrees -Intraarticular step-off greater than 3 mm, double shoulder suspensory injuries (DSSI)(including clavicle, coracoid, acromion) -Intra-articular displaced glenoid fractures.
		Contraindications : -Associated injuries such as severe traumatic brain injury with elevated ICT -Unstable cervical spine injuries unable to be placed into a lateral decubitus position -Severe burn overlying the surgical approach -Acute medical comorbidities precluding surgery such as insufficient cardiac output, COPD and severe dementia
MATERIALS AND METHODS : We retrospectively reviewed 44 patients with 44 scapular		

18

www.worldwidejournals.com

Operative Management :

In patients treated operatively, similar restrictions were placed on ROM, strengthening, and rotator cuff function. Unlimited passive forward flexion and abduction ROM were started before discharge and continued for 6 weeks. The 6-week period was chosen arbitrarily to allow for successful deltoid reattachment to the scapular spine, healing of soft tissues, and adequate pain management. Physiotherapy was instituted within 1 to 2 weeks postoperatively for passive ROM only. Active full ROM and strengthening began at 6 weeks postoperatively. Radiographs were obtained at the 2, 6, 12 and 24 week intervals. Patients were allowed to return to light duty work at 6 weeks and heavy-duty work at 6 to 12 weeks.



Figure 2 & 3: Modified Judet Approach surgery with Post op x ray

Nonoperative Management:

Patients with scapular body and neck fractures treated nonoperatively were immobilized with a sling or immobilizer until pain allowed motion and function.ROM, strengthening, and rotator cuff function were begun when pain allowed.Radiographic images (Grashey, axillary, and scapular Y view) were obtained at 2, 6, and 12 weeks.When pain subsided and fracture lines and borders consolidated, imaging was discontinued.

RESULTS:

Range of Motion

ROM (DEGREES)	Non Operative	Operative	t	p
Forward flexion	144.9 ± 44.6 (70–180)	152.6 ± 40.1 (35–180)	-0.500	0.621
Abduction	129.1 ± 47 (70–180)	146.2 ± 41.6 (65–180)	-0.982	0.334
External rotation	67.0 ± 20 (45–90)	50.8 ± 26.7 (10–90)	1.371	0.182
Internal rotation	76.3 ± 15 (60–90)	57.8 ± 29.1 (15–95)	2.127	0.050

Values are mean ± SD; ranges provided in parentheses

All fractures healed and we observed no differences in return to work, pain, or complications in the two groups. The operative group had more physical therapy visits than the nonoperative group.

DISCUSSION:

Armstrong and Van der Spuy study found good results with non operative treatment, less favourable with neck and glenoid fractures, consider operative with young and fit patients. Hardegger et al found operative indications not dependant on fracture pattern.Jones and Sietsema concluded that the Displacement is Nonoperative <20 mm, operative > 20 mm. Both operative and nonoperative scapular fracture treatment resulted in high union rates, high return to work rates, and minimal complications. Despite operative fixation resulting in no complications and restoration of anatomical function, we do not recommend surgery for scapula fractures with less than 20 mm displacement.

LIMITATIONS:

Smaller sample size. Patients were followed until complete radiographic healing or return to baseline level of functioning (pain-free, normal activities, radiographic fracture consolidation without fixation failure) for an average of 1 year rather than long term with an 18- to 24-month interval. Because no CT imaging was indicated or used, true radiographic healing is difficult at best to interpret from radiographs alone despite seeing callus formation on nonoperative management and resolution of fracture lines without disruption of internal fixation.

CONCLUSION:

Operative fixation realigned and stabilized the markedly displaced scapular body and neck fractures. Both operative and nonoperative scapular fracture treatment resulted in high union rates, high return to work rates, and minimal complications. Despite operative fixation resulting in no complications and restoration of anatomical function, we do not recommend surgery for scapula fractures with less than 20 mm displacement.