

Management of Stress Fracture in Distal Fibula in a Patient with Flatfoot: A Case Report

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Abstract:

Background: Flatfoot is a common foot condition characterized by flattening of the arch. This condition can lead to increased stress and strain on the feet, leading to a higher risk of stress fractures. The distal fibula is a common site for stress fractures, and prompt recognition and management are essential to prevent long-term complications.

Objective: This case report describes the successful management of a stress fracture in the distal fibula in a patient with flatfoot using physiotherapy treatment.

Design: A single case study

Methodology: A 40-year-old female patient with a history of flatfoot. The patient was diagnosed with a stress fracture in the distal fibula after an X-ray was taken. The patient received a combination of manual therapy, exercise therapy, and modalities, including ultrasound and electrical stimulation.

Result: After 12 weeks of treatment, the patient reported significant improvement in pain and function, and radiographic evidence showed healing of the stress fracture.

Conclusion: The result of this case suggests the importance of early recognition and effective management of stress fractures in patients with flatfoot and highlights the role of physiotherapy in the management of these conditions.

Keywords: Flatfoot, stress fracture, and fibular loading

Introduction:

Flatfoot, also known as pes planus, is a common foot condition that affects approximately 20-30% of the general population. Flatfoot is a condition in which the arch of the foot collapses, leading to a loss of the normal arch and increased stress on the feet and lower extremities. This condition can result in pain, instability, and altered biomechanics, which can put an individual at an increased risk of developing stress fractures in the distal fibula [1].

Stress fractures are a common type of overuse injury that occur when bones are subjected to repeated or excessive stress [1-2]. These fractures are particularly common in athletes and active individuals who engage in high-impact sports or activities. Stress fractures can occur in various bones of the body, but the most common sites include the tibia, metatarsals, and fibula. In this case report, we will be focusing on a stress fracture in the distal fibula, which is located in the lower leg.[2]

Distal fibula stress fractures are relatively uncommon but can cause significant pain and discomfort, affecting an individual's quality of life and ability to perform daily activities [3]. This type of stress fracture occurs when the bone is subjected to repetitive loading or excessive force, leading to microfractures that eventually cause the bone to weaken and break. The risk of developing a distal fibula stress fracture increases in individuals with certain conditions or biomechanical abnormalities, such as flatfoot.

Case Report:

A 40-year-old female patient with a history of flatfoot presented to physiotherapy clinic with pain and swelling in the right ankle. The patient reported that the pain had been present for three weeks and had progressively gotten worse. The patient reported difficulty with weight-bearing activities and was unable to walk without pain.

Diagnosis:

- The patient was diagnosed with a stress fracture in the distal fibula after an X-ray was taken. (Figure 1)
- Further imaging, such as an MRI, may be ordered to confirm the diagnosis and assess the extent of the injury. (Figure 4)

