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Original Research

Assessment of cases of posteromedial talus fractures

[1]Pradeep Singh, [2]Amit Varshney

[1]Assistant Professor, Department of Orthopaedics, K M Medical College, Mathura, Uttar Pradesh, India;
[2]Assistant Professor, Department of General Medicine, Major S D Singh Medical College, Farukhabad, Uttar Pradesh, India

ABSTRACT:

Background: The incidence of non-union or delayed union of patella fractures is rare and ranges from 2.7–12.5%. The present study was conducted to assess posteromedial talus fractures. **Materials & Methods:** 72 posteromedial talus fractures of both genders were included. Mechanism of injury, treatment given and complications was also recorded. **Results:** There was medial tubercle fracture in 38, postero- medial body fracture in 22 and posterior process fracture in 12 cases. Treatment given was cast in 25, excision in 30 and ORIF in 17 cases. The difference was significant (P< 0.05). Common complications were subtalar arthritis in 3, non- union and stiffness of ankle joint in 1 case each. The difference was significant (P< 0.05). **Conclusion:** Most common type of fracture was medial tubercle, postero- medial body fracture and posterior process fracture.

Key words: Clavicle, medial tubercle, postero- medial body fracture

Corresponding author: Amit Varshney, Assistant Professor, Department of General Medicine, Major S D Singh Medical College, Farukhabad, Uttar Pradesh, India

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INTRODUCTION

The incidence of non-union or delayed union of patella fractures is rare and ranges from 2.7–12.5%. The treatment of this complication is fraught with several challenges. The decision making in the treatment of this condition is based on the functional demands of the patient, the factors that led to the development of the non-union, the potential impact of the biomechanical effects of a total patellectomy, and the presence of an intact extensor mechanism of the knee for later reconstructive procedure. Thus, the decision to perform surgery to improve the quality of life based upon repairing the non-union or excising the patella is difficult and requires an evidence-based approach.[1]

The classification of these fractures is based on their anatomic location within the talus (i.e., head, body, or neck). Each type has unique features that affect both diagnosis and treatment.[2] The treatment methods of patellar comminuted fracture include the following: circumferential cerclage wire fixation, modified tension band fixation nickel-titanium patella concentrator, cable-pin system, titanium cable cerclage, plate and screw fixation and partial or total patellectomy.[3,4] Partial or total patellectomy results in the destruction of the extensor mechanism and normal patellofemoral joint contact surface, which reduces knee joint function. Therefore, this treatment can only be used as a remedy when the comminuted bone cannot be reduced.[6] The present study was conducted to assess posteromedial talus fractures.

MATERIALS & METHODS

The present study comprised of 72 posteromedial talus fractures of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. A thorough clinical examination was performed. Radiographs were taken to identify fracture the posteromedial talar body fracture pattern involving both the ankle and subtalar articulations. Mechanism of injury, treatment given and complications was also recorded. Results were statistically studied. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 72		
Gender	**Males**	**Females**
Number	40	32

Table I shows that out of 72 patients, males were 40 and females were 32.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Fracture	Medial tubercle	38	0.02
	Postero- medial body	22	
	Posterior process	12	
Treatment	Cast	25	0.05
	Excision	30	
	ORIF	17	

Table II shows that there was medial tubercle fracture in 38, postero- medial body fracture in 22 and posterior process fracture in 12 cases. Treatment given was cast in 25, excision in 30 and ORIF in 17 cases. The difference was significant (P< 0.05).

Table II Complications in patients

Complications	Number	P value
Subtalar arthritis	3	0.01
Non union	1	
Stiffness of ankle joint	1	

Table III shows that common complications were subtalar arthritis in 3, non- union and stiffness of ankle joint in 1 case each. The difference was significant (P< 0.05).

DISCUSSION

Open reduction and internal fixation is the first choice for the treatment of comminuted patellar fracture.[7] Through internal fixation technology, the fragments can be fixed stably to carry out the early functional exercise of the knee.[8] Modified tension band fixation has a good effect on simple transverse patellar fracture and the curative effect on the comminuted patella remains to be discussed.[9] Plate and screw fixations are used for the treatment of patellar fracture, but biomechanical studies are mainly used for the treatment of transverse patellar fracture or inferior patellar fracture.[10] Circumferential cerclage wire fixation is suitable for the treatment of a comminuted patellar fracture. Biomechanical results showed that the stability of cerclage wire fixation was significantly worse than that of tension band and modified tension band.[11] The present study was conducted to assess posteromedial talus fractures.

In present study, out of 72 patients, males were 40 and females were 32. Sun et al[12] found that 16 patients were males and 22 were females, aged 23–68 years (average 40.4 ± 9.1 years). Comminuted patellar fractures were classified according to the AO/OTA classification: 10 cases were type 34-C2 (three fragments), 28 cases were type 34-C3 (more than three fragments). A total of 38 patients were followed up for 6–36 months (mean time 16.1 ± 5.8 months). The bone union radiographically occurred at approximately 2.5–3.5 months (mean time 2.92 ± 0.25 months). No postoperative complications, such as infection, dislocation, breakage of the implants, painful hardware, and post-traumatic osteoarthritis, were observed. According to the clinical grading scales of Böstman, satisfactory results were obtained, and the mean score at the final follow-up was 28.7 (range 20–30) points. Thirty-two patients (84.2%) with excellent results had a mean score of 29.5 ± 0.7 (range 28–30) points, and six patients (15.8%) with good results had a mean score of 24.5 ± 2.2 (range 20–27) points. The patients with excellent and good scores had active flexion of 130° (110–140).

We found that there was medial tubercle fracture in 38, postero- medial body fracture in 22 and posterior process fracture in 12 cases. Treatment given was cast in 25, excision in 30 and ORIF in 17 cases. Giuffrida et al[13] in their study reported on a series of six patients with posteromedial talar body fractures. In their series, all were high-energy injuries, and all were associated with a medial subtalar joint dislocation. Four patients had the initial diagnosis missed. Three patients were treated with closed reduction and casting. Five of six patients revealed persistent subtalar instability. Four required subtalar joint arthrodesis, one required tibiotalar calcaneal arthrodesis. The lone patient who did not require an arthrodesis refused treatment even though an arthrodesis was felt to be necessary. Due to these unacceptably high rates of non-union and complications, surgical treatment is indicated for these injuries.

Klassen and Trousdale[14] reported four of 19 patients (21%) had open fractures. Open fractures of the patella occur from high-energy trauma and result in

high grade soft tissue injury, disruption of the extensor mechanism, and injury to the patellofemoral articular cartilage. The mechanism is most likely a direct compressive force on the knee or indirect tensile forces. In open fractures of the patella various factors may lead to nonunion or delayed union.

CONCLUSION

Authors found that most common type of fracture was medial tubercle, postero- medial body fracture and posterior process fracture.

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