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**Case Report**

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# From numbness to diagnosis: a case of median nerve schwannoma

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## ABSTRACT

Schwannomas are a common entity, but upper limb schwannomas are rarely encountered. Even in hand, ulnar nerve schwannomas are more commonly reported than median nerve schwannomas. Hence, we present a case report of median nerve schwannoma in a 54-year-old woman. She presented with a benign swelling of 3 cm associated with numbness and pain. On examination, Tinels sign was positive. MRI revealed a well-defined swelling that was hypointense on T1 and hyperintense on T2 STIR images. The swelling was marginally excised, and histopathology revealed the presence of Antoni A and B cells, consistent with Schwannoma. The patient was completely asymptomatic at 1-month follow-up. This case report stands as a testament to how early diagnosis and treatment can help in alleviating the physical as well as psychological stress in such patients.

**Keywords:** Median nerve schwannoma, Tinels sign, Antoni A area, Antoni B area, Verocay bodies

## INTRODUCTION

Schwannomas, also known as neurilemmoma/neurinoma, are benign, peripheral nerve sheath-derived tumours.[1] They are the most common peripheral nerve tumour, found between the ages of 20 and 50 years with similar incidences in males and females.[2,3] Though these tumours are common, its incidence in upper extremities is extremely rare, accounting for only 5% of all tumours in the upper extremity.[2,4]

Schwannomas are usually painless and slow growing. Pain, paraesthesias, weaknesses only occurs after it reaches a certain size.[5,6] Since the swelling majorly remains asymptomatic for long, there is a risk of delayed diagnosis and improper management. Hence herein, we report a case of schwannoma of median nerve and its management in accordance with the current treatment principles.

## CASE REPORT

A 54-year-old healthy woman presented with a solitary swelling over the volar aspect of right hand for 2 months. She first noticed the swelling 2 years back when she was playing drums bare-handed at a family function. The swelling was initially the size of 25 paisa coin, which progressed to the present size over the past one month. She started noticing numbness over the swelling since the past 2 months.

On clinical examination, there was an approximately 3-4 cm swelling extending from the proximal thenar aspect of Right hand till the mid palmar region. The swelling was tender and had mobility only in the transverse direction. Percussion showed Tinels sign was positive. No numbness noted over other dermatomes. No motor weakness/muscle atrophy was noticed. Ultrasound revealed heterogenous area in the subcutaneous plane of right palm with minimal peripheral colour flow. MRI showed a well-defined,

altered signal intensity lesion measuring approximately 3×1.6 cm in the thenar space between the flexor tendons of first and second fingers, appearing hypointense on T1 and hyperintense on T2 STIR, with minimal effusion in radiocarpal, ulnocarpal and intercarpal joints and tiny cystic changes seen in the lunate and triquetral carpal bones. Radiological differentials of neurogenic tumour or synovial sarcoma were proposed, and she was planned for surgical excision and biopsy.

A 7 cm curvilinear incision was made over the swelling along the radial longitudinal palmar crease (Figure 1). Skin and subcutaneous layer was reflected in bulk. Careful marginal dissection around the swelling was carried out (Figure 2). Flexor retinaculum was partially incised and median nerve was traced till the proximal flexor crease of the wrist, to rule out any other associated swellings/attachments.

Tumour was noticed to be encased in smaller fascicles of the median nerve peripherally. A globular shiny swelling measuring approximately 3×2 cm was noticed, which was marginally excised from the nerve and sent for histopathology (Figure 3). Closure was done after thorough wash. Post operatively patient was stable and was started on hand rehabilitation exercises immediately. Histopathology revealed characteristic features of median nerve schwannoma including Antoni A and B areas and Verocay bodies. At 1 month follow-up, the wound has healed completely with no residual swelling and she is back to her daily routine activities without any specific complaints. Preoperative numbness over the area was found to be subjectively better but requires follow-up.

