Case Report
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Cervical Schwannoma of Sympathetic Chain: A Rare Case Report

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Objectives: It is very rare to find nerve sheath tumors that originate from the sympathetic chain. Imaging play important role to help surgeon to make a diagnosis. In this case, computed tomography (CT) scan used to establish the pre-operative diagnosis. **Methods:** This can be demonstrated through a case of a 52-year-old man presented with a swelling on the right side of his neck for 2 years. CT scan show a mass lying behind the right internal jugular vein and deep to the sternomastoid. Result: The patient was successfully treated by surgery and has not shown evidence of recurrence. Histopathology examination (HPE) confirmed the diagnosis of schwannoma. **Conclusion:** Diagnostic imaging gives essential pre-operative information which is useful to plan optimal surgical procedure. Complete surgical excision should carry out and biopsy must be performed for histology examination to confirm the diagnosis.

Keywords: Cervical Schwannoma, Sympathetic Chain Schwannoma, Cervical Neoplasm, Neck Lump

Introduction

Schwannomas, neurilemmomas or neurinomas are benign nerve sheath tumors that are deriving from the Schwann cells which occur in the head and neck region in approximately twenty-five to forty-five percentage of case [1]. The word 'Schwannoma' firstly described by Stout in 1935 [2]. Microscopically, schwannomas are described as solid, cystic or encapsulated tumors [3]. Hence it is benign, there are case reported malignant transformation [4].

It is very rare to find cervical sympathetic chain schwannomas (CSCS) and commonly experienced by patients aged between thirty and fifty years. The tumors are also known to grow slowly with no sex-related predisposition [5]. More often, they are asymptomatic benevolent tumor that can only be treated by performing a total surgical resection [2]. Imaging is important in the diagnosis of cervical nerve mass, CT scan and magnetic resonance imaging (MRI) becoming the

usual imaging study for such tumors. They give essential pre-operative information which is used to plan optimal surgical treatment [10].

Case Report

A 52-year-old man, with an asymptomatic swelling in the right upper lateral neck for 2 years, came to our attention in February 2017. There was no history of hoarseness, nasal regurgitation, syncopal attacks, associated pain, fever, trauma or contact with tuberculosis (TB) patient. Examination revealed a firm, 3x3 cm right lateral neck swelling that was mobile in transverse planes but fix in longitudinal planes. Oropharynx examination revealed no displacement of the peri tonsillar structures, and indirect laryngoscopy excluded vocal cord paralysis.

CT scan right neck reveal a mass lying behind the right internal jugular vein and deep to the sternomastoid. It is oval in shape has well defined margin, measures 22x34x34mm (Figure 1). The lesion is mostly non-enhancing. It is likely an enlarged lymph node. It does not exhibit features typical of lymphadenitis/TB. Definitive diagnosis requires biopsy and HPE.

In doubt of a primitive or secondary lymph node pathology, fine-needle aspiration cytology (FNAC) was proposed but advised for excision biopsy. The patient underwent surgical treatment with a provisional diagnosis of lymphadenopathy or a neural tumor. Patient then proceed for dissection of right neck and removal of tumor. Operation uneventful Intra op finding reveal that tumor measured 4x2cm is in the capsule and arising from the cervical sympathetic chain, vascular structures were not stretched or compressed. The eccentric site of the mass and the presence of a capsule indicated that it was a benign lesion. The mass was carefully dissected from the nerve while trying to avoid any damage to it. As it was not possible to dissect the tumor without damage to the nerve bundles, the capsule was incised longitudinally so that the tumor could be excised from inside. The content of the tumor was removed completely, leaving the capsule behind.

Post- op patient kept in ward for 1 day for observation and IV antibiotic. Upon 1-week appointment postoperative patient was well and no neurological deficit.

HPE right neck mass shows irregular nodule is composed of cellular and loose hypocellular area with cystic spaces, the cellular area contains uniform spindle shape cells arranged in palisaded manners, some from verocay bodies. In between are loose area with vacuolated cytoplasm (Figure 2). No atypia or malignancy seen. Schwannoma with degeneration.

Discussion

Cervical Sympathetic Chain Schwannomas (CSCS) are uncommon nerve tumors which occur in the regions around the neck and head. Reports shows that they occur as asymptomatic masses that slowly grow along the neck and palpated along the sternocleidomastoid muscle edges [6].