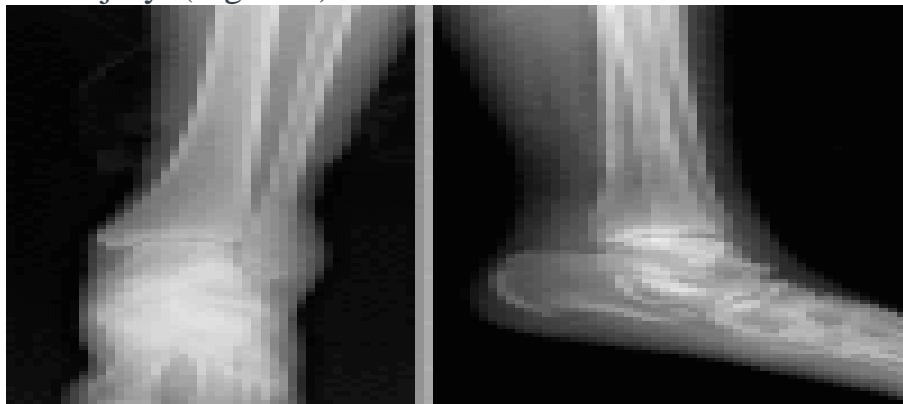


Figure 1



Figure 2



Figure 3

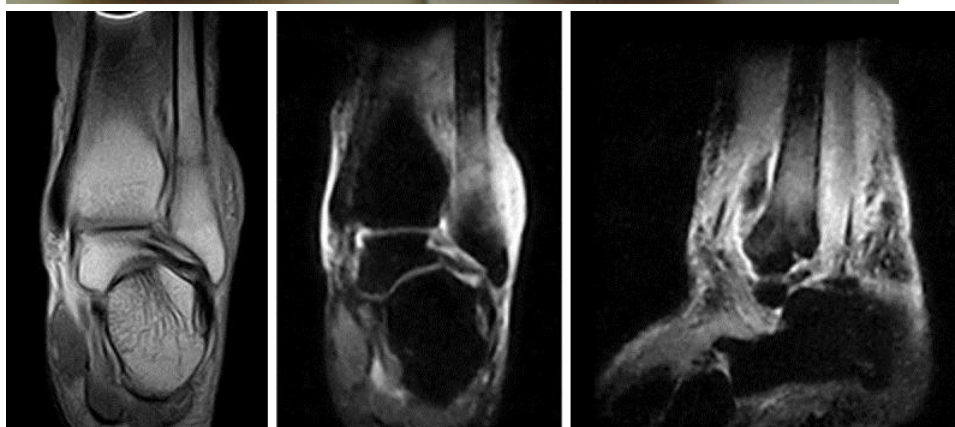


Figure 4



Figure 5

Treatment:

The patient was advised to rest the affected leg. In addition, the patient was fitted with custom orthotics to redistribute weight and offload stress from the affected area.

The patient was also instructed to apply ice to the affected area and take over-the-counter pain medication as needed (non-steroidal anti-inflammatory drugs (NSAIDs) to control pain and reduce inflammation [4].

The patient was referred for physiotherapy treatment, and an initial assessment was performed. The assessment included a thorough evaluation of the patient's medical history, gait analysis, and range of motion testing [4-5]. The patient reported moderate pain on palpation of the distal fibula, and there was evidence of swelling and tenderness in the area.

The physiotherapy treatment included a combination of the following:

1. Manual Therapy: The patient received joint mobilization and soft tissue mobilization to the ankle and foot to improve range of motion and reduce pain.

2. Exercise Therapy: The patient was prescribed weight-bearing and non-weight-bearing exercises to improve strength, flexibility, and balance. The weight-bearing exercises included calf raises and squats, and the non-weight-bearing exercises included ankle dorsiflexion and plantar flexion exercises.

3. Modalities: The patient received ultrasound therapy to promote healing and reduce pain, as well as electrical stimulation to improve muscle activation.

4. Crutch Use: The patient was advised to use crutches for support during weight-bearing activities to reduce stress and strain on the affected area and allow for proper healing [6-7-8].

Outcome:

The patient received 12 weeks of physiotherapy treatment, and during this time, the patient was monitored closely for progress.

- The patient reported significant improvement in pain and function after six weeks of treatment, and
- The patient was able to regain strength and mobility in her lower leg.
- Radiographic evidence showed healing of the stress fracture after 12 weeks of treatment [11].
- The patient was able to return to full weight-bearing activities and reported no pain or swelling in the area.

Discussion:

Weight, special force broken bones representatively start from cyclic, going through again and again adding weight, amount that is greater than the bone's machine-like power [9]. This case report highlights the successful management of a stress fracture in a patient with flatfoot requires a comprehensive approach that takes into account the underlying causes of the condition. In this case, the combination of manual therapy, exercise therapy, and modalities was effective in reducing pain, improving function, and promoting healing [6-7]. The manual therapy and exercise therapy improved range of motion and strength, while the modalities improved tissue healing and reduced pain [10]. The use of crutches during weight-bearing activities helped reduce stress and strain on the affected area and allowed for proper healing [12].

Conclusion:

This case report highlights the importance of early recognition and effective management of stress fractures in patients with flatfoot [13]. Physiotherapy treatment, including manual therapy, exercise therapy, and modalities, was successful in the management of the stress fracture in the distal fibula. The combination of treatments improved pain, function, and promoted healing [14]. This case report supports the use of physiotherapy as a safe and effective treatment option for stress fractures in patients with flatfoot and highlights the role of physiotherapy in the management of these conditions [15].

In conclusion, it is essential to address the underlying causes of flatfoot in the management of stress fractures [16]. Physiotherapy treatment can play a crucial role in

the management of stress fractures in patients with flatfoot, and healthcare providers should consider referral to a physiotherapist for comprehensive evaluation and treatment [17].

Disclosure of conflict of interest

None.

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