

# Calcaneal Osteomyelitis - A Rare Complication of Steroid Injection for Plantar Fasciitis - A Case Report

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## ABSTRACT

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Plantar fasciitis is commonly treated with corticosteroid injections to decrease pain and inflammation. Therapeutic benefits often vary in terms of efficacy and duration. Rupture of the plantar fascia has been reported as a possible complication following corticosteroid injection, but we present a rare complication of Osteomyelitis of calcaneum following corticosteroid injection. A 41-year-old female patient presented with complaints of back ache and difficulty in walking with no history of any previous trauma. Detailed history revealed that she had taken steroid injection for heel pain. Examination revealed bluish discoloration and swelling just below the medial malleolus and around the heel with local rise of temperature and severe restriction of range of movement of left ankle. MRI investigation revealed osteomyelitis of posterior third calcaneum with abscess inferior to calcaneum involving plantar muscles. Patient underwent surgical debridement for the same.

Steroid therapy is a valuable adjunct to other therapy measures, including plantar fascial stretching. However, one should be cognizant that overuse of steroid injection can lead to severe complications. Steroid injections should be performed with ultrasound monitoring to reduce complications.

**Keywords:** Plantar Fasciitis, Steroid Injections, Calcaneum, Osteomyelitis

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## INTRODUCTION

Plantar fasciitis is a common condition causing heel pain. It often responds well to conservative treatment such as nonsteroidal anti-inflammatory medications, podiatry, and physiotherapy. In some cases, when symptoms persist despite the above treatment, injection with steroid is an accepted and commonly used treatment. Rupture of the plantar fascia has been reported as a possible complication following corticosteroid injection but we present a rare complication which presented as osteomyelitis of calcaneum following corticosteroid injection.

## CASE REPORT

A 41-year-old woman patient presented to outpatient department with complaints of low backache and difficulty in walking and inability to do her daily activities because of pain. On examination she was limping, walking on fore foot of the left leg. Straight leg raising

test was bilaterally negative, range of movements of hip and knee were normal. Range of movements of left ankle joint was limited with pain. There were no positive clinical findings in the lumbar spine for low back pain. Examination of the left foot revealed a swelling just below the medial malleolus and around the heel which was soft and fluctuating associated with



Figure 1. Left foot with swelling below medial malleolus

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Figure 2. Closer view showing the reddish swelling



Figure 3. Red swollen heel

local rise of temperature and severe tenderness over the heel (**Figure 1**).

With these findings in left ankle joint, a detailed history was taken which revealed that the patient had pain in the left heel and difficulty in walking one year back which was gradual in onset and pain was more in the morning. She was initially given NSAIDs with no relief and later given corticosteroid injection. Next day patient developed swelling with severe pain around the heel (**Figures 2 & 3**) and around the medial malleolus. Swelling gradually increased within 3-4 days. She also found difficulty to bear weight on that foot and an X-ray of left ankle joint was taken (**Figures 4 & 5**).

Conservative treatment with antibiotics and NSAIDs

were continued for 1 month. She had only mild relief for few days with repeated recurrence of symptoms. Later MRI was done and reported as osteomyelitis of posterior third of Calcaneum with abscess inferior to calcaneum involving plantar muscles, for which patient underwent surgical debridement and soft tissue excision (**Figures 6,7,8**).

She was on plaster immobilization for 3 months and later started weight bearing and walking. She was advised not to bear weight on the heel, so she started walking on forefoot and this resulted in low back ache because of the abnormal walking posture and weight transmission.



Figure 4. X ray of left ankle joint



Figure 5. Xray with calcaneum showing features of osteomyelitis



Figure 6. Post debridement X ray

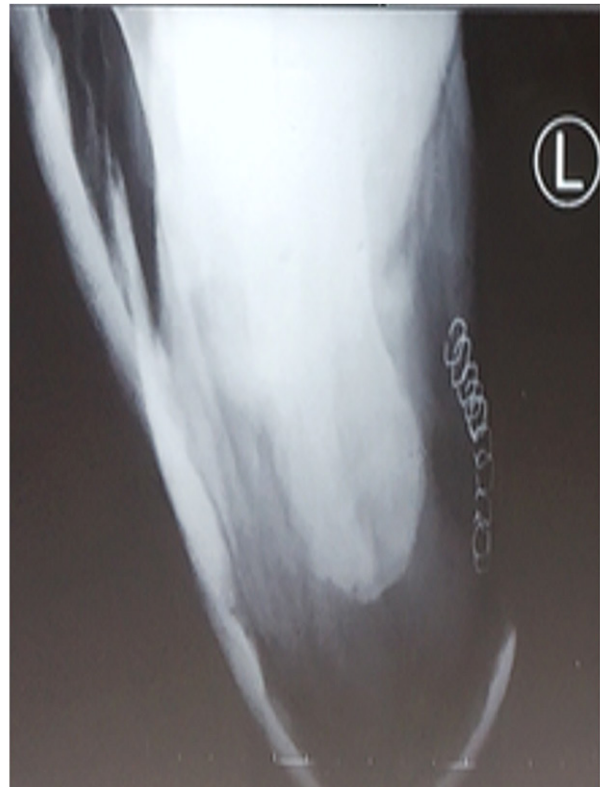


Figure 7. Calcaneum post treatment

## DISCUSSION

Steroid injection is an accepted and effective treatment in plantar fasciitis. Yucel et al advocate giving injection using palpation or ultrasound as referencing as this is more effective and efficient than physical therapy alone.<sup>1</sup> Lee and Ahmad compared autologous blood injection against corticosteroid injection and concluded that steroid is superior in terms of speed and extent of improvement.<sup>2</sup> Tatli and Kapasi reported that steroid therapy, when coupled with physiotherapy, can provide efficacious pain relief, but they recommended that steroid injections should be combined with ultrasound monitoring to reduce complications.<sup>3</sup> Very few complications of steroid injection were reported in the literature .

Other than Calcaneal osteomyelitis, the complications of plantar fascia injection described in the literature include sterile abscess formation, lateral plantar nerve injury and plantar fascia rupture.

Calcaneal osteomyelitis is difficult to manage and requires a multidisciplinary approach.<sup>4</sup> Appropriate limb salvage procedures including bone and soft tissue debridement with infection control offer a good functional outcome for these patients.<sup>5</sup>

## CONCLUSION

Steroid therapy is a valuable adjunct to other therapy measures, including plantar fascial stretching for the treatment of Plantar fasciitis. Rare but potentially severe complications can arise from steroid injections used to treat plantar fasciitis. This case report highlights the risk of calcaneal osteomyelitis associated with such injections, stressing the significance of recognizing this complication and advocating for cautious steroid usage in enthesopathies. Surgeons are urged to discuss this risk with patients when obtaining consent for the injection. Ultrasound guidance should be utilized to improve injection target and monitor soft tissue changes, thus preventing complications. Also, the



Figure 8. Heel after soft tissue excision and debridement

author recommends closely monitoring patients who receive steroid injections for plantar fasciitis to minimize risks and facilitate early detection of any complication.

## END NOTE

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