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ORIGINAL ARTICLE

Assessment of posteromedial talus fractures

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ABSTRACT:

Background: A posteromedial talus fracture is a specific type of fracture that occurs in the talus bone, which is one of the major bones of the ankle joint. The present study was conducted to assess cases of posteromedial talus fractures. **Materials & Methods:** 76 patients of posteromedial talus fracturesof both genders were enrolled and parameters such as type of racture, therapy administered, and complications were all documented. **Results:** Out of 76 patients, males were 46 and females were 30. Type of fracture was medial tubercle in 52, postero- medial body fracture in 28 and posterior process in 16 cases. Treatment given was cast in 21, excision in 30 and ORIF in 25 cases. The difference was significant (P< 0.05). Common complicationswere non- union in 2, subtalar arthritis in 5 and stiffness of ankle jointin 1 patient. The difference was significant (P< 0.05). **Conclusion:** Vommonfracture was medial tubercle, postero- medial body fracture and posterior process. Common complicationswere non- union subtalar arthritis and stiffness of ankle joint.

Key words: complications, postero- medial body fracture, subtalar arthritis

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INTRODUCTION

A posteromedial talus fracture is a specific type of fracture that occurs in the talus bone, which is one of the major bones of the ankle joint.[1] The talus bone plays a critical role in connecting the foot to the leg bones and facilitating movement of the ankle joint.A posteromedial talus fracture refers to a fracture that occurs on the posterior (back) and medial (inner) aspect of the talus bone.[2] Fractures in this region can vary in severity and complexity, and they may involve different parts of the bone, such as the body or the neck of the talus. These fractures can result from traumatic injuries, such as falls, high-energy impacts, or twisting injuries.[3]

The talus has no muscle or tendinous attachments and is supported solely by the joint capsules, ligaments, and synovial tissues.[4] Ligaments that provide stability and allow motion bind the talus to the tibia, fibula, calcaneus, and navicular. The tendon of the flexor hallucis longus lies within a groove on the posterior talar tubercle and is held by a retinacular ligament. The spring (calcaneonavicular) ligament lies inferior to the talar head and acts like a sling to suspend the head.[5]

The posterior process of the talus consists of medial and lateral tubercles. The medial tubercle is smaller and is the attachment site for the posterior portion of the deltoid. The lateral tubercle is larger and is the attachment site of the posterior talofibular ligament.[6] Between the two tubercles is the groove for the flexor hallucis longus (FHL) tendon. Fracture patterns of the posteromedial talus vary. Radiographs often underestimate or miss these injuries entirely. Computed tomography (CT) scans are essential in cases where posteromedial talar body fractures are suspected to aid in diagnosis and gain further understanding of fracture complexity.[7] The present study was conducted to assess cases of posteromedial talus fractures.

MATERIALS & METHODS

The present study comprised of 76 patients of posteromedial talus fracturesof both genders. All gave their written consentto participate in the study.

Data such as name, age, gender etc. was recorded. A comprehensive clinical examination was carried out. The posteromedial talar body fracture pattern encompassing both the ankle and subtalar articulations was identified using radiographs. Parameters such as type of fracture, therapy administered, and complications were all documented. Results were analyzed statistically. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 76		
Gender	**Males**	**Females**
Number	46	30

Table I shows that out of 76 patients, males were 46 and females were 30.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Fracture	Medial tubercle	32	0.82
	Postero- medial body	28	
	Posterior process	16	
Treatment	Cast	21	0.05
	Excision	30	
	ORIF	25	

Table II, graph I shows that type of fracture was medial tubercle in 52, postero- medial body fracture in 28 and posterior process in 16 cases. Treatment given was cast in 21, excision in 30 and ORIF in 25 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters

