International Surgery Journal
Bhat TA et al. Int Surg J. 2023 Nov;10(11):1797-1800
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20233340

Case Report

A schwannoma of superficial radial nerve in hand clinically masquerading a subcutaneous lipoma: a very rare case report

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Received: 11 August 2023
Accepted: 12 September 2023

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ABSTRACT

Schwannoma also called neurilemmoma are benign tumours arising from Schwann cells. Schwannoma of superficial radial nerve is very rare. We report a 22 years old female who presented with a painless swelling on the dorsum of the hand simulating clinically a lipoma. Excision of the swelling was performed and on histopathological examination it proved to be Schwannoma. So, while dealing with any lump over dorsum of the hand in the distribution of superficial radial nerve Schwannoma should be kept in mind as one of the differential diagnoses and proper radiological evaluation before excision of swelling should be routinely done followed by histopathological confirmation and immunohistochemistry.

Keywords: Schwannoma, Tumour, Peripheral nerve, Excision

INTRODUCTION

Schwannomas, also known as neurilemmomas are usually non-malignant nerve sheath tumours of peripheral nervous system (PNS) arising from Schwann cells. Schwannoma are ectodermal in origin and are the most common tumor of peripheral nerves constituting around 90% of all nerve tumors and round 5% of all soft tissue tumors with mixed nerves are frequently involved.[1-3] Usually found in age group of 30-60 years with no gender predisposition. Upper limb schwannomas have incidence rate of 19% of cases.[4] Clinically it usually presents as asymptomatic painless lump and may occasionally present with pain and paraesthesia over involved nerve territory. Clinical presentation of schwannoma may be vague and not clear in its symptoms and signs and clinician may confuse it with other soft tissue tumours such as, lipoma, ganglions/tenosynovitis.[2,5] Here we present in this case report a 22-year-old female patient with swelling on dorsum of hand mimicking subcutaneous lipoma clinically. Excision of the swelling was done and after histopathological examination it proved to be Schwannoma.

CASE REPORT

A 22 year old female patient, medically free of any other disease, presented to our outpatient department (OPD) with complaints of painless swelling over the back of her left hand from last 2 years (Figure 1). It was insidious in onset and progressive in growth however it was not creating any difficulty to the patient in doing her activities of daily life (ADL). There was no history of any other swelling in the body. No history of any trauma or any invasive procedure in this region. Also, no history of neurofibromatosis in the family. On local examination, the swelling was around 2×3 cm in size found over the dorsum of the left hand just proximal to the apex of the first web with healthy overlying skin. It was well palpable, non-tender, firm in consistency, cylindrical in shape, having smooth surface and well-defined edges. Mobility was more in the medio-lateral than in the anteroposterior plane. Slip sign was positive as we were

able to slide the fingers off the edge of the swelling. No neurosensory deficit was found distally. Tinels sign was negative. A clinical diagnosis of subcutaneous lipoma was made and patient was prepared for surgical excision as a day care case. We didn't advice any radiological investigation as the presentation of the swelling didn't demand it. After a thorough discussion with the patient, an informed consent was taken for excision biopsy of the swelling and patient was prepared for the procedure. Regional anaesthesia was given to the patient and the procedure was performed under tourniquet control A lazy s-type longitudinal incision was made using 15 size blade and using tenotomy scissors dissection was performed. Intraoperatively we found an encapsulated cylindrical shaped pale-yellow swelling around 1.5×2.8 cm^2 in size with its long axis along the superficial radial nerves fibres (Figure 2). The tumour was arising from the superficial radial nerve fibres and it was completely enucleated under 3.5×loupe magnification without injuring the nerve fibers (Figure 3 and 4). Complete hemostasis was achieved after deflating the torniquet and the wound was closed in 2 layers. The excised tumor was sent for histopathological examination. After full recovery patient was discharged home same day and advised to follow up OPD (Figure 5 and 6).

