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Schwannoma: A case report

Dr. Vipin garg (MS) Senior resident , Department of orthopaedics , S.S. Medical College and associated Hospital , Rewa, M.P., India.

Dr. Anjul Agarwal PG Student , S.S. Medical College and associated Hospital , Rewa, M.P., India.

ABSTRACT *Schwannomas can be found in various parts of the body with the most common site being the head. However, in the lower extremity they are most commonly found in the deep tissues of the foot.10 Unlike neurofibromas, Schwannomas rarely metastasize. 4 As a schwannomas grows along the nerve sheath the fibers begin to push outward. We operated a 24 Yr male came with complains of pain in right leg since 12 years. Biopsy showed biphasic pattern of schwannoma with evidence of degenerative changes.*

KEYWORDS : leg ,pain , schwannoma

Introduction

Verocay was one of the first to describe a nerve tumor derived from the myelin sheath in 1908, termed neurinoma.[5] Later in 1935, Stout reported on tumors arising from the nerve sheath and specifically described tumors of neuroectodermal origin.[1] The neuroectoderm consist of Schwann cells and collagen fibers. Schwannomas are tumors that arise from the myelin sheath of nerves and are the most common solitary nerve tumor of the body.[3]

Schwannomas can be found in various parts of the body with the most common site being the head. However, in the lower extremity they are most commonly found in the deep tissues of the foot.[10] Unlike neurofibromas, Schwannomas rarely metastasize.[4] As a schwannomas grows along the nerve sheath the fibers begin to push outward.

History

Asif 24 Yr male came with complains of pain in right leg since 12 years.

On further questionng he gave history of swelling in right leg which increased in size progressively and eventually spread to other parts of same leg laterally. He also gave history tingling associated with pain.

History of smoking for 4 yrs and no history of alcohol consumption or tobacco chewing. He also gave history of late onset of walking at the age of 3-4 yrs and more problem and pain associated with right leg.

He showed at our hospital and was advised FNAC and USG.

FNAC reports were suggestive of spindle cell tumor and USG showed multiple hypoechoic areas in subcutaneous plane with largest measuring upto 2.5 cm.

Following this he was treated conservatively with NSAID's and went to some private site.

He again came back to our hospital after 2 yrs and his work up was done.

Investigations

MRI: MRI reports suggested of benign neoplastic lesion nerve sheath tumor.

Neurologist gave opinion of neurofibroma.

Biopsy showed biphasic pattern of schwannoma with evidence of degenerative changes.

Procedure

Excision of tumor along sural nerve was done on 4/10/12.

Follow up

Patient came for stitch removal after 15 days and subsequently after intervals of 1 month.complains of pain and swelling have subsided and he hasn't developed any recurrence since then.

Discussion

Schwannomas are derived from Schwann cells of the neuroectoderm. Their function is to form the myelin sheath of nerves in the peripheral nervous system, which insulates the nerve and facilitates the transmission of an impulse. Also categorized with a neurinoma, neurilemomma, or neurofibroma, the schwannoma is a benign encapsulated slow growing tumor.[12,13] Unlike neurofibromas, schwannomas do not traverse through the nerve but remain in the sheath lying on top of the nerve. They have a low risk of metastasizing and do not usually present with underlying systemic disease, such as neurofibromatosis. Schwannomas were found to have some transmission types that were autosomal dominant.[13] Schwannomas are most common in patients in the second through the fifth decades of life and have no gender or racial predilection.[12] Their size ranges from about 2-20cm in diameter with the smaller tumors appearing white, fusiform, round and firm. The larger tumors are usually irregular, lobulated and grey or yellowish white.[9]

Schwannomas can present with no symptoms, mild symptoms or severe symptoms mostly affecting the nerves. The first case of a solitary neurilemma was discussed by Liebau, who stated that schwannomas should be looked for in all cases where patients present with pain, paresthesia of leg and foot, especially if all other injury has been excluded.[14] Much like the case presented above, research agrees that most patients present after a long delay with complaints of an isolated superficial palpable mass.[15] Persing, et al., discussed how a proximal invasion of this tumor at the sciatic nerve caused tarsal tunnel like symptoms.[18]

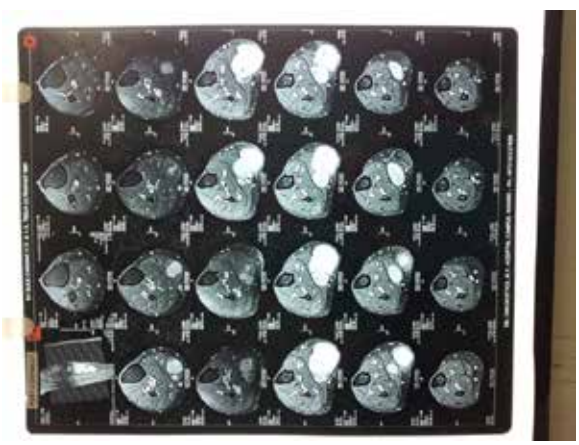
He spoke of how his patient had an unsuccessful tarsal tunnel release then later removal of the schwannoma from the sciatic nerve alleviated all symptoms in the foot.[17] A similar study by Gominak presents a case in which the posterior tibial nerve was thought to be compressed by the flexor retinaculum.[16] Release of the retinaculum was performed ineffectively. It was later determined that the patient had a thigh schwannoma which, when resected, alleviated all lower extremity symptoms

