

# A Malunited Fibula with raised Lateral Malleolus treated Surgically by Fibular Osteotomy and Plating

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## Abstract

Isolated fibular fractures are often considered innocuous and treated conservatively. They may malunited and predispose the ankle to severe twisting injuries. We present one such case where the patient presented with twisting injury to the ankle. Radiograph revealed a malunited fibula which was high riding. To prevent future such episodes, fibula was pulled down by doing an osteotomy and was stabilised with a plate. The union was uneventful and at final follow up of two years the patient is symptom free

**Keywords:** malunited fibula, Osteotomy

### Case Presentation:

A 25-year old male presented to us with the complaint of excruciating pain and swelling in the ankle of the right leg following a fall while playing basketball.

### Case History:

This right-hand dominant male fell upon twisting the ankle on his right leg, three days prior to presenting to us, while playing basketball with his friends. He experienced severe, shooting pain shortly after the injury, which had eventually worsened over the next two days. The pain had become so severe that it was impossible for the patient to rest his foot on the ground even with support. His family members attempted to bring down pain and swelling using ice-packs, but to no avail. He self-administered a course of non-steroidal anti-inflammatory drugs (NSAIDs) for pain relief, but these medications failed to alleviate pain and inflammation. He

was having difficulty in lifting his right leg and his movements became very restricted and barely minimal, albeit with support from people at home. Physical activity with the right leg was almost impossible. He was a regular basketball player and in addition, kept himself physically active through several regular warm-up and practice sessions. However, the ankle injury had kept him away from active sporting activities. There was no history of any previous trauma or major injury to his ankle or leg. Also, there was absolutely no history of any other comorbid conditions.

### Family History:

Non-significant

### Social History:

The patient was neither a smoker nor an alcoholic.

### Findings upon Clinical

#### Examination:

- He was of moderate built and weighed approx. 55 kg.
- There was swelling in the right ankle, and tenderness could be felt upon palpation.

- The pain severity as assessed on visual analog scale (VAS) was found to be severe (VAS: 8-9).
- Active and passive range of motion of the affected region was limited.
- The movements of his right leg and right ankle were normal.
- An anteroposterior and lateral radiograph views of his right ankle revealed malunited fibula with lateral malleolus gone up with valgus foot, as illustrated below in Figure 1.
- Other systemic examinations did not reveal any abnormality.
- The patient was counselled regarding his condition and was advised to undergo surgery.

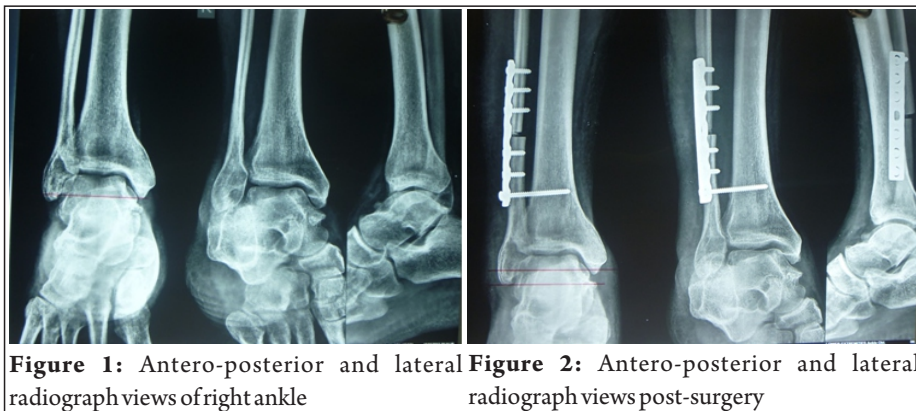
### Management:

The malunited fibula with raised lateral malleolus was surgically repaired by fibular osteotomy together with transportation of lateral malleolus inferiorly followed by plating. This has been demonstrated in Figure 2 below. Post-surgery, the patient was advised an extensive physiotherapy regimen involving exercises to improve strength, flexibility and balance. It also included a plan for gradual return to normal activity.

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**Figure 1:** Antero-posterior and lateral radiograph views of right ankle

**Figure 2:** Antero-posterior and lateral radiograph views post-surgery

### Discussion:

The epidemiology of ankle fractures is as diverse as the nature of studies exploring this issue. A hospital-based study showed that ankle fractures were more predominant among males and that the mean age at presentation was 27.5 years [1]. A population-based study demonstrated that the annual incidence rate of hospitalizations due to ankle fractures was 71 per 105 person-

years[2]. Ankle injuries and fractures adversely impact the quality of life of the patients[3]. Another study cited that female athletes playing basketball were more prone to develop ankle injuries[4]. In the present case scenario, the patient presented with isolated lateral unimalleolar fracture at the age of 25. Operative management of the lateral malleolus most commonly involves open reduction and internal fixation following standard Arbeitsgemeinschaft

für Osteosynthesefragen (AO) techniques[5]. Literature has cited that corrective osteotomies for fibular malunion demonstrate good or excellent results in more than 75% of the patients. It has been recommended that reconstructive fibular osteotomy be carried out to avoid or postpone sequela of post-traumatic degeneration, an ankle arthrodesis or supramalleolar osteotomy[6]. The patient, in the present case scenario, underwent fibular osteotomy and inferior transportation of the lateral malleolus followed by plating. Plating is seen to be beneficial in patients with lateral malleolus fractures[7,8]. Thus, excellent clinical outcomes were obtained upon fibular osteotomy followed by plating of the lateral malleolus.

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