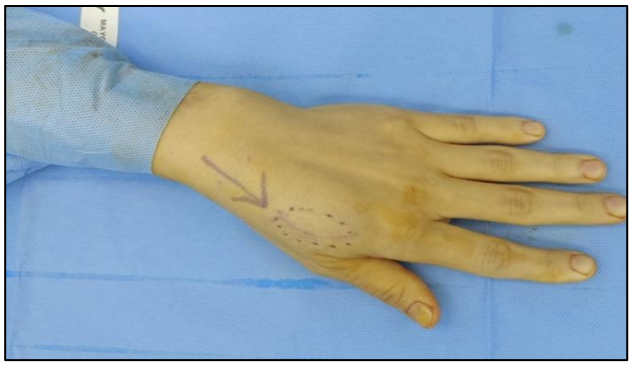

Figure 1: Intraoperative picture a swelling over dorsum of the left hand marked in blue colour.

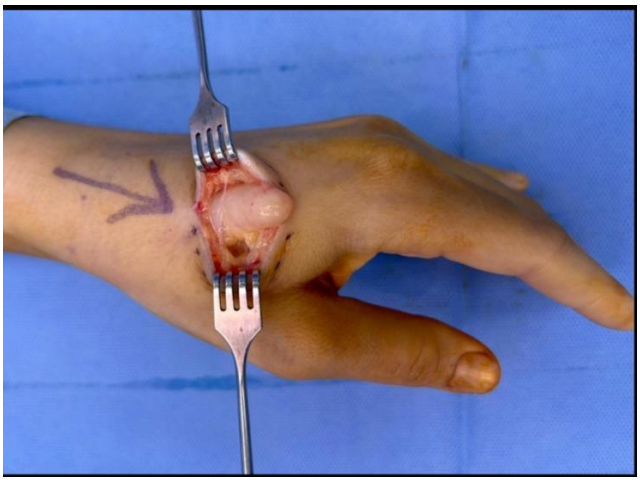

Figure 2: Intraoperative picture of the schwannoma enucleation.

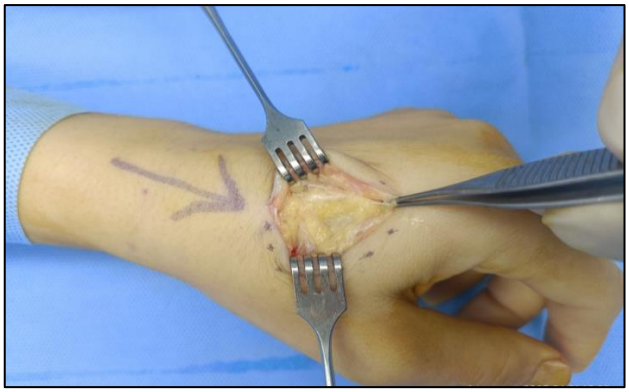

Figure 3: Intraoperative picture of superficial radial nerve after the enucleation of schwannoma.

Figure 4: Intraoperative picture of enucleated tumour.

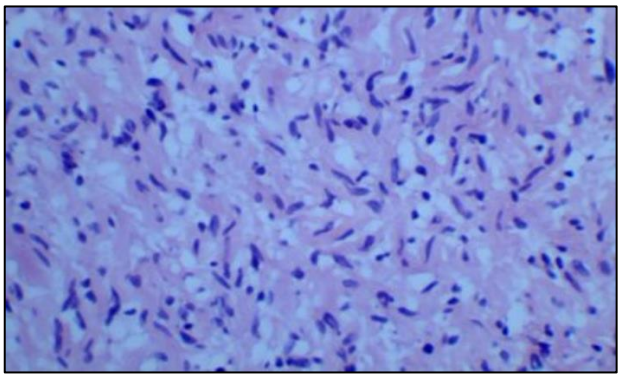

Figure 5: Microscopic picture of the Schwannoma (40×) of this patient.