Diagnosis of CSCS before an operation is difficult

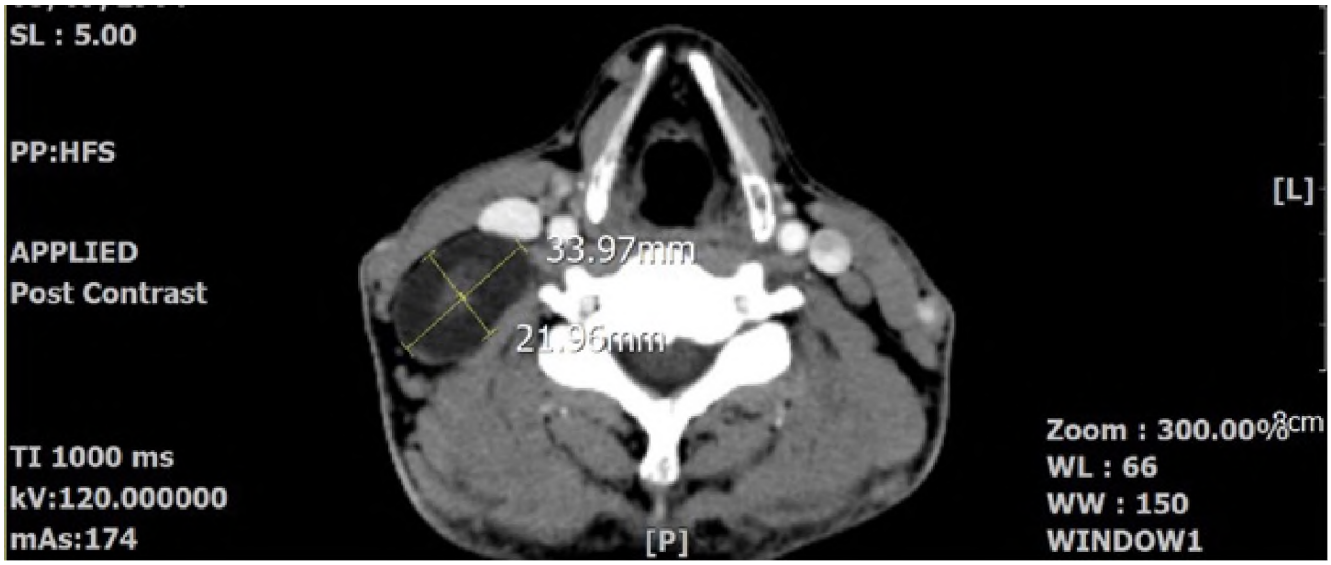

Figure 1.