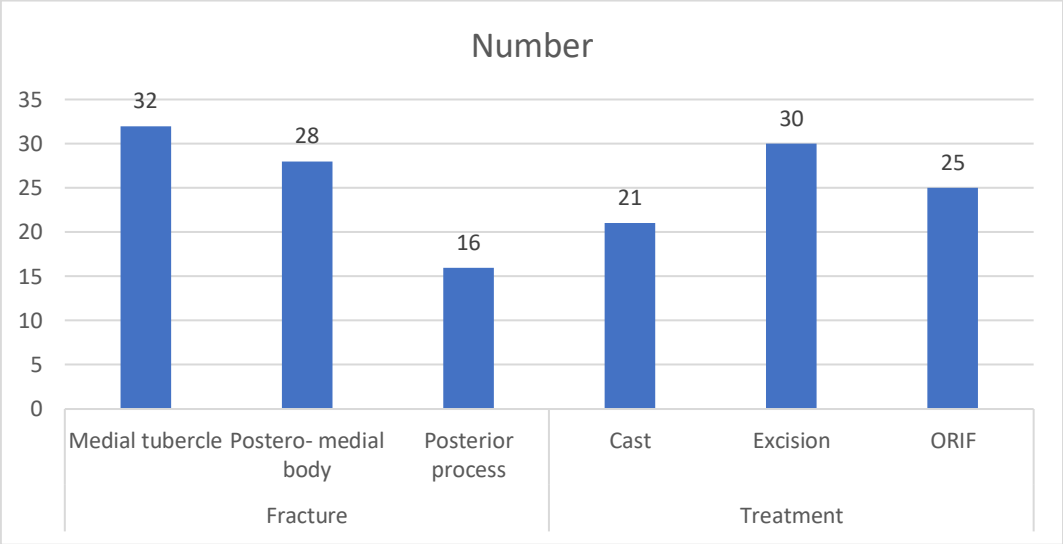

Table IV Comparison of complications

Complications	Number	P value
Non union	2	0.03
Subtalar arthritis	5	
Stiffness of ankle joint	1	

Table IV shows that common complications were non- union in 2, subtalar arthritisin 5 and stiffness of ankle joint in 1 patient. The difference was significant (P< 0.05).

DISCUSSION

Peripheral talar fractures comprise fractures of the lateral and posterior process with its lateral and medial tubercle, the medial or medio-caudal ridge, the talar head as well as traumatic osteochondral lesions of the lateral and medial talar dome.[8] They are a heterogeneous entity of injuries in terms of mechanism, pathology, treatment and outcome.[9] However, they share some common traits, for which reason they are analysed together: they are rare, easily overlooked, and show poor results if neglected.[10] Peripheral talar fractures are more common than central body fractures of the talus or talar neck fractures. The incidence of peripheral talar fractures has traditionally been estimated with 0.3 to 1% of all ankle injuries.[11]The present study was conducted to assess cases of posteromedial talus fractures.

We found thatout of 76 patients, males were 46 and females were 30.Kinner et al[12] described the clinical and radiological outcomes following surgical therapy. This retrospective case series potentially comprise 16 peripheral talar fractures. All patients received surgical treatment and were monitored for a minimum of 12 months. The clinical and radiological outcomes were documented. The average period of follow-up was 16 months. Thirteen participants had concurrent injuries. Two individuals had additional spine fractures, and four were polytraumatized. There was no evidence of non-union or mal-union. Due to a simultaneous calcaneal fracture, one patient required subtalar and calcaneo-cuboidal fusion during follow-up. Other secondary procedures, such as implant removal, were required in 5/16 of the individuals. During the most recent follow-up, the recorded AOFAS score (mean SD) was 87.3 6.6, and the EQ5-D score was 0.91 0.06.

We found that type of fracture was medial tubercle in 52, postero- medial body fracture in 28 and posterior process in 16 cases. Treatment given was cast in 21, excision in 30 and ORIF in 25 cases. Giuffrida et al[13]

reported on six patients with posteromedial talar body fractures in their investigation. All of the injuries in their study were high-energy injuries associated with a medial subtalar joint dislocation. The initial diagnosis was missed in four individuals. Closed reduction and casting were used to treat three patients. Five of the six individuals had chronic subtalar instability. Four patients needed subtalar joint arthrodesis, and one needed tibiotalar calcaneal arthrodesis. Even though an arthrodesis was deemed required, the lone patient who did not require one refused therapy. Because of the unacceptably high rates of non-union and comorbidities, surgical treatment for these injuries is recommended.

We observed that common complicationswere non-union in 2, subtalar arthritis in 5 and stiffness of ankle jointin 1 patient.Swords et al[14] treated ten patients for posteromedial talar body fractures in their study. Mechanisms of injury included five motor vehicle incidents, three falls from a height, one foot being crushed by a log truck, and one patient falling while walking. At the time of presentation, six patients had a medial subtalar dislocation, two of which were open dislocations. Other concomitant foot or ankle injuries in 4/10 patients were cuboid fracture, lateral malleolus fracture, navicular avulsion fracture, and lateral process talus fracture. 5/10 patients experienced musculoskeletal injuries that were not of the foot or ankle due to the high energy mechanism of injury. The average length of follow-up was 4.8 years.Subtalar motion accounted for 40% of contralateral foot motion. The average ankle range of motion was 80% of the contralateral ankle. In patients with concomitant dislocation, the range of motion tended to be poorer. At the initial evaluation, two patients, both with accompanying medial subtalar dislocations, showed medial calcaneal nerve paresthesias, with one entirely resolving at the last follow-up. There were no FHL-related symptoms reported by any of the individuals. Two further procedures were carried out. One patient had an ankle cheilectomy, and another had a gastrocnemius recession. Most importantly, in this patient series, no arthrodesis operations were required.

CONCLUSION

Authors found that common fracture was medial tubercle, postero- medial body fracture and posterior process. Common complicationswere non- union subtalar arthritis and stiffness of ankle joint.

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