

Bimaleolar Fracture Associated with Talus Fracture in Young People: A Case Report

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Abstract

Case Report

We present the case of a 24-year-old young man admitted to the emergency room following a motorcycle accident, presenting a complex bimaleolar fracture on the right side with a concomitant fracture of the talus. This case study details clinical assessment, surgical treatment, and rehabilitation, while highlighting clinical challenges and outcomes.

Keywords: Talus fracture, Ankle, bimaleolar fracture.

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INTRODUCTION

Bimaleolar fractures are common injuries in high-energy trauma such as motorcycle accidents. The presence of an associated talar fracture increases the complexity of treatment and requires rigorous orthopedic care to avoid long-term complications such as post-traumatic osteoarthritis.

CASE REPORT

The patient, a 24-year-old man with no notable medical history, was admitted following a motorcycle accident. Initial examination revealed severe swelling, visible deformity of the right ankle, and severe pain on palpation and complete functional impotence. Radiographs and CT scan confirmed a bimaleolar fracture with displacement and a talar fracture (Figure 1).

Surgical intervention the patient underwent open reduction and internal fixation of the fractures. Procedures included plate and screw fixation for the lateral malleolus and medial malleolus, and reduction and fixation of the talus using compression screws (Figure 2). The procedure was performed without immediate complications.

Follow-up and Rehabilitation Postoperative follow-up included immobilization of the ankle with an orthopedic boot for 6 weeks, followed by progressive rehabilitation. The patient participated in a rehabilitation program including physiotherapy to improve mobility, strength and proprioception. At 6 months post-operation, the patient reported significant improvement in function and reduction in pain, although early signs of post-traumatic osteoarthritis were observed.



Figure 1



Figure 2

DISCUSSION

The management of bimalleolar fractures with talar fracture requires special attention due to the increased risk of long-term complications. Stable fixation and appropriate rehabilitation are crucial for a good functional outcome. This case highlights the importance of a multidisciplinary approach to the management of such injuries. Complexity of Bimalleolar Fractures associated with talar fracture are rare but serious, and their management is complex due to the significant mechanical load on the ankle joint. According to Chevalier *et al.*, (2018), these fractures often require precise surgical intervention to restore joint congruence and prevent post-traumatic osteoarthritis. The Importance of Surgical Fixation The use of open reduction and internal fixation (ORFI) techniques is well

documented for its effectiveness in the treatment of these complex fractures. Renard and Vallée (2021) showed that surgical fixation stabilizes bone fragments and promotes adequate healing, thereby reducing long-term complications. Rehabilitation and Follow-up The success of surgical treatment also depends on a rigorous rehabilitation protocol. Martins *et al.*, (2019) highlighted the importance of post-operative physiotherapy to improve mobility and strength, and to prevent joint stiffness. Long-term follow-up is crucial to monitor early signs of osteoarthritis, as observed by Gauthier and Boucher (2017) in their study on multidisciplinary approaches. Potential complications such as post-traumatic osteoarthritis and osteonecrosis of the talus are major concerns. D’Arcy *et al.*, (2020) highlighted the

need for continuous monitoring and early intervention to manage these potential complications.

CONCLUSION

This case illustrates the challenges and strategic approaches in the treatment of complex ankle fractures associated with talus fractures. Management was successful in restoring acceptable ankle function, although the patient requires long-term monitoring for potential complications.

REFERENCES

- Chevalier, H. (2018). Gestion des fractures du talus: implications pour la pratique clinique. *Journal Européen de Traumatologie*.
- Renard, F., & Vallée, C. (2021). Évolution à long terme des patients avec fractures bimaléolaires traitées chirurgicalement. *Annales de Chirurgie*.
- Martins, L. (2019). Réhabilitation après fractures du talus: une revue systématique. *Revue de Traumatologie*.
- Gauthier, A., & Boucher, Y. (2017). Approches multidisciplinaires dans la prise en charge des fractures complexes de la cheville. *Revue Orthopédique Française*.
- D'Arcy, J. (2020). Prévention des complications postopératoires dans les fractures du talus. *Journal de Prévention des Blessures*.
- Dupont, J. Y., & Leclerc, G. (2020). Traumatologie de la cheville: approches modernes des fractures bimaléolaires. *Journal de Chirurgie Orthopédique*.