



International Journal of Orthopaedics Sciences

ISSN: 2395-1958
IJOS 2016; 2(2): 21-23
© 2016 IJOS
www.orthopaper.com
Received: 15-10-2015
Accepted: 27-01-2016

Ganesh Singh Dharmshaktu
Department of Orthopaedics
Government Medical College
Haldwani, Uttarakhand
India.

Shailendra Singh Bhandari
Department of Orthopaedics
Government Medical College
Haldwani, Uttarakhand
India.

Fifth metatarso-phalangeal dislocation with multiple central metatarsal neck fractures in an adolescent: A rare concomitant injury

Ganesh Singh Dharmshaktu, Shailendra Singh Bhandari

Abstract

Forefoot injuries are common occurrences demanding appropriate detection and treatment to ensure optimal functional outcome. Missed or mismanaged care leads to morbid sequelae complicating the management. Assessment for concomitant bony and soft tissue injuries holds due importance for uneventful recovery. Often the metatarsal fractures of central region are multiple, second to fourth, and the presence of little toe metatarso-phalangeal (MTP) dislocation with it makes it a rare injury pattern here managed successfully with appropriate management.

Keywords: Metatarso-phalangeal Joint, Dislocation, Foot, Injury, Fracture, Metatarsal, Fixation, Treatment.

Introduction

Human forefoot is a mobile unit of musculoskeletal tissues that is instrumental in better load sharing and adaptability of locomotion in uneven surfaces. The injury to this region has propensity to affect gait and ambulation in the event of suboptimal management. The metatarsal fractures account for 35% of all foot fractures mostly in adult age group^[1, 2]. Fracture of third metatarsal has been reported to accompany fractures of second and fourth metatarsal in 63% of cases and the overall incidence of these central metatarsal fractures is 10% of all metatarsal fractures^[2]. The direct injury has been reported to be the most common cause of these fractures^[3]. However the exclusion of other associated injuries requires attention as these central fractures may be found in isolation or as part of grave injury patterns.

Case Report

A 19 year old male patient presented to us with history of twisting of foot and then fall into a shallow gorge after a slippage over icy path five days back. The patient had pain but no swelling in the beginning and he continued to walk after that till the increasing pain and swelling resulted in limited mobility. He was advised rest and supportive management by primary care doctor before coming to us. The foot had mild swelling at presentation as a result of rest and limb elevation advised before. There was tenderness in forefoot area corresponding to metatarsal neck region of second to fourth metatarsals, and clinically there was a suspected dislocation of little toe MTP joint. The radiographs of the injured foot displayed a rare combination of multiple metatarsal neck fractures of central metatarsals (second to fourth) along with little toe MTP dislocation (Fig.1). The initial gentle attempt to reduce MTP dislocation was failed due to painful resistance of the patient. The closed or open reduction of MTP dislocation and those of displaced metatarsal neck fractures was planned under informed consent for surgery and probable future publication.

Under aseptic precautions and regional anesthesia in the form of popliteal block, the foot was painted and draped in standard fashion before attempting a closed reduction of the dislocation first by pulling the little toe manually with a non slippery linen support while assistant providing for the counter traction. The dislocation was reduced uneventfully and closed reduction of metatarsals also regained satisfactory position of fracture. Two K- wires were introduced to stabilize the reduced dislocation and fracture of fourth metatarsal neck for added stability. A plaster back slab was given for short term pain and edema control measure. The toe movements were encouraged to tolerance. The post-operative radiographs were satisfactory for

Correspondence

Ganesh Singh Dharmshaktu
Department of Orthopaedics
Government Medical College
Haldwani, Uttarakhand
India.

fracture and the dislocation (Fig.2). Patient discharged after properly explained plaster care to return after ten days when plaster was removed and then after six weeks for check radiographs.

Result

The fractures healed uneventfully when viewed on radiograph at six weeks and the dislocation was reduced following which K wires were removed and patient asked to walk normal as per tolerance initially with walker support and then without it. After three months patient was walking unaided with minimal pain and discomfort. There was no recurrence of dislocation or any fresh complaints I the follow up. The case was actively involved in his activities of daily living in the follow up of eleven months.

Discussion

The indirect injury mechanisms leading to a twisted foot like in sports is a common mode of central metatarsal fractures

often contiguous [4]. Our case sustained the trauma slipping on an icy surface into a shallow gorge and indirectly twisting of his foot. The additional hyperextension of little toe might be causative factor for the MTP dislocation [5]. The careful assessment of radiographs of the region, preferably weight bearing, is warranted to rule out other concomitant injuries [6]. The lesser toe dislocation is a rare injury in itself and rarer in combination with multiple central metatarsal fractures. The healing of metatarsal fractures is usually not a problem owing to its rich vascularity [7]. Many adjacent structures may be interposed to cause an irreducible dislocation [5, 8]. Many combinations of the injury of fifth metatarsal dislocation with one or more metatarsal head or neck fractures have been reported. One case report of very similar to our case was reported as irreducible dislocation requiring removal of dorsal plate as interposing material following open reduction of MTP dislocation [9]. The attempted maintenance of length, alignment and rotation by closed or open means is sufficient in most cases for good healing.



Fig 1: Radiograph showing the fractures of central metatarsal necks and little toe MTP dislocation.



Fig 2: Post-operative radiograph showing reduced joint and fractures held by K wire.



Fig 3: Healed fractures in the follow up.

Conclusion

The early recognition and prompt treatment involving stable reduction of multiple metatarsal fracture and joint injuries is mainstay of achieving optimum foot function and subsequent pain free gait and ambulation.

References

1. Spector FC, Karlin JM, Scurran BL. Lesser metatarsal fractures. Incidence, management, and review. *J Am Podiatry Assoc.* 1984; 74(6):259-264.
2. Petrisor BA, Ekrol I, Court-Brown C. The epidemiology of metatarsal fractures. *Foot Ankle Int.* 2006; 27(3):172-174.
3. Mandracchia VJ, Mandi DM, Toney PA. Fractures of the forefoot. *Clin Podiatr Med Surg.* 2006; 23(2):283-301.
4. Shereff MJ. Fractures of the forefoot. *Instr Course Lect.* 1990; 39:133-140.
5. Rao JP, Banzon MT. Irreducible dislocation of the metatarsophalangeal joints of the foot. *Clin Orthop Relat Res.* 1979; (145):224-6.
6. Maxwell JR. Open or closed treatment of metatarsal fractures. Indications and techniques. *J Am Podiatry Assoc.* 1983; 73(2):100-106.
7. Urteaga AJ, Lynch M. Fractures of the central metatarsals. *Clin Podiatr Med Surg.* 1995; 12(4):759-772.
8. Neogi DS, Bandekar SM, Sadekar V, Patnaik S, Bhat T, D'Mello Z. Irreducible dislocation of all the lesser metatarsophalangeal joints of the foot: a case report. *Foot Ankle Spec.* 2012; 5(5):324-6.
9. Turkmensoy F, Erinc S, Ergin ON, Ozkan K, Kemah B. Irreducible fifth metatarsal joint after car crush injury. *Case Rep Orthop.* 2015; 2015:894057.