

A Case Report of Bilateral Calcaneal Spur Fracture after Fall from a Height

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Learning Point of the Article:

An awareness of possibility of calcaneal spur fracture in patients with chronic plantar fasciitis after trivial trauma to the heels.

Abstract

Introduction: A calcaneal spur (also known as a heel spur) is a bony outgrowth from the calcaneal tuberosity. Calcaneal spurs are typically detected by X-ray examination. It is a form of exostosis, and it can be fractured as result of trauma as any other bone. An inferior calcaneal spur is located on the inferior aspect of the calcaneus and is typically a response to plantar fasciitis over a period but may also be associated with ankylosing spondylitis (typically in children). A posterior calcaneal spur develops on the back of the heel at the insertion of the Achilles tendon. The only abnormal physical sings are localized tenderness beneath the calcaneum, X-ray sometimes shows a bony spur projecting forward from the under surface of the calcaneal tuberosity. We report a -60-year-old male presented with painful swelling of both heels, after fall from height about 1–2 m, the patient had chronic plantar fasciitis. X-ray done, revealed bilateral calcaneal spur fracture (distal tip), associated with posterior calcaneal spur. The patient treated with well-padded posterior slab for 2–3 weeks, ice pack, analgesia, and non-weight bearing.

Case Reports: A 60-year-old man had history of trauma (fall from height about 1–2 m) on his heels, he presented with painful swelling on both heels, with mild limitation of ankle movement. On examination, there were a tender, swelling, mild ecchymosis around the heels, with painful limitation of ankle motion, and pain on weight-bearing. Radiological examination was done for spine, pelvis, hips, all within normal, and ankle X-ray. A/P and lateral revealed bilateral fracture of calcaneal spur. The patient was treated with rest, elevation, ice pack, and analgesia for 2–3 days, then applications of back slab for 2–3 weeks. By the end of 3rd weeks, the back slab was removed and continue crepe bandage and non-steroidal anti-inflammatory drugs. After 2–3 months of follow-up, the patient no longer had swelling and pain, only mild symptoms of painful heel syndrome.

Conclusion: This article presents a rare case of bilateral calcaneal spur fracture in the patient with plantar fasciitis and calcaneal spur, following trauma to both heels, so an awareness of this condition as one of the differential diagnoses of painful heels following trauma.

Keywords: Calcaneal spur, heel pain, fracture calcaneal spur.

Introduction

A calcaneal spur (also known as a heel spur) is a bony outgrowth from the calcaneal tuberosity. Calcaneal spurs are typically detected by X-ray examination. It is a form of exostosis, and it can be fractured as result of trauma as any other bone [1, 2].

An inferior calcaneal spur is located on the inferior aspect of the calcaneus and is typically a response to plantar fasciitis over a

period but may also be associated with ankylosing spondylitis (typically in children). A posterior calcaneal spur develops on the back of the heel at the insertion of the Achilles tendon [2, 3, 4].

The only abnormal physical sing is localized tenderness beneath the calcaneus at the heel, X-ray sometimes shows a bony spur projecting forward from the under surface of the calcaneal tuberosity.

Author's Photo Gallery



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Figure 1: Plain radiograph (lateral views) showing fracture of bilateral calcaneal spur.

We report a 60-year-old male presented with painful swelling of both heels, after fall from height about 1–2 m, the patient had chronic plantar fasciitis.

X-ray done, revealed bilateral calcaneal spur fracture (distal tip), associated with posterior calcaneal spur.

The patient treated with well-padded posterior slab for 2–3 weeks, ice pack, analgesia, and non-weight-bearing.

Case Report

A 60-year-old man had history of trauma (fall from height about 1–2 m) on his heels, he presented with painful swelling on both heels, with mild limitation of ankle movement.

On examination, there was a tender, swelling, mild ecchymosis around the heels, with painful limitation of ankle motion, and pain on weight-bearing.

He had no other injuries in spine or hips in form of fracture or fracture dislocation.

Radiological examination was done for spine, pelvis, hips, all within normal, and ankle X-ray. A/P and lateral revealed bilateral fracture of calcaneal spur (Fig. 1).

