



Unique Journal of Medical and Dental Sciences

Available online: www.ujconline.net

Case Report

SCHWANNOMA OF THE SUPERFICIAL PERONEAL NERVE IN 12 YEAR FEMALE CHILD, A CASE REPORT

Patil Siddaram N^{1*}, Reddy Sandeep², Vamsi², Gannerla Sudhaker³, Pranavi⁴

¹Professor in Ortopaedic, Mamata Medical College, Mamata General & Superspeciality Hospital, Khammam, Telangana, India

²Post-Graduate in Orthopaedic, Mamata Medical College, Mamata General & Superspeciality Hospital, Khammam, Telangana, India

³Post-Graduate in Radio-Diagnosis, Mamata Medical College, Mamata General & Superspeciality Hospital, Khammam, Telangana, India

⁴Junior Resident, Mamata Medical College, Mamata General & Superspeciality Hospital, Khammam, Telangana, India

Received: 27-05-2014; Revised: 20-06-2014; Accepted: 11-07-2014

*Corresponding Author: **Siddaram N Patil**

Professor In Ortopaedic, Mamata Medical College, Mamata General & Superspeciality Hospital, Khammam, Telangana, India

ABSTRACT

Schwannomas (or neurilemmomas) are lobulated, encapsulated tumours that arise from the neurilemmal cells in nerve sheaths. They usually arise in peripheral nerves or nerve roots. They may occur singly or in multiple, and have been found in a number of locations. They are normally benign; however they can rarely be malignant. We present a case of Schwannoma of superficial peroneal nerve that presented as single enlarging mass in anterolateral aspect of right leg. After clinical diagnosis work up is done with ultrasound, MRI and excision biopsy.

Keywords: Nerve Sheath, Superficial Peroneal Nerve, Schwannoma, Neurilemmomas.

INTRODUCTION

Schwannomas or Neurilemmomas are lobulated, encapsulated tumors that arise from the neurilemmal cells in nerve sheaths¹ Schwannomas arise from myelin sheath of nerves and are the most common solitary nerve tumors of the body². They usually arise in peripheral nerves or nerve roots and are relatively slow growing tumors. They may occur singly or in multiple, and have found in a number of locations. They are normally benign, less than one percent becomes malignant into a form of cancer known as neurofibrosarcoma. Schwannomas usually are solitary and occur at random. However in some patients they can be related to a hereditary disorder. Schwannomas can be found in various parts of the body with the most common site being the head. In the extremities most commonly found in the deep tissues of the foot³. Schwannoma of the superficial peroneal nerve is very rare⁴⁻⁶.

Histologically these tumors are composed of different areas composed of different cellular densities. More cellular areas (Antoni A) are composed of a haphazard arrangement of bland cells with spindled and oval nuclei. Loose, less cellular areas (Antoni B) are composed of a loose oedematous and mucinous stroma with fibrillar collagen. The Characteristic Verocay bodies may be seen.

CASE REPORT

A 12-yr old female patient presented to us with complaints of swelling over the anterolateral aspect of right leg lower third region since 1yr. Swelling was insidious in onset, initial size being that of pea nut which gradually progressed to about 5 x 3 x 2 cm at the time of presentation. Patient did not give any history of trauma/prick injury. Patient gives history of previous unsuccessful attempt at excising this mass has been made 3months back. No history of constitutional symptoms and any other similar swellings in the body. On examination proper, swelling extended from the 3cm from tip of lateral malleolus to 8cm from lateral malleolus. Swelling was ovoid in shape with Small wound over anterior aspect of swelling with serous discharge. Swelling was firm in consistency with mild tenderness and no local rise of temperature. It was non-reducible and non-translucent, immobile in both horizontal and vertical direction. Sensations are diminished over dorsum of right foot. No motor weakness present. Movements at right ankle joint are normal.

X-ray revealed well defines lesion in the soft tissue with erosion of underlying bone. Serum calcium and serum phosphorus was 10.2 mg/dl and 3.0 mg/dl respectively. Serum ALP (127 IU/l), parathyroid hormone levels, creatinine kinase,



Figure 1: Clinical Picture of swelling on anterolateral aspect of lower third of leg



Figure 2: fibula showing erosion of the lateral cortex



Figure 3: T1 and T2 images show multilobulated swelling over lower third of leg

aldolase levels, ANA, Vitamin D levels, 24 hours urinary calcium and inorganic phosphate were all within normal limits. Ultrasound of the swelling confirmed large well defined multiple lobulated, hypoechoic lesion with few echogenic areas and fibrous septa in it. MRI of the lower third leg with ankle was done which revealed multilobulated, multiseptated soft tissue lesion in the lower aspect of anterolateral muscle compartment of right leg suggestive of schwannoma and hence excision biopsy was planned for confirmative diagnosis and definitive treatment.

