Atypical Presentation of S1 Radiculopathy Like Plantar Fasciitis

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ABSTRACT

Objective: This case report presents a patient that had an atypical presentation of radiculopathy which was misdiagnosed as plantar fasciitis.

Clinical features: A 67-year-old male patient had presented with primary complain of continuous, aching, pain involving the soles of both feet, aggravated with walking. He had been treated as a case of plantar fasciitis, including depot steroid injection. He had presented to our clinic failing these measures. Clinical evaluation and neurophysiologic study diagnosed him to be a case of bilateral S1 radiculopathy.

Conclusion: This case emphasizes the importance of differentiation between neuropathic and nociceptive pain by clinical examination and nerve conduction study.

Keywords: Plantar fasciitis, Radiculopathy, Low back pain.


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Conflict of interest: None

INTRODUCTION

Radicular pain can either be an accompaniment of radiculopathy along with motor and sensory involvement or can occur as a solitary manifestation of nerve root irritation. Though any lesion that affects lumbosacral roots can cause radicular pain, the commonest lesion is disk herniation. Only 2% of cases are caused by other vertebral causes (spinal stenosis, osteophytes, spondylolisthesis), neuromeningeal, neoplastic, infectious, vascular or cystic causes. A combination of mechanical, inflammatory, vascular and biochemical changes attributed to epidural presence of herniated disk has been postulated as the etiology for radicular pain. This pain is usually felt as a narrow band, radiating to the lower leg in a dermatomal fashion with neuropathic features.1

Plantar fasciitis is a painful inflammatory condition involving the insertion of the plantar fascia on medial tubercle of calcaneus. Pes planus, pes cavus, leg length discrepancy and overpronation can cause stress forces over the fascia leading to this condition. The primary presentation is heel pain with radiation along the sole.2

Another entity, tarsal tunnel syndrome can present with ankle and plantar pain due to entrapment of the posterior tibial nerve as it traverses beneath the flexor retinaculum behind the medial malleolus.2

In this case report, we are presenting a patient with heel pain which was a diagnostic challenge, due to overlapping manifestation of neuropathic and somatic origin.

CASE REPORT

A male patient of 67 years, presented with complaint of bilateral heel pain of 6 months duration. The onset was gradual, continuous, aching in character, with aggravation on standing and walking, a numerical pain score of 9/10 and associated feature of paresthesia. The patient was non-diabetic with normal routine investigations. He gave a history of being treated conservatively with nonsteroidal anti-inflammatory drugs (NSAIDs) and orthoses followed by depot methyl prednisolone and lignocaine injection into his plantar fascia bilaterally. There was not even temporary relief of pain with these measures. The pain detect tool3 identified it as a nociceptive pain and not neuropathic.

On examination, though there was an aggravation of pain on dorsiflexion of foot, there was no local tenderness at the medial calcaneal tubercle. There was no obvious foot deformity, no evidence of any skin, hair or nail changes. There was no motor or sensory deficit including deep tendon reflexes, vibration and proprioception.

Though the provisional diagnosis was plantar fasciitis, absence of local tenderness, and nonresponse to local anesthetic injection raised the suspicion of another source of origin. A differential diagnosis of tarsal tunnel syndrome was made, and an electromyography (EMG), nerve conduction velocity (NCV) was advised.
On follow-up, the investigation revealed bilateral S1 radiculopathy. The patient was advised gabapentin and an magnetic resonance imaging (MRI) of lumbosacral spine. Magnetic resonance imaging showed annular disk bulge at L2/L3, L3/L4, L4/L5. Annular bulge with postero-central protrusion at L5/S1 with impingement at the bilateral exiting nerve roots. There was partial relief of symptoms with the medication. The patient was planned for a caudal epidural with depot methyl prednisolone on the basis of MRI findings (Fig. 1).

DISCUSSION

Pain in an individual can be of somatic or radicular origin. Pain of lumbosacral radicular origin has a shooting, lancinating character and radiates down the leg along a narrow band and is usually felt both superficially and deeply. In contrast somatic pain is felt deeply in a wide area and has a dull aching character. However, the radicular pain may not be felt dermatomally or distinguished on the basis of distribution. Moreover, there might be coexistence of both neuropathic and nociceptive component confusing the clinical picture.

Plantar fasciitis is diagnosed on the basis of history and physical examination. It is the commonest cause of heel pain, which has a history of gradual onset, worse in the morning after waking up or after rest. Though the pain decreases through the day, it is worsened by the end of the day and on prolonged standing. On examination, there is localized tenderness over the anteromedial aspect of heel and passive dorsiflexion of toes exacerbates the pain. Pain that persists during sleep should raise the possibility of an alternative etiology for heel pain. The patient had a history of continuous pain and occasional paresthesia over the sole. Failure of conventional treatment protocol for plantar fasciitis was an indication for a different pathologic process. Clinical findings suggesting a non-somatic origin of pain was absence of local tenderness. Differential diagnosis included tarsal tunnel syndrome and peripheral neuropathy.

Pain is a subjective experience, and it is challenging to objectify these symptoms of pain. The final diagnosis is a clinical one that is supported by relevant data from electrophysiology and imaging. In this patient the pain was suspected to have a neuropathic origin. Electromyography and NCV establish the presence or absence of a peripheral nervous system lesion and their relevance in generating the painful symptoms. They are useful for the diagnosis of disorders involving nerve roots, plexuses and peripheral nerves.

Absence of H-reflex can detect S1 radiculopathy, as was diagnostic for this patient. Though an entrapment neuropathy had been ruled out at the tarsal tunnel, a bilateral absence of H-reflex can occur in more generalized disease settings like peripheral neuropathy. However, correlation of abnormal lumbar MRI, clinical signs and symptoms, and findings from electrodiagnostic studies is ideal in making the differentiation in diagnosis. As the symptomatology could be confirmed with the findings of MRI the treatment approach could be accordingly changed to reduce neural irritation at its root.

CONCLUSION

We present an atypical case of bilateral S1 radicular pain, which did not have the characteristic quasi-segmental radiation along posterolateral thigh and leg. Absence of sensory and motor involvement had further led to a misdiagnosis of plantar fasciitis. The clinical suspicion aided with neurophysiologic testing and subsequently lumbosacral imaging had delineated the obscure clinical picture in this patient and helped in his management.

REFERENCES