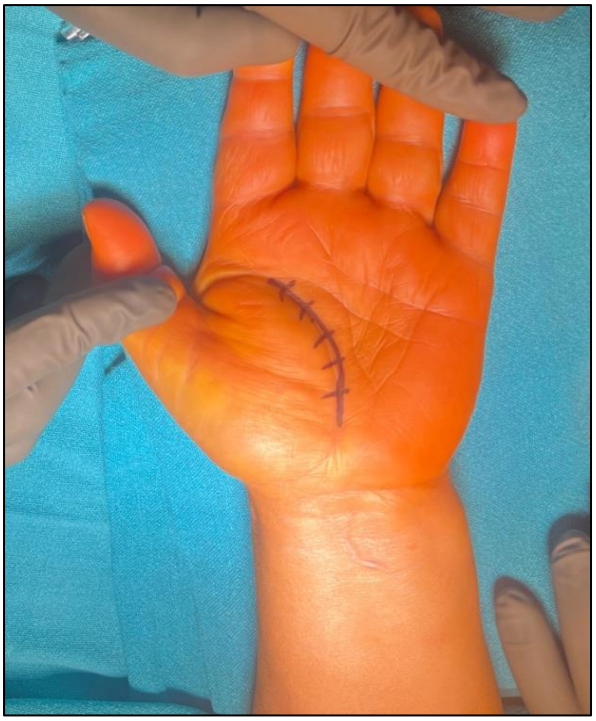

**Figure 1: 7 cm curvilinear incision over the radial longitudinal palmar crease.**

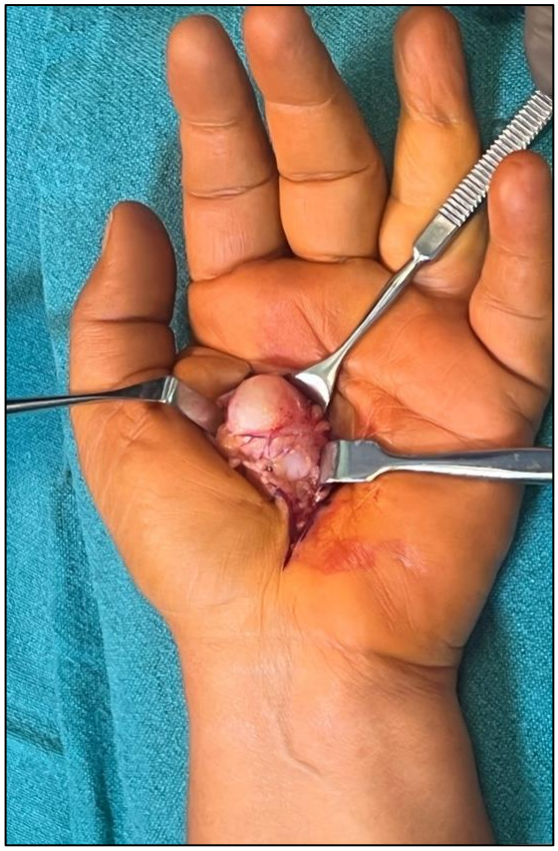

**Figure 2: Careful marginal dissection around the swelling.**

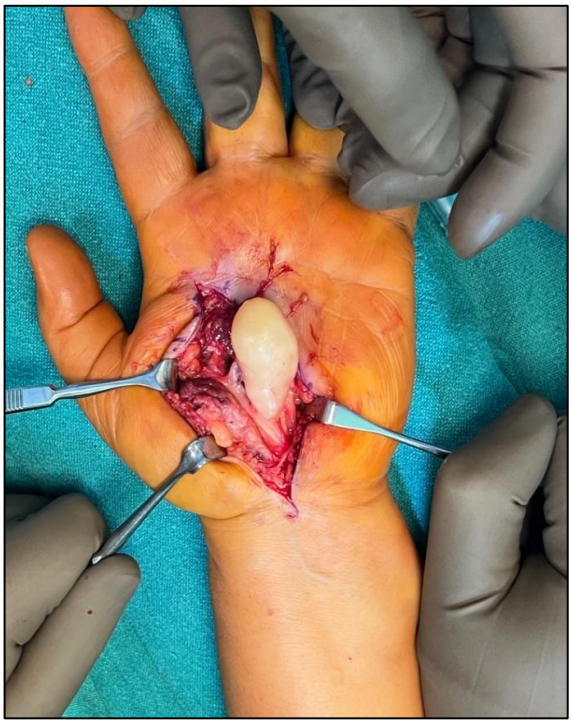

**Figure 3: Shiny, well contained swelling arising from peripheral fascicle of median nerve. The median nerve was traced till the proximal flexor retinaculum to look for the extent of the swelling.**

## DISCUSSION

Although schwannomas are common peripheral nerve sheath tumours, it is particularly uncommon to see it in upper limbs.[2,7] Even on appearance in upper limbs, it is rare for them to present distal to forearm. Schwannomas, hence, comprise only about 0.8-2% of total hand tumours.[5] In the hand, ulnar nerve is usually more commonly involved than median nerve. Only 7% of schwannomas involve the median nerve.[8]

Schwannomas are usually benign and do not produce much symptoms and are slow growing, one of the reasons why diagnosis is usually delayed.[3] These swellings also cause psychological distress to the patients. Large tumours can produce pressure effects on the main nerve and produce chronic changes, leading to sensory/motor deficits. Presence of motor deficits should raise strong suspicion towards malignancy.[9] Hence high level of suspicion and early diagnosis is necessary. Schwannomas can also present with other symptoms including pain, growth in size, neuro deficits, mass effect etc.[8] Hence, suspicious lesions should be worked up with USG/MRI scans.

MRI will present with characteristic features of peripheral nerve sheath tumours. These features include Hypointense swelling on T1 weighted MRI and hyperintense swelling on T2 weighted images.[2] Although diagnostic on MRI, other differentials should be borne in mind before proceeding with surgical excision. Differentials will include: neurofibroma, ganglion cysts, malignant tumours, xanthomas, lipomas etc.[10,11] Once all preoperative workup is performed, all symptomatic swellings should be excised and sent for histopathological analysis.[12]

During surgical excision, a plane is created between the tumour wall and the fascicles and circumferential marginal dissection is done to deliver the tumour.[3] Repair of the epineurium is not required and the muscles that have been split longitudinally must be loosely repaired over the nerve. Histopathological reports are used as a final confirmation for the case.[9] Once the hallmark features of schwannoma is seen in the histopathology including Antoni A and B areas alternating pattern and Verocay bodies, patient can be followed up occasionally on OPD basis after the wound heals.[3,13] Routine follow-up is generally not required as recurrence of the tumour is rare.[14]

In our patient, the symptoms, imaging and surgical specimens were consistent with median nerve schwannoma, as described in the literature, and excision helped in alleviating the patients localized as well as psychological symptoms.

## CONCLUSION

Our case is an ideal example of a median nerve schwannoma, with respect to its conformity to symptomatic, radiological and histopathological findings as mentioned in literature. Early diagnosis and treatment can help in alleviating the physical as well as psychological stress in patients. As recurrence rates are very low, an idyllically diagnosed and excised tumour will give the patient high levels of outcome satisfaction.

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