Gross examination of the biopsy specimen revealed grayish white bits measuring 4x3x2 cm, along with multiple tiny bits altogether measuring 2x1x1 cm. cut section shows homogenous grey white nodular areas.



Figure 4: Gross specimen of resected tumour

Microscopic examination smear showed Antoni A area is composed of spindle shaped Schwann cells arranged in interlacing fascicles without any hemorrhage and necrosis.

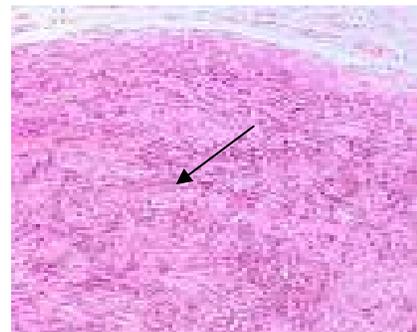


Figure 5: HPE showing Antoni A area composed of spindle shaped cells

DISCUSSION

Schwannomas are lobulated, encapsulated tumors that arise from the neurilemmal cells in nerve sheaths¹. Schwannomas are derived from schwann cells of 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. Schwannomas is a benign encapsulated slow growing tumor⁷⁻⁸. Unlike neurofibromatosis schwannomas do not traverse through the nerve but remain in the sheath lying on top of the nerve. They have a low risk of metastasis. Schwannomas are most common in patients in second decade and have no gender or

racial predilection⁹. They present with no symptoms, mild symptoms or severe symptoms mostly affecting nerves. Most lesions are solitary and present as a slowly growing painless soft tissue mass. Symptoms are unusual, unless the mass has become large enough to compress the adjacent nerve. The first case of a schwannoma was described by liebau, who stated that schwannoma should be looked for in all cases where patients with pain, paresthesia of leg and foot, if all other injury has been excluded⁹. MRI is especially useful in identifying the exact location and size of the tumor. Schwannomas have isointense signal relative to skeletal muscle on T1 –weighted images and increased heterogenous signal intensity on T2-weighted images¹⁰⁻¹¹. “Ancient” schwannomas refer to long standing lesions with advanced degeneration exhibiting calcifications, hyalinization, and cystic cavitation, findings that can be identified on imaging¹². surgical excision can usually spare the parent nerve because the schwannoma is generally separable from the underlying nerve fibres.

CONCLUSION

In summary schwannomas are rare tumours of the nerve sheath that are usually benign. They very rarely affect the nerves of the lower limb. Resection of the lesion can relieve the presenting symptoms, but may also cause further harm.

REFERENCES

1. Russell RCG, Williams NS and Bulstrode CJK. Bailey and Love's Short Practice of Surgery. 23rd Ed, Arnold.2000.
2. Stout AP: Tumors of the peripheral nervous system. In: Atlas of tumor pathology. Section 2, fascic6, Washington, D.C., Armed Forces Institute of Pathology, 1949.

3. Takada E, Ozaki T, Kunisada T, HaradaT, Inoue H: Giant schwannoma of the back. Arch Orthop Trauma Surg. 2000;120:467-469
4. Houshian S, Freud KG. Gigantic benign schwannoma in the lateral peroneal nerve. Am J Knee Surg 1999; 12:41-42
5. Laurencin CT, Bain M, Yue JJ, Glick H. Schwannoma of the Superficial Peroneal Nerve Presenting as Web Space Pain. The Journal of Foot and Ankle Surgery. Vol 34, No 6, 1995
6. Thomas GP, Baco AM, Rosenfeld P. Schwannoma of the superficial peroneal nerve. Internet J Orthop Surg.2000;3(2):12
7. Joyce M , Lating AJ , Muller H, Mofidi A, Tansey D, Connolly CE, McCabe JP. Multiple schwannomas of the posterior tibial . Nerve Foot Surgery 2002;8:101-103
8. Liebau C, Baltzer AW, Schneppenheim M, Braunstein S, Koch H, Merk H. Isolated Peripheral Neurilemmoma attached to the tendon of the flexor digitorum longus muscle. Arch Orthop Trauma Surg 2003; 123:98-101.
9. White NB: Neurilemmomas of the extremities J Bone Joint Surg. 1967; 49A:1605-1610.
10. Hems TE, Burge PD, Wilson DJ. The role of magnetic resonance imaging in the management of peripheral nerve tumors. J Hand Surg(Br)1997; 22:57-60
11. Stull MA, Moser RP, Kransdorf MJ, Bogumill GP, Nelson MC, Magnetic resonance appearance of peripheral nerve tumors. Skeletal Radial 1991; 20:9-14.
12. Schultz E, Sapan MR, Mcheffey-Atkinson B, Naidich JB, Arlen M. case report 872. Ancient, schwannoma (degenerated neurilemmoma). Skeletal Radial 1994;23:593-595

Source of support: Nil, Conflict of interest: None Declared