A 68-year-old man presented with severe shooting, lancinating pain over the medial half of sole of his right foot. He was suffering from this symptom for the last seven years. Occasionally the pain radiated upwards along the posterior aspect of the leg. There was severe nocturnal aggravation of pain interrupting his sleep. He was investigated elsewhere five years ago with magnetic resonance imaging (MRI) of lumbo sacral spine on the presumption of S1 radiculopathy. The MRI showed evidence for degenerative multilevel lumbar disc disease and mild disc protrusion bilaterally at L4-L5 and L5-S1 inter vertebral junction with insignificant root compression. He underwent lumbar microdiscectomy at L5-S1 level at that time for the same complaints. Subsequently with the aggravation of the symptoms, he was treated with various combinations of tricyclic antidepressants and anti-inflammatory drugs, including repeated local steroid injections, without any relief.

Both general examination and systemic examination at the time of admission at the neurology department, Indo American Hospital, Vaikom were unremarkable. There were no neurocutaneous markers, no motor or sensory deficits or evidence of any local lesion. Deep tendon reflexes including bilateral ankle jerks were normally elicited. Nerve conduction study with tarsal tunnel protocol was normal. The well localized severe neuropathic pain pointed strongly to a local pathology. The magnetic resonance imaging of foot showed a well-defined ovoid soft tissue mass lesion measuring 3.3 x 2.8 x 2.5 cm in the medial half of the arch of foot suggestive of medial plantar nerve neuroma [Figures 1 and 2]. The entire lesion was easily excised under local anesthesia and histopathology report was consistent with nerve sheath tumor - schwannoma [Figure 3]. Postoperatively the patient became completely asymptomatic and has been so for the last three years.

Discussion

Tarsal tunnel syndrome results from entrapment of either one or all branches of posterior tibial nerve (lateral plantar, medial plantar and medial calcaneal nerves) in the tarsal tunnel. The etiologies have been classified as

**Figure 1:** MRI foot: Sagittal T1 WI - a well defined isointense ovoid shaped soft tissue mass lesion measuring 3.3 x 2.8 x 2.5 cm in the medial half of the arch of foot

**Figure 2:** MRI Foot Sagittal T2 WI - the mass lesion appears hyperintense inT2 WI (with slight heterogeneity)
idiopathic, post traumatic or secondary to space occupying lesions. The various space-occupying lesions includes ganglia, lipoma, neurofibroma and nerve sheath tumor.[2]

The peripheral nerve sheath tumor schwannoma can cause severe neuropathic pain. If the tumor gets located in regions like inner compartments of foot, it may not be detected clinically. Its incidence in foot is uncommon.[2] This may lead to a misdiagnosis of this easily curable pathology. Retrograde radiation of pain along the posterior aspect of foot sometimes mimics S1 radicular pain. The differentiating features of the pain originating at distal peripheral nerve from the S1 radicular pain are well localized pain not following a dermatomal distribution (not crossing the knee joint), grade V power of S1 myotome muscles, normally elicited ankle jerks and the absence of back ache. Nerve conduction may be helpful to diagnose tarsal tunnel syndrome if there is asymmetric involvement on the clinically suspected side. Even then, exact etiology of tarsal tunnel syndrome may go undiagnosed for many years[3] if not properly investigated. Sometimes the nerve conduction study may be normal due to the preservation of either normally or partially conducting plantar nerve.

Conclusion

Chronic disabling foot pain is a common symptom in the neurological practice. It can be due to various causes. The peripheral nerve sheath tumor schwannoma in the tarsal tunnel is a rare cause for the same, but often go unnoticed. A careful history, meticulous clinical examination and appropriate investigations are helpful to avoid misdiagnosis of this easily treatable entity.

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References


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