Case Report

Schwannoma of cervical vagus nerve – a case report

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Abstract

Schwannoma arising from the cervical vagus is an uncommon benign nerve tumour. This tumour most often presents as a slow growing asymptomatic solitary neck mass which rarely undergoes malignant transformation. Definitive pre-operative diagnosis may be difficult and investigations such as FNAC have low specificity. We report this schwannoma which has displaced the carotid artery and internal jugular vein antero-laterally. Diagnosis is based on clinical suspicion and confirmation is obtained by means of surgical pathology. Surgical excision is the treatment of choice for this tumour, with recurrence being rare.

Key Word: schwannoma, cervical vagus nerve.

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INTRODUCTION

Vagal nerve schwannomas are rare neural sheath tumors. Although schwannomas are generally benign lesions, they are known to enlarge at a rate of 2.5 to 3mm per year according to published reports. The most common presenting symptoms are hoarseness, dyspnea, dysphagia, cough, aspiration, tongue weakness, and vocal cord paralysis. However, it is not uncommon for this tumor to present as an enlarging asymptomatic neck mass.Imaging plays a central role in diagnosing vagal nerve neoplasm and in particular Magnetic Resonance imaging (MRI) has become the routine imaging study for these tumours. MRI provides, in fact, important pre-operative information useful in planning optimal surgical treatment.The treatment options of vagal nerve schwannomas are wide ranging. Surgical resection is the standard of care for schwannomas.

CASE PRESENTATION

A 43 year old male presented with slowly progressive swelling on the right side of the neck for 2 years, which was painless, well circumscribed and oval(6x5cm),firm in consistency,non pulsatile located in the posterior triangle extending into the anterior triangle of the neck. Ultasonagram of neck showed a complex well encapsulated predominantly solid mass, arising from posterior triangle. Following which we did a ultrasound guided FNAC showing spindle like cells arranged in cellular and loose areas suggestive of nerve sheet tumour probably schwannoma. In order to find the relation with neurovascular bundle and the mass, MRI with MRA was done which showed the anterolateral displacement of carotid artery and internal jugular vein.Pre-op assessment of vocal cords was done following which we proceeded with neck exploration. The tumour was approached postero-medially after lateralising the carotid artery and jugular vein. Tumour seen arising from the right cervical vagus. Tumour resection was done “en bloc”and the specimen was sent for tissue study which confirmed the diagnosis of schwannoma. Post-op period was uneventful and patient is on regular follow up.

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Figure 1


Figure 2

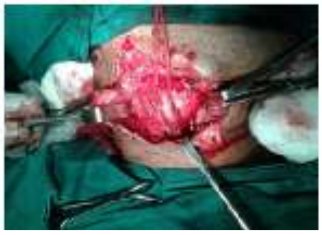
Figure 3

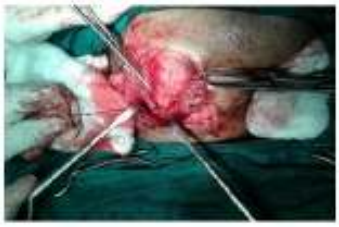
Figure 4

Legend

Figure 1: Swelling in right side of neck

Figure 2: MRA showing the displacement of right carotid artery

Figure 3: Per-operative picture showing schwannoma with carotid artery

Figure 4: Dissection of tumour to preserve the major blood vessels

DISCUSSION

Cervical schwannomas accounts 25-45% of all with more predilection to vagus followed by sympathetic chain. Cases do report schwannoma arising from glassopharyngeal nerve,spinal accessory nerve,superior laryngeal nerve and even from lingual nerve. So this is not an uncommon entity.The involvement of the vagus nerve has been reported in 10% of all cases, although the prevalence may be as high as 29% depending on the study population. Clinically, they present as asymptomatic slow-growing lateral neck masses that can be palpated along the medial border of the sternocleidomastoid muscle.Pre-operative diagnosis of schwannoma is difficult because many vagal schwannomas do not present with neurological deficits and several differential diagnoses for tumour of the neck may be considered, including paraganglioma, branchial cleft cyst, malignant lymphoma, metastatic cervical lymphadenopathy. When symptoms are present, hoarseness is the most common. Occasionally, a paroxysmal cough may be produced on palpating the mass. This is a clinical sign, unique to vagal schwannoma. Presence of this sign, associated with a mass located along the medial border of the sternocleidomastoid muscle, should make clinicians suspicious ofvagal nerve sheath tumours. The usefulness of FNAC is still controversial; the majority of Authors do not recommend open or needle biopsy for these masses. MRI in the pre-operative work-up as it is helpful in defining diagnosis and in evaluating the extent and the relationship of the tumour with the jugular vein and the carotid artery. The MRI appearance is considered quite typical and may lead to suspicion of the diagnosis pre-operatively as the cervical vagal schwannoma frequently appears as a well-circumscribed mass lying between the internal jugular vein and the carotid artery. The vagal schwannomas, in fact, displace the internal jugular vein laterally and the carotid arterymedially, whereas schwannomas from the cervical sympatheticchain displace both the carotid artery and jugularvein without separating them. But in our case, the tumour displaced both the carotid artery and the internal jugular vein antero-laterally. Our principal aim is to distinguish the tumour from Paragangliomas,in which MRI shows extremely bright contrast enchancement in a characteristic “salt and pepper” pattern representing the low intensity of vascular flow voids which is not however pathognomic for paraganglioma but may be with hypervascular lesion.Usually the origin of paraganglioma is more cranial with respect to schwannoma but mass here was at the base of the neck which also favoured our diagnosis towards schwannoma. Treatment of vagal nerve tumours is complete surgical excision. At surgery, these tumours appear as yellowish-white, well-circumscribed masses. The reported incidence of pre operative vocal cord paralysis is about 12%, but hoarseness is almost always presentfollowing surgery. Therefore, pre-operative assessment of vocal cord mobility should be strongly recommended.

CONCLUSION

As benign and slow growing tumors of the head and neck, schwannomas are rare and potentially morbid lesions. Although it is very rare, clinicians should bear in mind the possibility of a nerve sheath tumour in the presence of a neck mass. The preoperative diagnosis is mainly based on clinical suspicion and assisted imaging techniques. Complete resection of the tumour is the treatment of choice.

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