Blood investigations was done (hemoglobin, erythrocyte sedimentation rate, uric acid, blood urea, and blood sugar) all within normal limit.

The patient gave details history of planter fasciitis for more than 6 months, with different modalities of treatment such as non-steroidal anti-inflammatory drugs (NSAID) and local steroid injection and the patient had previous X-ray taken for both heels revealed bilateral calcaneal spur.

The patient was treated with rest, elevation, ice pack, and analgesia for 2–3 days, then applications of back slab for 2–3 weeks. By the end of 3rd weeks, the back slab was removed and continue crepe bandage and NSAID.

After 2–3 months follow-up, the patient no longer had swelling and pain, only mild symptoms of painful heel syndrome.



Figure 2: Plain radiograph (lateral views), after 2 months

Local steroid injection in form of methylprednisolone was used for both heels by the end of 3rd month.

During follow-up period by the end of the 2nd month, X-ray was done (Fig. 2) fracture line still obvious, but there are no signs of acute symptoms and the patient can walk free of pain.

Discussion

The heel pad has a shock absorbing function, it consists of dense strand of elastic fibrous tissue from circular or cone-shaped septa which enclosing packed fat cells [1, 2, 4, 5].

Jorgenson [4] assessed the shock absorbing function of the heel by, measuring compression on lateral radiograph, loaded, and unloaded by body weight with aging and repeated trauma, repetitive traction and degeneration could produce microscopic tears and cystic degeneration in the origin of the planter fascia, as well as and probably more frequently the flexor digitorum brevis immediately beneath the planter fascia. To support this statement, the location of the traction spur on the anteromedial planter aspect of calcaneal tuberosity coincides with the origin of flexor digitorum brevis.

The calcaneal spur can be found with a symptomatic heel, this was achieved by most studies

but are commonly associated with heel pain due to plantar fasciitis; however, the fracture of the spur is extremely rare reported as bilateral, following trauma like fall.

Bilateral non-union of the calcaneal spur fracture was reported after direct trauma due to fall many months before clinical presentation as recurrent pain on weight-bearing [6, 7].

An awareness of this condition is mandatory to make a prompt diagnosis, in any case of chronic plantar fasciitis with recent trauma to the heels.

The conservative management of these fractured spur mostly sufficient to relieve pain and initial swelling in form of rest, ice, protective splint or short-term cast, and non-steroidal anti-

inflammatory medications.

For resistant cases of chronic painful plantar fasciitis, local steroid injection, silicon heel shoes, and extra corporeal shock wave therapy can be beneficial, more recently platelets rich plasma PRP, which are used widely to relieve and treat plantar fasciitis [4,5,8].

The calcaneal spur excision with release of planter fascia was one of treatment option of resistant painful heel syndrome.

Computed tomography scan of the calcaneus plays an important tool to exclude stress fracture of the calcaneus, as its one of the differential diagnoses of plantar fasciitis.

The fracture of one or both spurs is rare condition but may be a presenting symptoms of a painful heel syndrome, we believed that these spur fractures can healed without significant complications with conservative measures; however, a long-term follow-up is required with X-ray to assess the healing process.

Most of studies could not found a strong relation between calcaneal spur and painful heel, so the presence of the spur does not indicate the disease and its absence does not exclude the

syndrome and the pathology is in the planter fascia and not in the spur [1,2,4].

The fracture of a calcaneal spurs is extremely rare, and few cases are reported, but with recent trauma as in our case that results in fracture both heel spurs (as bilateral) are not reported up to our knowledge [6,7,9,10].

Conclusion

This article presents a rare case of bilateral calcaneal spur fracture in patient with plantar fasciitis and calcaneal spur, following trauma to both heels, so an awareness of this condition as one of the differential diagnoses of painful heels following trauma.

Clinical Message

Calcaneal spur fracture can be happened with plantar fasciitis patients, and the X-ray is essential for diagnosis and follow-up.

Declaration of patient consent : The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's parents have given their consent for patient images and other clinical information to be reported in the journal. The patient's parents understand that his names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil **Source of support:** None

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