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A Case of 5th Metatarsal Head Fracture Dislocation Treated with Closed Reduction and Percutaneous Pinning

Neeraj R Shetty[1], Nithin K M[2]

[1, 2]Department of Orthopaedics, Kurla babha hospital, Mumbai, Maharashtra, India

[1]Corresponding Author Email: *neerajshetty10[at]gmail.com*

Abstract: ***Fracture of metatarsal bones are the most frequent fractures of the foot. Most of the cases can be managed conservatively using a below knee cast. In case there is significant displacement or dislocation closed or open reduction and percutaneous pinning is the management of choice. Here we have presented a case report of 5th metatarsal head fracture dislocation in a 25 year old male who was managed with closed reduction and percutaneous pinning. Post operatively patient was given below knee slab and was kept non weight bearing for 6 weeks. After 6 weeks he was able to walk pain free.***

1. Introduction

Fractures of metatarsal (MT) bones are the most frequent fractures of foot bones. Treatment is usually conservative and includes 3 - 6 weeks of immobilization and protected weight bearing. In adults, some authors recommend reposition and fixation in cases with bone fragment displacement in the sagittal plane and/or shortening. Dislocations of 3 - 4 mm and angulation of over 10% are also among the criteria for operative treatment. For simple II - IV MT fracture, percutaneous retrograde intramedullary pinning with K - wires was suggested and open reduction with K - wires was recommended in cases where percutaneous technique is not possible.

2. Case Presentation

A 25 year old male presented to kurla babha hospital with complaints of pain and swelling in the right foot following history of trauma 2 days back. He had difficulty in walking. On examination his right foot was swollen and there was tenderness around the 5th metatarsal head region. AP and Oblique radiograph was advised of the right foot which revealed 5th metatarsal head fracture dislocation. The patient was advised surgical management. He was given below knee slab and was admitted in ward. All routine preoperative investigations were sent and he was posted for surgery after 2 days once the swelling reduced. He was given ankle block and once the effect of block had come closed reduction was attempted. Since the distal fragment was displaced dorsally it was pushed downwards and the proximal fragment was pushed dorsally. Traction was also applied. Then c arm image was checked which showed that the fracture had reduced. Now a 1 mm k wire was inserted from the plantar aspect of foot through the head of 5th metatarsal and it was used as a joystick to keep the fracture reduced. Then a 1.5 mm k wire was inserted medial to the 1st wire into the 5th metatarsal shaft and the 1st wire was removed. The k wire was bent and cut and buried into the skin. Sterile dressing was done and below knee slab was reapplied. Post operatively patient was comfortable and was discharged the next day on oral antibiotics and pain killer. He was advised strict non weight bearing for 6 weeks.

Figure 1: Pre OP AP view of foot showing 5th metatarsal head fracture dislocation.

Figure 2: Pre OP oblique view of foot

Figure 3: Post OP AP view of foot showing well reduced fracture dislocation with k wire in situ.

3. Discussion

Reports on MT bone fracture dislocation are rare. The most common mechanism of injury is twisting injuries during sports activity. Fractures of more than one MT are more common when II - IV MT are involved, while fractures of the 1st and 5th MT are often isolated. Metatarsal fractures are usually treated conservatively, with cast immobilisation being performed for 3 to 6 weeks. Surgical treatment is indicated in cases with significant displacement (angulation of more than 10 %), displacement of more than half of the shaft, and shortening of more than 0.5cm. Such displacements can change the distribution of body weight on the foot, which may lead to painful complications later on in life.

A retrospective review of 337 patients who suffered from a MT fracture showed that returning to sports took longer in the operated group, while the non - operated group had a few more cases of residual post - treatment pain.

When deciding on the type of treatment for MT fractures, force distribution should always be considered. Even though percutaneous fixation is suggested in most cases, open reduction can also be considered in the case of a severe injury. With open reduction, the anatomic position of bone fragments is achieved.

4. Conclusion

Our case study discusses a rare case of 5th metatarsal head facture dislocation which was treated by closed reduction and percutaneous pinning giving good functional outcome to the patient. There was no need of open reduction which can lead to skin complications and infection.

References

[1] Rammelt S, Heineck J, Zwipp H (2004): Metatarsal fractures. Injury 35 Suppl 2: SB77 - 86.
[2] Singer G, Cichocki M, Schalamon J, Eberl R, Höllwarth ME (2008): A Study of Metatarsal Fractures in Children. J Bone Joint Surg Am 90: 772 - 776.
[3] Owen RJT, Hickey FG, Finlay DB (1995): A study of metatarsal fractures. Injury 26: 537 - 538.
[4] Igor Frangež*, Jure Kos, Matej Cimerman and Dragica Maja Smrke: fracture dislocation of metatarsal bones.