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A rare case of median nerve schwannoma of ARM

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Abstract
Schwannoma is a tumor that develops from nerve sheath. The author reports an unusual case of swelling on the medial side of the arm noticed 2 yrs back. The swelling increased in size over the last 6 months. It was associated with pain.
The diagnosis of schwannoma was based on MRI and Cytological studies. Surgical removal is usually curative. The asymptomatic character of the tumor remains an essential factor in delayed diagnosis.

Keywords: ARM, schwannoma, nerve sheath

Introduction
Schwannoma is the most common benign tumour of the peripheral nerves but the shwannoma of arm is comparatively rare. It grows at the expense of Schwann cells of the nerve sheath. It is an encapsulated lesion rarely causing neurological deficit. Although they commonly appear as solitary lesions, occasionally there can be multiple (schwannomatosis) lesions or a lesion associated with neurofibromatosis. The median nerve (MN) is one of the most affected peripheral nerves. Schwannoma arising from Schwann cells are usually benign tumours and comprise 0.8-2% of all hand tumours and seen even less in the arms. The tumour is usually seen as a painless, asymptomatic mass, hence the risk of diagnostic delay. Pain, paraesthesia, and motor weakness may occur when the tumour reaches sufficient size. EMG (electromyography), MRI (magnetic resonance imaging), and USG (ultrasonography) are helpful in the diagnosis. Surgical removal is usually curative. We report an unusual case of schwannoma of the Median nerve whose diagnosis was made two years after the appearance of swelling.

Case Report
A 43-year-old female presented with a mass at the anteromedial aspect of her distal arm. On clinical examination, there was a painful solid mass 7*4*4 cm in size, sensitive to pressure and attached to the median nerve. The pain was not severe enough to disturb sleep or to hinder physical activities. The patient reported that she first palpated a nodule two years ago that grew suddenly in the last 6 months to attain the current size. There was no family history of neurofibromatosis and no associated clinical features of the same. An MRI examination revealed a 6.4*3.7*3.3 cm, fusiform encapsulated lesion in close proximity to the neurovascular bundle of the left distal arm in the anterior compartment and the median nerve was not seen separately from the lesion with tapering of proximal and distal course of the nerve which had hyperintense signal on T2/SPAIR hypointense foci (calcifications) scattered at the periphery of the lesion. The appearance was compatible with a tumour of nervous origin. A longitudinal incision centered over the tumour bulk was performed. Surgical exploration brought to light an encapsulated tumour firmly attached to the Median Nerve, which was resected. Histological examination of the tumour showed the characteristic pattern of benign schwannoma: non-nucleated fibrillar areas lined by a palisade of Schwann cell nuclei. At 3 months' follow-up, the wound healed well with no pain or sensorimotor deficit.

Fig 1. Clinical pic showing the tumour over arm.

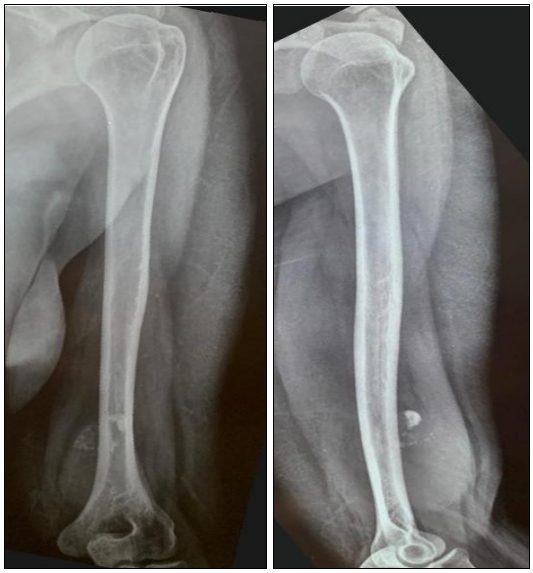

Fig 2: X-ray humerus ap and lateral views showing calcification over the tumor

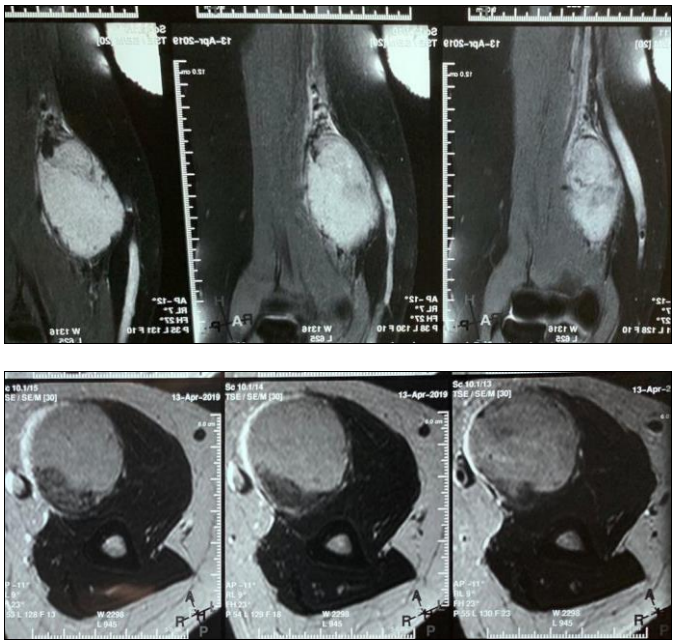

Fig 3 and 4: MRI showing schwannoma of high signal Intensity in T2 weighted images.

