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Posterior Tibial Nerve Schwannoma Mimicking Tarsal Tunnel Syndrome

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Abstract

Schwannomas are benign, encapsulated tumors derived from myelin sheath of nerves. They usually occur in the head and neck region and are uncommon in the extremities. The authors present a case of a schwannoma of the posterior tibial nerve sheath resulting in tarsal tunnel syndrome of the foot. The diagnosis, in this case, is made within two weeks of presentation and surgery is scheduled. The mass was excised measuring 1.1x0.9 cm and sent to pathology which confirmed the diagnosis of schwannoma of the posterior tibial nerve. The recommended therapeutic modality remains to be the complete excision of the tumor.

Index terms— schwannoma, tarsal tunnel.

1 Introduction

chwannomas are benign, encapsulated tumors derived from myelin sheath of nerves. (1) They originate from Schwann cells of neuroectoderm and as they expand they can compress nerves leading to pain, weakness, and numbness. Schwannomas usually occur in the head and neck region and are uncommon in extremities. (2) They are the most common type of peripheral nerve sheath tumor, with no gender predisposition, nonspecific age group but risk factors include trauma and neurofibromatosis type 2. (3) The tumor is slow growing and eccentric to the nerve fibers. Malignant transformation of schwannoma is very rare. The clinical diagnosis is often straightforward; however, delay for many years have been reported in schwannoma of the posterior tibial nerve as symptoms usually mimic entrapment neuropathy or lumbosacral radiculopathy.

In cases with posterior tibial nerve schwannoma, nerve conduction velocity studies can be abnormal, but, a schwannoma often does not interfere with nerve function, therefore delayed conduction velocities are nonspecific for this lesion. (4) Ultrasound can confirm the presence of the schwannoma, but magnetic resonance imaging (MRI) is the modality of choice to identify the tumor, with its margins and characteristics. (5) Nevertheless, MRI cannot distinguish between malignant and benign tumors. (6) Author ? ? ? ¥: Department of Orthopedic Surgery and Traumatology, Saint Georges University Medical Center, Balamand University, Achrafieh, Beirut, Lebanon. e-mail: josephmaalouly2@gmail.com Author ?: Department of Orthopedic Surgery and Traumatology, Clemenceau Medical Center.

2 II.

3 Case Report

A 39 y.o. Male patient previously healthy presented with left foot pain and numbness of 2 months duration. Patient denies any history of trauma and has no history to suggest neurofibromatosis. On physical exam, a small mass was palpated posterior to the medial malleolus with a positive Tinel sign. Radiographs were normal and requested MRI revealed a nerve sheath tumor (fig 1), most likely a schwannoma, adhering to the flexor hallucis longus tendon and posterior tibial nerve roots. Removal of the tumor is scheduled.

Under general anesthesia, using a medial incision posterior to the medial malleolus and under microscope magnification (fig 2 and 3), microdissection was performed, and the posterior tibial nerve was tagged using vessel loop proximally and distally, the mass was excised measuring 1.1x0.9 cm and is sent to pathology. This is followed by irrigation, hemostasis, and closure of the wound. The patient is discharged the second-day postop with minimal pain, and full weight bearing ambulation. The histologic report confirmed the diagnosis of the posterior tibial nerve schwannoma with no evidence of malignancy (fig **??**). The patient's swelling and numbness resolved within a few weeks, and he resumed his daily activities without discomfort.

4 III.

5 Discussion

The most common tumors of the peripheral nerve sheath are Schwannomas with infrequent occurrence in lower extremities. (7,8) They are slow growing tumors with a very low rate of malignant transformation. Few cases reported in the literature whereby schwannoma of posterior tibial nerve shows compression neuropathy. (**??**) In all reported cases, complete surgical excision showed good results with symptoms resolution.

A peculiar aspect of these tumors is a delay of diagnosis. Nawabi and Sinisi (9) in their series revealed a mean time diagnostic delay of 86.5 months.

Surgical excision is the treatment modality of choice once the diagnosis is clear. (10) All similarly reported cases gave good results with no recurrence when the dissection is thorough. (11) Based on our case and literature review, we believe that any patient presenting with symptoms of neuropathy of the foot without apparent evidence of lumbosacral radiculopathy or compression neuropathy should be investigated further. The mass may not be palpable and delay in diagnosis is common as they are usually deep or misdiagnosed (9). A complete physical exam is crucial in these cases, whereby a positive Tinel sign along the course of the nerve may raise our suspicion of the diagnosis.

