

# Giant median nerve schwannoma a one of its kind case in a rural tertiary care centre

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Schwannomas are benign nerve sheath tumors commonly involving peripheral nerves. A giant schwannoma of around 3 months duration, originating from the median nerve in the distal aspect and cubital region of left arm in a 45-year-old woman, is reported. There was history of tingling sensation in the forearm and hand. It was 9 cm in length and 7 cm in width.

No neurological deficits were noted on examination. Surgical removal was performed under 4.0X Loupe magnification by separating the nerve fascicles from the tumor. Histological examination revealed cellular schwannoma. Post-enucleation patient improved symptomatically with no neurological deficits or paraesthesia. Although similar cases have been reported in the past, such a case is a first-time occurrence in a rural set-up as ours.

**Key Words:** Median nerve; Giant schwannoma; Forearm

## INTRODUCTION

Peripheral nerve tumors are rare, with an incidence of 1 per 100000 per annum (1). Primarily nerve tumors are most commonly benign. They may arise from peripheral neural sheath or may be intrinsic or extrinsic. The two major types are schwannomas (neurilemmomas) and neurofibromas, the former being more common. Schwannomas arise from Schwann cells in peripheral nerve sheaths. It usually occurs in the age group of 20 to 70 years. Median nerve is one of the common sites for schwannoma. Schwannomas are slow growing tumors and push nerve fascicles aside as they grow (2). Schwannomas are generally asymptomatic. Large schwannomas may present with discomfort as the only presenting complaint of the patient. Paraesthesia may be elicited on tapping the swelling. Magnetic resonance imaging and ultrasound and EMG may help in the accurate diagnosis. Surgical enucleation is the treatment of choice. Grossly the tumors are round or ovoid and encapsulated. Histologically, schwannomas are classified into Antoni A and Antoni B types according to the arrangement of the tumor cells (3). The most common differential diagnoses are ganglion, lipoma or lymph node.

## CASE REPORT

A 45-year-old female presented with a painless swelling in the volar aspect of distal 1/3<sup>rd</sup> of left arm of 3 months duration with complaints of gradual increase in size of the swelling associated with tingling since 1.5 months. There was no family history of neurofibromatosis and no associated clinical features. On examination the swelling measured 9 cm in length and 7 cm in width. The swelling was hard in consistency. It was mobile on the longitudinal axis but not on the transverse axis. There were no motor or sensory deficits. FNAC was suggestive of benign neural tumor. MRI revealed a large ovoid well-encapsulated smooth margined T1 hypointense and T2 heterogeneously solid lesion ~7.9 × 3.4 × 3.7 cm, likely arising from posterior aspect of median nerve causing eccentric displacement of nerve fascicles in the distal 1/3<sup>rd</sup> aspect of left arm. It was found to be causing mass effect in the form of indentation of adjacent muscles of anterior compartment of distal arm. No obvious muscle atrophy. These findings were suggestive of peripheral nerve sheath tumor arising from median nerve in the distal arm. Possibilities were schwannoma and ganglioneuroma. A surgical workup and a preoperative anesthetist assessment were obtained.

With a clinical diagnosis of median nerve tumor the patient was planned for excision of the tumor. The patient was explained regarding the possible post-operative complications viz. neurological deficit following surgery and that she may need for a nerve graft.

The patient was taken up for surgery under general anesthesia under

tourniquet control as a lazy S-shaped incision (Figure 1). was made and adequate exposure of the nerve was ensured (Figure 2)

On exploration a well encapsulated, lobulated mass was identified arising from the median nerve (Figure 3). The mass was dissected using blunt and sharp dissection techniques under 4.0x Loupe magnification (Figures 4 and 5). Nerve sheath repair was done. The specimen was sent for histopathological examination. Histopathological examination of the masses revealed features of cellular schwannomas (Figure 6) left forearm until 2 weeks post-

At follow-up upto 6 weeks post-operatively the patient was symptom free with mild paraesthesia along operatively which gradually subsided. Patient was symptom-free at 6 weeks follow up. There was no motor deficit, pain or recurrence.

