A Complex Open Pilon Fracture - A Case Presentation Dr. SHVAMPATEL JUNCRRESIDENT ORTHOUNT 5



- 20y/Male with right tibia pilon fracture + Gustilo Anderson type 3b open injury,
- 1 year back(august 2020)
- No DNVC
- H/o RTA,
- No known comorbidities,
- Occupation OT technician in our hospital





Rationale for choosing external fixation

- Open wound Gustilo Anderson type 3b
- We decided 4.5 mm external fixator for fracture fixation with minimal internal fixation and wound debrid<u>ement</u>







1 month follow up





2 month follow up



External fixator removed at 2 month (October 2020) follow up

Skin condition was not good for internal fixation.

So, we planned for fibulectomy and bone marrow injection and PTB cast .



immediate xray after fibulectomy and PTB cast



Patient returned back after a gap of 3 months

- Patient presented with difficulty in weight bearing and walking over the affected limb.
- On examination- there was gross abnormal mobility at fracture site
- Skin condition was suitable
- So we decided for definitive fixation with bone graft .

Skin condition after PTB cast removal at 6 months follow up



6 months follow up after first surgery



Skin condition after PTB cast removal at 6 months follow up

 Since there was scar at anterior aspect of ankle,hence posteromedial approach was taken.



Inta operative C arm images





Intra operative clinical picture



Immediate post op xray



1 month follow up



2 months follow up



3rd month follow up











discussion

- External fixation of tibial pilon fractures and fracture healing
- Jukka Ristiniemi To cite this article: Jukka Ristiniemi (2007)
- External fixation of tibial pilon fractures and fracture healing, Acta Orthopaedica, 78:sup326, 2-34, DOI: 10.1080/17453690610046521 To link to this article:

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- Distal tibial fractures are rare and difficult to treat because the bones are subcutaneous. External fixation is commonly used, but the method often results in delayed union.
- Study -The median time for fracture union was 24 weeks (8–60). Twelve patients required reoperation because of delayed union within a median time of 21 (16–24) weeks from the injury. Eventually, all fractures united.
- The role of soft tissue injury in the healing of tibial fractures has been documented earlier (Nicoll 1964, Tonnesen et al. 1975, Gustilo & Anderson 1976, Gaston et al. 1999, Audigé 2005). Many authors believe that the vascularity of surrounding soft tissues is one of the key factors promoting successful healing of fractures (Robinson et al. 1995,

CONCLUSION

- Due to poor blood supply of distal shank and soft tissue coverage, it is prone to skin necrosis and nonunion post injury.
- Previous evidences suggestive of low union rates, high chances of malunion and arthritis in pilon fracture.
- Since our case was further complicated due to its compound nature, but timely intervention, meticulous dissection and step by step patient approach lead us to good functional and radiological outcome and our patient returned to his activities of daily life.
- This thought is in synchronisation with the article" Analysis of the Operative Treatment for Pilon Fracture"The Journal of Foot and Ankle Surgery (Asia-Pacific), July-December 2015



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Analysis of the Operative Treatment for Pilon Fracture

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ABSTRACT

Background: Pilon fracture is common clinical joint fracture and difficult to treat. It has high requirements on reduction and fixation. The selection of treatments is challengeable. In order to recover the ankle function maximize, there are many treatments proposed in paper recently, but no further studies. Therefore, patients of our hospital with Pilon fracture were followed up and the treatments were compared by different operations.

Materials and methods: Eighty-eight patients from August 2003 to October 2010 treated with conservative treatment, open reduction and internal fixation, external fixation combined with limited open reduction and internal fixation and external fixation were retrospectively analyzed.

Results: Seventy-eight cases were followed up in 88 patients, 66 cases were treated with operation. Postoperative complications: malunion in 7 cases, wound infection and delayed healing in 5 cases, delayed union in 2 cases and traumatic arthritis in 4 cases. At the same time, ankle function of type III Pilon fracture after operation was scored by Tornetta.

MATERIALS AND METHODS

General Materials

Seventy-eight cases of Pilon fracture patients include 50 males and 28 females aging between 18 and 57 years old. Injury causes: 27 cases as falling from high altitude, 27 cases as traffic accident, 13 cases in crush injury, 4 cases in grinding contusion and 7 cases in muscle strain. Comorbidity: systemic composite injury in 2 cases, spinal fracture in 2 cases, pelvic fracture in 2 cases, upper extremity fracture in 2 cases, fibula fracture in 54 cases, calcaneus fracture in 4 cases.

According to Rüedi-Allgöwer classification: type I in 5 cases, type II in 21 cases and type III in 52 cases. Treatment: 12 cases with conservative treatment and 66 cases with operation. Among the 66 cases, 54 cases were treated

THANK YOU