Furthermore, the use of a microscope is crucial, to avoid damage of fascicles and for thorough excision of the tumor. (11) IV.

6 Conclusion

From our case, a schwannoma of the posterior tibial nerve could present as tarsal tunnel syndrome with a positive Tinel sign and a palpable mass. MRI confirms the diagnosis. Suspicion should remain high for these tumors as misdiagnosis occurs frequently which leads to wrong treatment administration and failure of therapy. Complete excision of the lesion by thorough dissection taking care to protect the nerve fibers with the aid of microscope magnification is the ideal way of managing such cases. [1]

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Figure 1: Figure 1 :

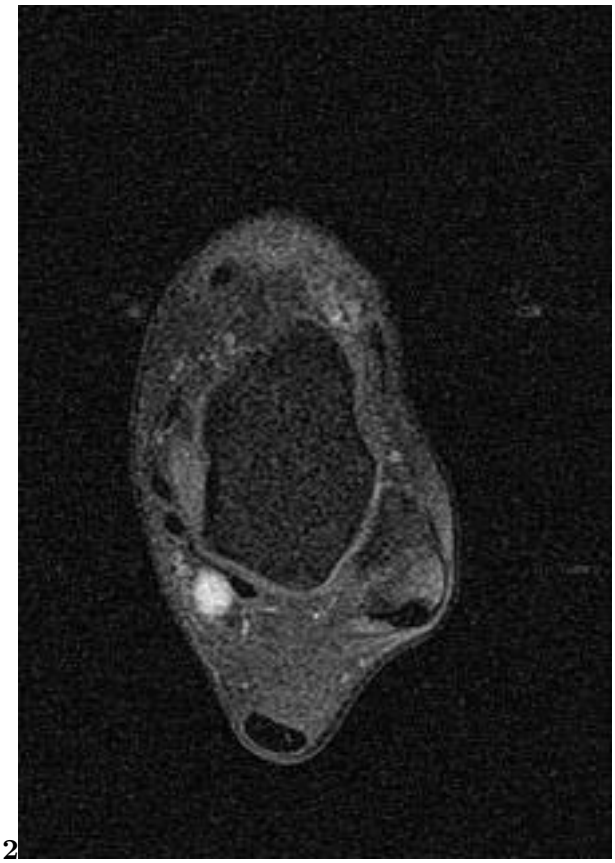

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Figure 2: Figure 2 :

