Case Report

Brachial plexus schwannoma - A case report

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Abstract

Schwannomas are benign nerve sheath tumours arising from Schwann cells. Most of them arise in head and neck region and usually involve cranial nerves and sympathetic chain. Only 5% of the Schwannoma arise from brachial plexus. Here we report a case of cervical swelling, clinically diagnosed as cervical lymphadenopathy, further diagnosed by FNAC as Schwannoma for which she underwent enucleation of the swelling and confirmed as Schwannoma histopathologically.
Keywords: Schwannoma, brachial plexus schwannoma.

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INTRODUCTION

Schwannomas, also referred as Neurilemmomas, are benign, encapsulated perineural tumor of neuroectodermal derivation that originates from the Schwann cells of the neural sheath of motor and sensory peripheral nerves. Malignant transformation is extremely rare.[2] Most of them arise in head and neck region and usually involve cranial nerves and sympathetic chain. In the neck Schwannoma has been divided into medial and lateral group. Medial group arise from the last four cranial nerves and cervical sympathetic chain. Lateral group arises from cervical nerve trunk, cervical plexus and brachial plexus.[3] Only 5% of the Schwannomas arise from brachial plexus.[4]. Patients usually present with painless slow growing swelling in the neck or distal neurological deficit. Diagnosis is usually clinical and mostly misdiagnosed as a lymphadenopathy.

CASE REPORT

A 35 year old female came to our surgery OPD with a painless swelling in the right side of the neck for the past 3 months which was gradually increasing in size. She had no history of cough with sputum, loss of appetite or weight, fever, trauma. She had no neurological disturbances in her upper limb. On examination she had a non-tender, firm, partially mobile swelling of size 4X3 cm in the posterior triangle of the neck just behind the posterior border of right Sternocleidomastoid muscle (Fig 1). Her blood investigations were normal. With the history and clinical examination, a clinical diagnosis of cervical lymphadenopathy was made and FNAC of the swelling was done which showed spindle cells and diagnosed as Schwannoma. Since the patient was not affordable for CT or MRI it was not done. Under GA, swelling was explored through a skin crease curvilinear incision. A well encapsulated swelling of size 4X3 cm was found arising from upper trunk of brachial plexus (Fig 2). Swelling was carefully dissected from the nerve trunk and enucleated in order to preserve the function of the nerve (Fig 3, 4). Postoperatively patient had mild weakness of shoulder which improved over a few weeks.

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Figure 1: Pre operative swelling

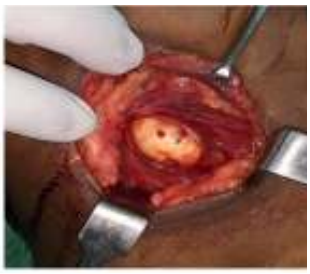

Figure 2: Per operative image showing the swelling

Figure 3: Enucleation donepreserving the nerve

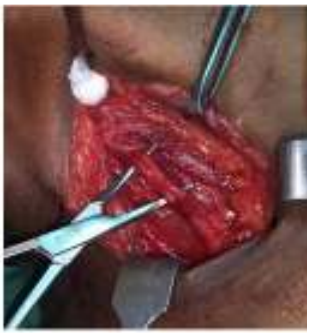

Figure 4: Nerve preserved post enucleation

DISCUSSION

Neurogenic tumours arise from the neural crest which differentiates into the Schwann cells and the sympathicoblasts. The Schwann cells give rise to Neurofibroma and Neurilemmoma (Schwannoma). Schwannoma may arise from any cranial or spinal nerve that has a sheath i.e. any motor or sensory nerve other than the optic and the olfactory nerves which do not have the Schwann cell sheath. In 1910, Verocay, first described a group of neurogenic tumours and referred them as "Neurinomas". In 1935, it was proposed that these tumours arise from nerve sheath elements and they were termed as "Neurilemmomas". About 25% of the Schwannomas occur in the Head and Neck region, usually involving cranial nerves and sympathetic chain; however brachial plexus Schwannoma are uncommon. Most common presentation is a slow growing painless mass in the neck or some patients present with distal neurological symptoms like pain or paraesthesia. The diagnosis lies mostly on clinical suspicion. Pre-operative diagnosis can be done by imaging or FNAC. Fine needle aspirate may give a diagnosis in a quarter of cases. The predominant feature is the presence of spindle cells.[5] MRI T1-weighted images show the tumour to be of intermediate signal and T2-weighted images show a high signal with some heterogeneity. These appearances are not specific to peripheral nerve tumours, although the diagnosis may be suggested if the lesion arises from a major nerve trunk.[6] MRI may also assist in pre-operative differentiation between Schwannoma and Neurofibroma. The nerve is shown to lie peripheral to the tumour in Schwannomas while it is central or obliterated in Neurofibroma. In addition, Schwannomas often show cystic change where neurofibromas do not. If the nerve of origin can be determined by imaging, the patient can be warned about possible neurological sequelae post-excision.[5] The malignant potential of these tumours is small hence enucleation may be attempted to preserve neural function and therefore conservative management is an option for selected patients. one literature review of 146 cervical Schwannomas demonstrated 4% incidence of malignant Schwannomas.[7] As Schwannomas arise from side of the nerve cautious surgical dissection with extra capsular peeling or even enucleating the tumour from nerve of origin has been described in an effort to preserve the function of the nerve.[8] On Histopathology Neurilemmomas are classically described as "well-circumscribed, encapsulated masses that are attached to the nerve but can be separated from it". Nerve filaments may be splayed over the surface of the tumour. Microscopically, the tumour shows cellular areas (Antoni A), including Verocay bodies, as well as looser, myxoid regions (Antoni B). Silver stains demonstrate that axons are excluded from the tumour, although they may become entrapped in the capsule.[9]

CONCLUSION

When a patient presents with a supraclavicular swelling the differential diagnosis of brachial plexus schwannoma should be considered. Neurological symptoms, clinical examination and FNA cytology and imaging may assist in the diagnosis. When diagnosed as schwannoma pre-operative counselling can be done regarding the possibility of post-operative neurological deficit. If a diagnosis of schwannoma is suggested by imaging or the macroscopic appearances of the tumour, enucleation may be attempted to preserve neural function since the malignant potential of these tumours is small.

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