

Cervical Vagal Schwannoma: A Diagnostic and Surgical Challenge

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Abstract

Cervical vagal schwannoma is a rare tumor. It presents a great difficulty in diagnosis and surgical treatment. We are presenting a case of 30-year-old female patient referred to us with the left side neck swelling. We investigated the patient and we faced difficulty in diagnosis. We carefully planned the surgical excision of the left side cervical schwannoma and successfully excised the tumor.

Key words: Cervical vagal schwannoma, Neurofibromatosis, Surgical excision

INTRODUCTION

Schwannoma and neurofibroma are the two common benign tumors of peripheral nerves. Neurofibromas are more frequently reported than schwannomas. Schwannoma is a rare benign tumor in the head and neck region which arises from Schwann cells.^[1,2] Except olfactory and optic nerve, all cranial nerves, autonomous nerves, and spinal nerves are covered with Schwann cells. This raises the propensity of schwannomas to arise from these nerves.^[3] As the latter are slow-growing tumors which present with rare symptoms, so their diagnosis becomes difficult. The main treatment option for a schwannoma is surgical excision. As each case can present differently, so surgical planning varies accordingly. We, hereby, present a unique case of the left-sided cervical vagal schwannoma which offered us a challenging diagnostic and surgical experience.

CASE REPORT

A 30-year-old female patient with a family history of neurofibromatosis presented with a painless left-sided swelling in the lower neck for 3 months. On examination, a 4 × 4 cm swelling was present on the left side of the

neck medial to the sternocleidomastoid muscle (SCM). It was seen extending from the level of the cricoid cartilage to the medial end of the left clavicle. The swelling showed no movement on deglutition but was freely mobile in the vertical and horizontal direction. There was no restriction in the neck movements. Laryngeal examination appeared normal with normal bilateral vocal cord mobility. The patient was advised ultrasonography (USG) of the neck with fine-needle aspiration biopsy (FNAB) from the neck mass. USG neck revealed a 5x6 cm well-defined mass in the left parapharyngeal space. Repeated FNAB results were inconclusive. The patient was, therefore, advised contrast-enhanced computed tomography (CECT) scan. CECT scan showed a well-defined mass with peripheral vascularity in the left parapharyngeal space. The tumor mass was located between the common carotid artery (CCA) and internal jugular vein (IJV). It was seen separating both the vital vessels with an impression of compression or involvement of IJV which was visible on the CT scan [Figure 1].

Differential diagnoses of vagal nerve tumor, branchial cyst, and metastatic lymph node were made. Vagal schwannoma was the most preferred diagnosis relying on two the two key factors, a positive family history of neurofibromatosis and the other being a mass separating CCA from IJV. Excision biopsy was planned. Under general anesthesia a horizontal incision was made on the left side of the neck. The subplatysmal flap was elevated. SCM was mobilized and reflected over the mass. Yellowish-white mass was present compressing the IJV and arising from the vagus nerve [Figure 2]. Our concern was to preserve left IJV and vagus. The surgical mass was mobilized and removed by

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www.ijss-sn.com

Month of Submission : 04-2020
Month of Peer Review : 05-2020
Month of Acceptance : 05-2020
Month of Publishing : 06-2020

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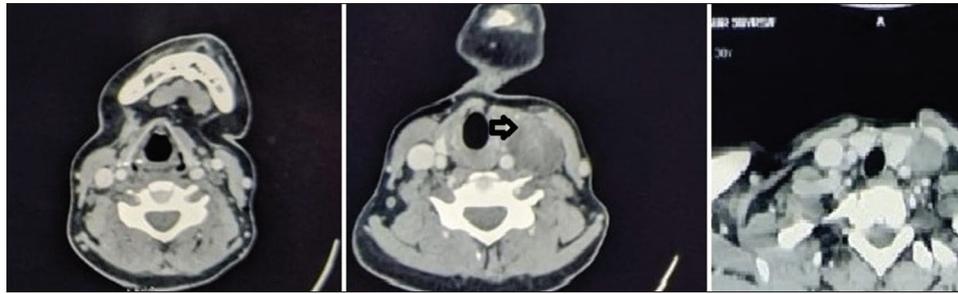


Figure 1: Contrast-enhanced computed tomography showing well-defined mass with peripheral vascularity in the left parapharyngeal space separating common carotid artery and internal jugular vein (IJV) with an impression of compression or involvement of IJV



Figure 2: Intraoperative photograph showing smooth yellowish-white mass with vagus nerve

preserving the vagus nerve, but we ligated IJV for better access to the mass. She developed the left vocal cord palsy which recovered eventually 3 months postoperatively. Histopathology report of the excised mass revealed left-sided schwannoma.

DISCUSSION

Schwannoma is a slow-growing benign tumor of peripheral nerves. Its occurrence is rare, though literature reports the head and neck region being its most preferred site. The lateral neck is the most usual site of schwannomas. These are frequently asymptomatic in the presentation. Few tumors present as slow-growing lumps in neck which usually go unnoticed by most patients. Occasionally, these cervical vagal schwannomas present with hoarseness of voice, paroxysmal cough during manipulation of mass, and Horner's syndrome.^[4] Cervical schwannomas are freely mobile in both vertical and horizontal directions. The above features renders difficulty in the diagnosis of cervical schwannomas. The preferred investigations are USG of the neck, CECT scan, magnetic resonance imaging (MRI), and USG-guided FNAB and fine-needle aspiration cytology (FNAC). USG of schwannomas frequently illustrates well defined hypoechoic, homogenous mass with peripheral acoustic enhancement, and eccentric

nerve trunk to mass.^[2] USG-guided FNAB and FNAC are inconclusive in a wide number of cases which make their diagnosis even more difficult. CECT of vagal schwannoma shows a well-defined mass with peripheral enhancement in the parapharyngeal space. The most suggestive feature on a CT scan is the divergence of CCA from IJV by the tumor mass. In our case, CECT showed a well-defined mass that was separating CCA from IJV. The IJV seemed to be compressed or involved by the mass on CT scan which raised our suspicion of the occurrence of a metastatic lymph node or lymphoma. MRI of vagal schwannoma is also carried out in a few cases. MRI findings usually reveal a well-defined mass with the divergence of CCA and IJV.^[1,2]

Treatment for vagal schwannoma is mostly surgical excision of the tumor. Excision can be done by extracapsular dissection or intracapsular method. The latter is the preferred technique as it attempts to save the nerve trunk from which the tumor arises.^[3] Since vagal schwannomas can have varied clinical presentations, so the surgical scenarios vary accordingly and the treatment plan is case-customized. In our case, the tumor was seen compressing the IJV. Hence, we planned the ligation of IJV for an improved surgical exposure and to save the vagal main trunk. Histopathology of schwannoma shows spindle cells in Antoni A cell and Antoni B arrangement with interspersed verocay bodies.^[1]

CONCLUSION

Cervical vagal schwannomas present with a diagnostic and surgical challenge. Each case can be distinctive. Consequently, the surgery is customized depending on the tumor size and the status of major vessels in relation to the tumor.

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How to cite this article: Shergill GS. Cervical Vagal Schwannoma: A Diagnostic and Surgical Challenge. *Int J Sci Stud* 2020;8(3):17-19.

Source of Support: Nil, **Conflicts of Interest:** None declared.