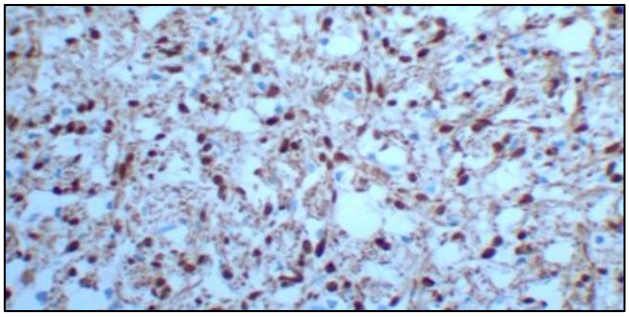

Figure 6: Microscopic picture of the Schwannoma (100×) of this patient.

DISCUSSION

Schwannomas also called neurilemmoma are benign tumours arising from the Schwann cells of PNS.[3] These are rare tumors comprising less than 8% of soft tissue neoplasms but 90% of the all the ectodermal peripheral nerve tumours.[6] Around 90% are sporidic in origin.[7] Commonly found in people in the age group 30 to 60 years with no gender predisposition.[4] These tumours are oval in shape and the growth is extra-fasicular. Clinical presentation of these lesions is vague and nonspecific and often confused with that of other soft tissue tumours like ganglion and tenosynovitis.[2,5] Our patient presented with a painless swelling on the dorsum of the mimicking subcutaneous lipoma. The difficulty in the diagnosis of this tumour is because of its indistinctness and overlap of it's clinical presentation with that of other lesions, rarity of its occurrence, slow growing nature and absence of specific symptoms. So it is diagnosed by its clinical presentation supported by imaging tests.[8] Due to the possible risk of iatrogenic nerve injury open biopsy is not recommended in suspected cases of peripheral nerve sheath tumors.[9]

Excision is done only for the patients who are symptomatic or have aesthetic concerns.[10] Frequency of it's distribution varies among the different body regions and are frequently found in the ear, nose, and throat regions, followed by the trunk and then by the upper limbs (19%) and lower limbs (17.5%).[11] In literature review a frequency of (7%) has been reported for radial nerve schwannomas.[12] Schwannoma of the thumb has been reported in the literature.[13] In our patient it was found on the dorsum of the hand just proximal to the apex of first web space. Our patient was a 22 year old female with Schwannoma involving the superficial radial nerve. A rare type of Schwannoma involving the radial nerve of a 21-year-old male patient was reported by Senol et al.[6] Among the thirty-four patients studied by Adani et al the youngest patient was 20 and the eldest was 78 years of age and the tumour arising from radial nerve was found only in two patients.[2] Although the its clinical picture is not clear, presence of a positive Tinel sign may suggest a diagnosis of Schwannoma. Tinel's sign was absent in our patient, and we didn't advice MRI for her because it was clinically mimicking a subcutaneous lipoma not warranting any imaging. Radiology is not helpful to see the fascicular involvement in cases of Schwannoma. Immunohistochemical staining differentiates Schwannoma from neurofibroma as the latter are positive for Epithelial membrane antigen (EMA), Leu-7 and S-100 marke.[3,10,14] Using microsurgical techniques under loupe magnification it's surgical excision or enucleation is possible without fascicular damage but in some cases resection of the involved fascicles may be performed. Depending on the type of nerve involvement, a functional deficit can result.[14] We did enucleation of the tumour in our patient under loupe (3.5×) magnification using microsurgical techniques. On follow up we did not find any functional nerve deficit in our patient.

CONCLUSION

Schwannoma of superficial radial nerve is very rare tumour, may present with vague and non-specific symptoms leading to misdiagnosis clinically. Clinical assessment with imaging tests should be done in suspected cases to get the preoperative diagnosis. Following microsurgical enucleation of the tumour histopathological examination and immunohistochemistry (IHC) should be routinely done to confirm the diagnosis and differentiate it from neurofibroma.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Bhat TA, Alokaili H, Alkadi RO, Altamimi AS, Mirza MY. A schwannoma of superficial radial nerve in hand clinically masquerading a subcutaneous lipoma: a very rare case report. Int Surg J 2023;10:1797-800.