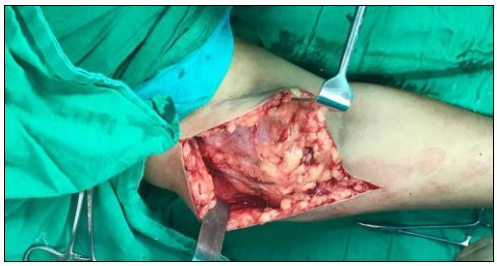

Fig 5. Intra-op view

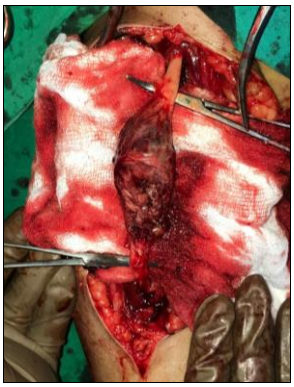

Fig 6. Operative view showing oval shaped Capsulated mass in eccentric position along the median nerve.

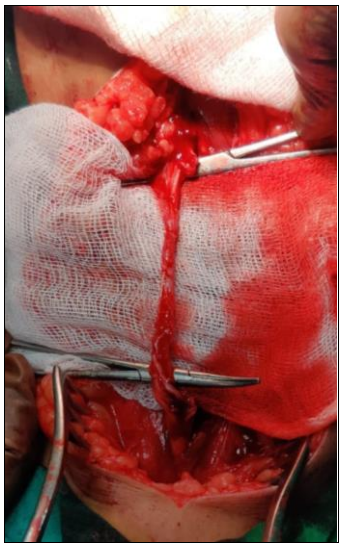

Fig 7: Operative view showing the Median nerve after removal of shoulder.

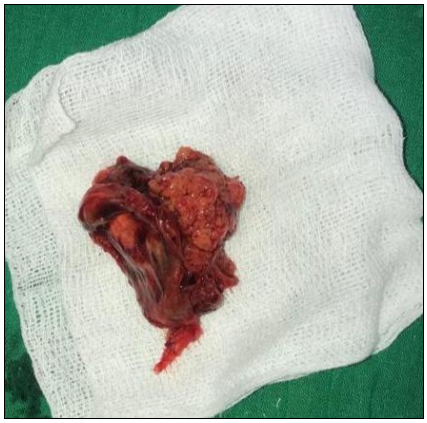

Fig 8: Isolated tumor mass.

Discussion

Shwannoma are common, slowly growing, and encapsulated benign nerve sheath neoplasms separated from the surrounding tissues. Some forms may be localized within the nerve trunk or bundles of nerve fibers spreading over the surface of the tumour. They most commonly occur in adults between 20 and 50 years of age, without distinction of gender. They generally appear as solitary lesions. Occurrence of multiple schwannoma is rare and not necessarily correlate with neurofibromatosis, which demonstrates very precise chromosomal alterations. Malignant transformation of benign schwannoma is unusual. Shwannoma can be asymptomatic or can produce pain, a positive Tinel's sign or a Tinel's-like sensation, and sensory alterations. The slow growth pattern of benign nerve tumour allows for adaptation of the nerve function to the pressure effects. The slow growth and the nervous adaptation to the increased volume of the tumour is often the factor responsible for the diagnostic delay. MRI can provide useful information about morphological data on the Median nerve tumours; however, it cannot provide dynamic information. Although low-intense signals on TI-weighted images and hyperintense signals on T2-weighted images are common findings of schwannoma, MRI also give useful information regarding tumour extent, anatomical location, tumour size, and relationship of peripheral nerve, and for appropriate planning of surgical therapy and preoperative diagnosis. EMG studies may reveal prolonged sensory latency and diminished or absent sensory-evoked potentials. Malignant transformation in schwannoma is rare, the risk of malignant transformation being approximated at 18% in neurofibromatosis type 1 and 5% in schwannoma.

Surgical excision is the treatment of choice. Shwannoma are theoretically removable because they repulse fascicular groups without penetrating them, thus allowing their enucleation while preserving nerve continuity- as reported in our patient. Some authors recommend excision of only symptomatic tumours or those demonstrating enlargement during follow-up. Early surgical excision to have better clinical outcome and to avoid postoperative neurological deficits. This is the reason why early diagnosis is important for this type of tumour. Paraesthesia is the most frequent postoperative complication. Nerve grafting may also be required in some malignant forms of these tumours.

Conclusion

Shwannoma are benign nerve tumours. Their diagnosis is often delayed by the absence of clinical symptoms due to the nervous adaptation to the increased volume of the tumour. Hence, the need to think about this type of tumour before any mass in the path of peripheral nerve.

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