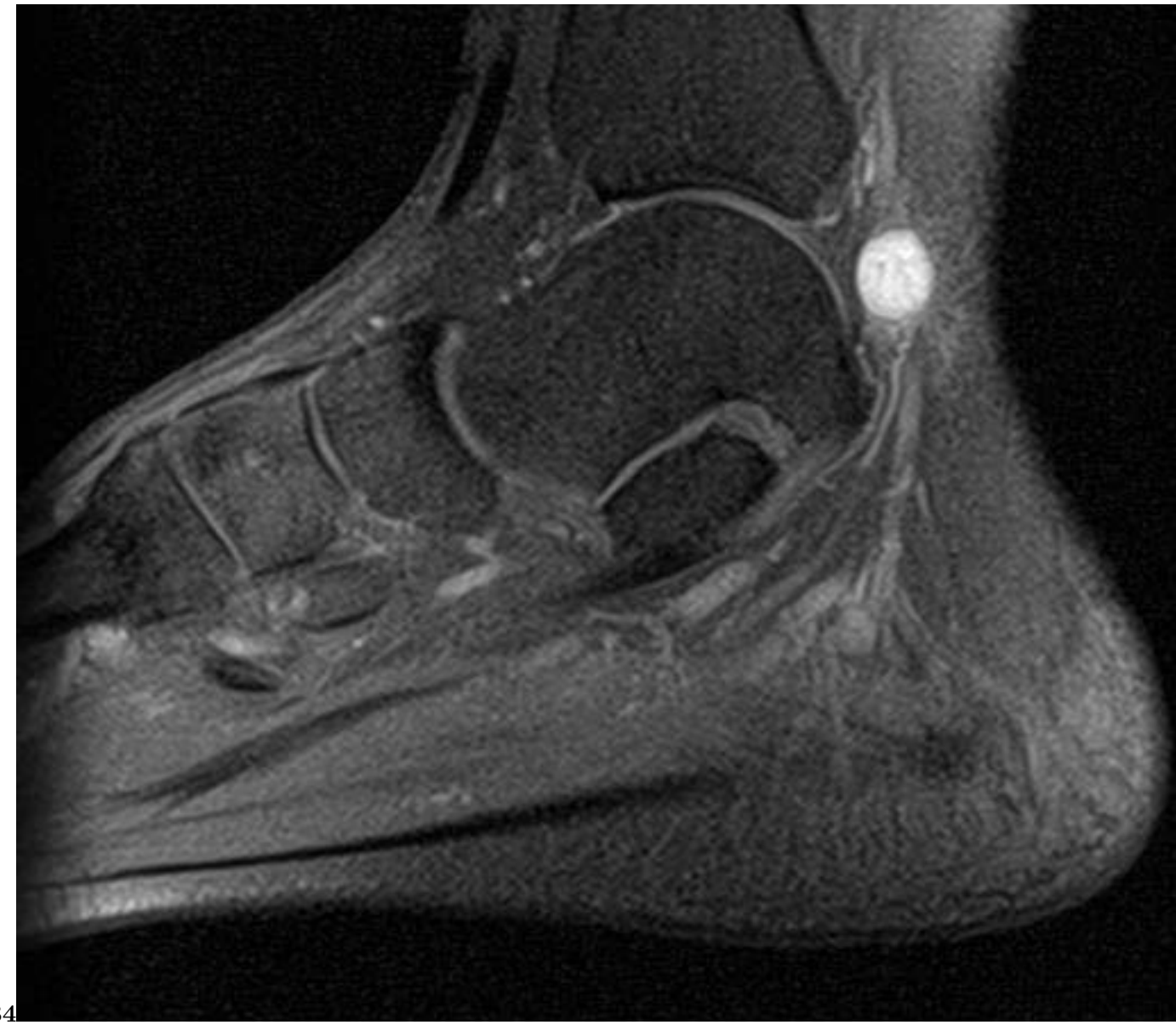

Figure 3: Figure 3 :Figure 4 :

Figure 4:

[Ferner et al. ()] , R E Ferner , M J O'dohertyneurofibroma , Schwannoma . *Curr Opin Neurol* 2002. 15 p. .

[Banshelkikar and Nistane (2015)] 'Centrally Located Schwannoma of Posterior Tibial Nerve Presenting As Lumbosacral Radiculopathy'. S Banshelkikar , P Nistane . *Journal of Orthopaedic Case Reports* 2015 April-June. 5 (2) p. .

[C ()] 'KuntzMagnetic resonance neurography of peripheral nerve lesions in the lower extremity'. C . *Neurosurgery* 1996. 39 (4) p. .

[Still ()] 'Neurilemoma of the medial plantar nerve: a case report'. G Still . *J Foot Ankle Surg* 2001. 40 (4) p. .

[Moholkar ()] 'SawhneyImaging benign soft tissue lesions of the foot'. S Moholkar , JS . *Appl Radiol* 2009. 38 (10) .

[Judd et al. (2014)] 'Schwannoma of the Posterior Tibial Nerve'. Tanya Judd , Taunna Jones , Lauren Thornberry . *Journal of the American Podiatric Medical Association* 2014. September 2014. 104 (5) p. .

[Nawabi and Sinisi ()] *Schwannoma of the posterior tibial nerve -The problem of delay in diagnosis*, Nawabi , Marco Sinisi . 89.814-6.10.1302/0301-620X.89B6.19077. 2007.

[Bhaskara Rajasekaran and Shanmuganathan ()] 'Schwannoma of the Posterior Tibial Nerve Presenting as Tarsal Tunnel Syndrome: A Case Report with Emphasis on the Role of Microscope during Surgery'. Raja Bhaskara Rajasekaran , Rajasekaran Shanmuganathan . ID 4704362. *Case Reports in Orthopedics* 2018. 2018 p. 4.

[Milnes and Pavier ()] 'Schwannoma of the tibial nerve sheath as a cause of tarsal tunnel syndrome-A case study'. H L Milnes , J C Pavier . *Foot* 2012. 22 (3) p. .

[Hallahan et al. (2013)] 'Tarsal tunnel syndrome secondary to schwannoma of the posterior tibial nerve'. Katrina Hallahan , Jessica Vinokur , Sarah Demski , Beverly Faulkner-Jones . 10.1053/j.jfas.2012.12.020. *John Giurini J Foot Ankle Surg* 2014 Jan-Feb. 2013 Aug 13. 53 (1) p. . (Published online)

[Aydin and Karaveli ()] *TuzunerTarsal tunnel syndrome secondary to neurilemoma of the medial plantar nerveJ Foot Surg*, A T Aydin , S Karaveli . 1991. 30 p. .