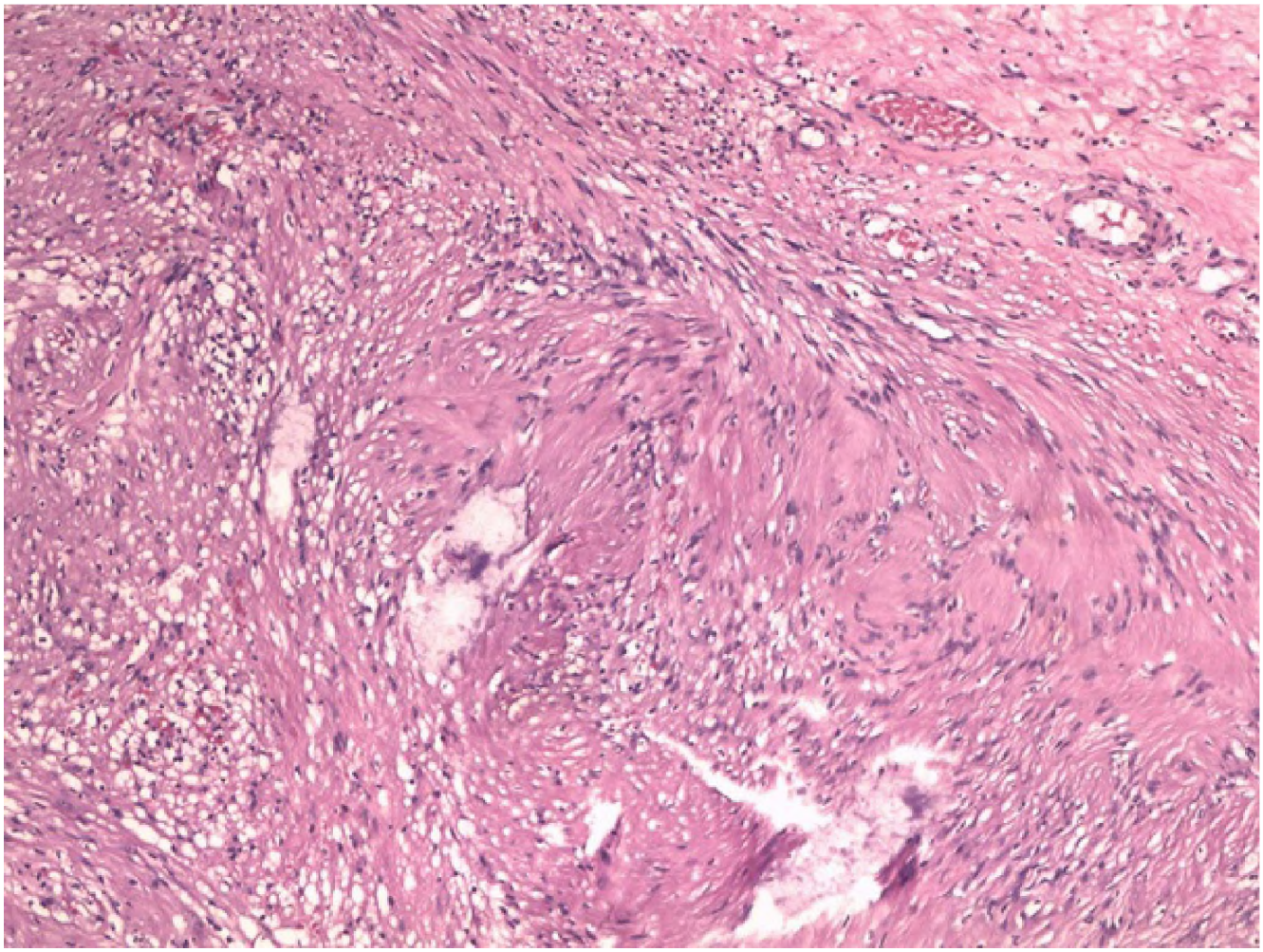

Figure 2.

since schwannomas usually asymptomatic and without any neurological deficits. This implies that many neck tumor differential diagnosis like tuberculosis, branchial fissure cyst, paraganglioma, metastatic cervical lymphadenopathy, and lymphoma should be considered [7]. Moreover, these tumors are sometimes not considered in differential diagnosis because of their rarity.

Sometimes Horner's syndrome and pulsation of the tumor may be presented on physical examination, but pulsation is not necessarily a CSCS finding [8]. This may be because of carotid system reflection or schwannoma hypervascularity [6]. With the occurrence of this symptom linked to a mass found along the margin of the sternocleidomastoid muscle, clinicians should be suspicious of CSCS [9]. In this case, FNAC was performed and the result was inconclusive. Recent years, CT scan and MRI was widely used to confine parapharyngeal lesions and to distinguish pre-styloids from post styloids [10]. A mass on CT contrast pushing the internal carotid artery or the common carotid artery forward is a clear indication of schwannoma emanating from the sympathetic chain or vagus nerve [11]. Biopsy for HPE play important role to establish the diagnosis. On HPE, schwannomas can be composed of two different areas. Antoni type A areas are highly cellular and contain closely packed spindle-shaped cells forming palisades called Verocay bodies. Antoni type B areas are composed of loosely arranged spindle-shaped cells in a mucinous matrix [11]. Treatment of cervical nerve tumors is complete surgical excision with rare recurrence rate [12]. The aim of the surgery is to remove tumor as much as possible while preserving its neural pathway without sacrificing nerve fiber. It can be done by separating from the underlying tissue and fibers. It is not easy to dissect the capsule from the nerve; some literatures suggest that the

capsule can be open longitudinally and the tumor can be removed from inside [13]. In the future, if patient suspected of schwannoma, surgeon should perform MRI instead of CT scan pre-operatively as MRI more superior to CT scan in view of soft tissue delineation and able to determine relationship between the tumor and the great vessels of the neck [14].

Consent

Written informed consent was obtained from the patient.

Conflict of Interest

The authors state no conflict of interest.

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