Conclusion

When a patient presents with pain in the foot and ankle a more proximal tumor should be investigated if symptoms persist after failed treatment. Nerve sheath tumors are usually initially recognized by MRI. They have an intermediate to moderately bright signal on T1-weighted images, and a bright, heterogeneous signal on T2-weighted images.[12] MRI is useful in identifying the exact location and size of the tumor. However, it is impossible to actually diagnose a schwannoma utilizing MRI alone. The tumor must be surgically ex-

cised and sent for pathological evaluation. The pathology report will give the definitive diagnosis of schwannoma and establish whether the lesion is benign or malignant. After surgery symptoms should subside but the patient may continue to have paraesthesia, as the above patient. Motor and sensory abnormalities usually return to normal if the schwannoma is found and resected promptly following initial finding. When they are resected the function of the nerve should not be compromised.[13] With most surgical procedures patients are warned of risk of nerve damage, we must especially warn them of an increase in this risk with surgical excision of a schwannoma. The patient in this case study endured several months of post operative numbness. She has been followed since then and relates no symptoms at this time.

In conclusion, schwannomas are rare solitary nerve sheath tumors. They should always be considered as a differential diagnosis when tarsal tunnel syndrome, neuromas, nerve entrapment or radiculopathy[18] is suspected. Schwannomas found in the proximal aspect of the lower extremity can also cause distal symptoms or injury, so this must also be considered, especially if the previous differentials have been ruled out. Early diagnosis can prevent permanent nerve damage, soft tissue or boney deformity.



MRI showing schwannoma

REFERENCES

1. Stout AP: The peripheral manifestations of the specific nerve sheath tumor (Neurilemoma) Am J Cancer 24: 751 – 796, 1935. | 2. Berlin SJ: Soft Somatic Tumors of the Foot: Diagnosis and Surgical Management. Futura Publishing Co, Mount Kisco, NY: 227, 1976. | 3. Stout AP: Tumors of the peripheral nervous system. In Atlas of tumor pathology. Section 2, Fasicle 6. Washington, D.C., Armed Forces Institute of Pathology, 1949. | 4. Giannestras NJ, Bronson JL: Malignant schwannoma of the medial plantar branch of the posterior tibial nerve (unassociated with von Recklinghausen's disease) A Case Report. J Bone Joint Surg 57A (5): 701 – 703, 1975. | 5. Verocay J: Zur Kenntnis der Neurofibroma Beitr Pathol Anat 48:1 – 69, 1910. | 6. Das Gupta TK, Brasfield RD, Strong EW, Hajdu SI: Benign solitary schwannomas (neurilemomas). Cancer 24: 355 – 366, 1969. | 7. Ogose A, Hotta T, Morita T, Yamamura S, Hosaka N, Kobayashi H, Hirata Y: Tumors of peripheral nerves: correlation of symptoms, clinical signs, imaging features, and histologic diagnosis. Skeletal Radiol 28(4):183-8, 1999. | 8. Spiegl PV, Cullivan WT, Reiman HM, Johnson KA: Neurilemoma of the lower extremity. Foot Ankle 6 (4): 194 – 198, 1986. | 9. Wolpa, ME, Johnson JD: Schwannoma of the fifth digit. J Foot Surg 28 (5): 421 - 424, 1989. | 10. Takada E, Ozaki T, Kunisada T, Harada Y, Inoue H: Giant schwannoma of the back. Arch Orthop Trauma Surg 120: 467 –469, 2000. | 11. Maleux G, Brys P, Samson I, Sciot R, Baert AL: Giant schwannoma of the lower leg, (Eur) Radiol. 7: 1031 – 1034, 1997. | 12. Joyce M, Laing AJ, Mullet H, Mofidi A, Tansey D, Connolly CE, McCabe, JP: Multiple schwannomas of the posterior tibial. Nerve Foot Ankle Surgery 8:101 – 103, 2002. | 13. Liebau C, Baltzer AW, Schneppenheim M, Braunstein S,•Koch H, Merk H: Isolated peripheral neurilemoma attached to the tendon of the flexor digitorum longus muscle. Arch Orthop Trauma Surg 123: 98 – 101, 2003. | 14. White NB: Neurilemomas of the extremities J Bone Joint Surg 49A: 1605 – 1610, 1967. | 15. Masson WP: Experimental and spontaneous schwannomas (peripheral gliomas.) Am J Pathol 8: 367, 1943. | 16. Gominak S , Ochoa J: Sciatic schwannoma of the thigh causing foot pain mimicking plantar neuropathy. Muscle and Nerve 21 (4): 528 – 530, 1998. | 17. Carpintero P, Gascón E, Abad JA, Ruza M: Foot schwannomas that mimic nerve - Entrapment syndromes a report of three cases. J Am Podiatr Med Assoc 96(4): 344 – 347, 2006. |