## DISCUSSION

Schwannomas are benign, slowly growing, encapsulated tumours (4) arising from the neurilemmal sheath, mostly solitary in occurrence. They may occur as multiple lesions and can affect one or several nerves. They are soft in consistency, mobile, mostly painless. They may hence be misdiagnosed as lipoma, fibroma, ganglion, or xanthoma. Cut section of schwannoma shows grey-white whorled appearance with or without areas of haemorrhage (5). Histologically, schwannomas consist of compact cellular lesions (Antoni type A) and loose, hypocellular myxoid lesions with microcystic spaces (Antoni type B) (6,7). Malignant schwannomas are extremely rare, accounting for only 2% of nerve-sheath tumors, and have a predilection for larger diameter peripheral nerves such as the brachial plexus or sciatic nerves. The tumor is initially painless and asymptomatic. It is hence noticed much after its onset. Pain and paraesthesia may occur when the tumor reaches sufficient size to compress the involved nerve (8). MRI gives information regarding tumor extent, anatomical location, tumor size, and relationship of peripheral nerve. This helps in appropriate planning of surgical therapy and preoperative diagnosis (9). EMG studies may reveal prolonged sensory latency and diminished or absent sensory-evoked potentials Hems et al. advocated the use of ultrasound to differentiate between solid and cystic lesions; In their review of 14 cases of MRI scans of peripheral nerve tumors, the T1 weighted images showed the tumors to be of intermediate signal and the T2 weighted images showed high signals with some heterogeneity (1). The appearances were not specific to peripheral nerve tumors, but the diagnosis was suggested if the lesion arose from a major nerve trunk. They felt MRI alone could not facilitate in differentiating schwannomas, neurofibromas and malignant peripheral nerve sheath tumors. The main aim of the treatment of benign nerve sheath tumors is to prevent axonal damage. Surgical excision is the treatment of choice for schwannomas as they do not invade the nerve fascicles (10,11).

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Figure 1) Lazy S shaped incision



Figure 5) Width of mass.

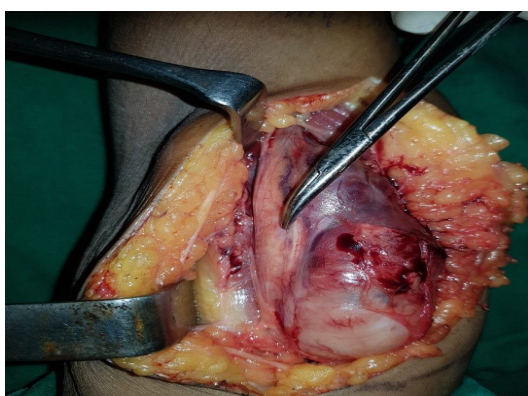


Figure 2) Exposure of mass

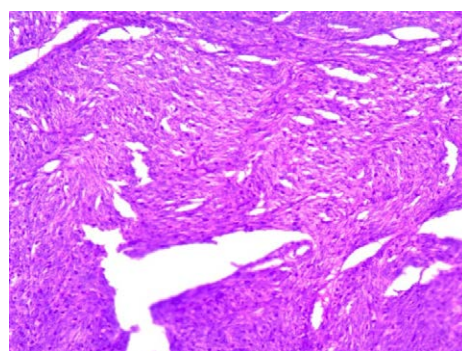


Figure 6) Histopathology slide.

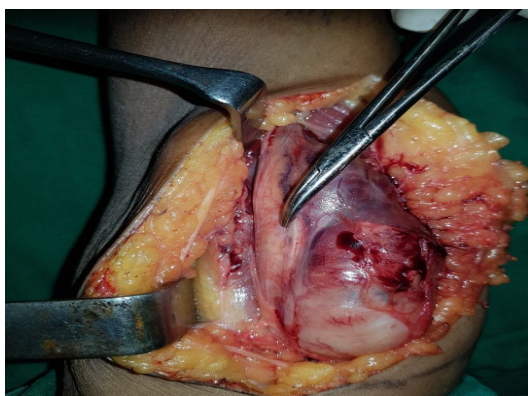


Figure 3) Mass arising from median nerve.



Figure 4) Length of mass.

## CONCLUSION

It should be considered in view of progression of symptoms or appearance of neurological deficits or if malignancy is suspected. Careful evaluation of proximal and distal nerve involvement is essential post-operatively for complete functional recovery as paraesthesia is the most common postoperative complication. In our case, in spite of it being such a big tumor, nerve fibres were easily identified, separated from the tumor and well preserved using microsurgical technique.

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