

Schwannoma in The Head and Neck Region – A Case Report

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Abstract

Schwannomas are benign nerve sheath tumors arising from Schwann cells, with 25–45% occurring in the head and neck region. We report a rare case of a 47-year old male with a slowly enlarging, asymptomatic mass in the left posterolateral neck. MRI showed a well-defined $7 \times 5 \times 5$ cm lesion, and surgical excision was performed with preservation of surrounding neurovascular structures. Histopathology confirmed schwannoma with typical Antoni A and B patterns and S-100 positivity. Complete excision led to full recovery with no neurological deficits. Schwannomas should be considered in the

differential diagnosis of well-circumscribed neck masses.

Keywords: Schwannoma, Benign nerve sheath tumor, Antoni A and Antoni B patterns, S-100 positivity

Introduction

Schwannomas are benign nerve sheath tumors arising from Schwann cells of peripheral nerves. Also called neurilemmomas, they can occur throughout the body, with 25–45% of extracranial cases found in the head and neck region. Common sites include the parapharyngeal space, oral and nasal cavities, paranasal sinuses, ear, larynx¹, and submandibular region. They affect both sexes equally and are most frequent between 20 and 50 years of age¹. The parapharyngeal space is the most

common head and neck site^{1,2}. This report describes rare extracranial schwannoma in the posterolateral neck near the shoulder, successfully managed surgically by Head and Neck Surgery Department.

Case History

A 47-year-old male presented with a complaint of swelling on the left side of the neck, near the shoulder, which he had first noticed approximately 8–9 years ago. According to the patient, the swelling was asymptomatic for the first few years. However, around 6 years ago, he observed a gradual increase in its size.



Figure 1:



Figure 2:



Figure 3:

The patient first consulted a local physician and received growth-suppressing medication without improvement. He later presented to our OPD, was admitted, and underwent MRI for further evaluation and management. On examination, the mass was firm, well-defined, fixed, and mildly tender. Swelling showed a progressive growth and was located in the posterolateral neck, near the shoulder. He reported tingling sensation and pain radiating to the ipsilateral upper limb when carrying heavy loads on the affected side. Neurological examination of the upper limb was normal, with no signs of muscle weakness or sensory loss. No cervical lymphadenopathy was noted.

MRI of the neck revealed a lobulated, well-defined mass lesion measuring approximately $7 \times 5 \times 5$ cm in the posterolateral neck, located in the middle third and posterior to the sternocleidomastoid muscle. There was no evidence of intraspinal extension. Adjacent soft tissue planes appeared preserved. Pre-Operative FNAC was not done since it is still controversial.



Figure 4:

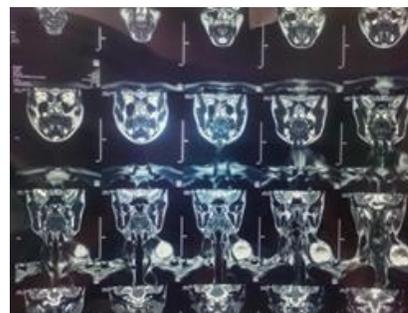


Figure 5:

Surgical excision of the mass was planned under general anesthesia via an extracranial approach. A Horizontal skin incision was made. Dissection proceeded in the subplatysmal plane after transection of the platysma muscle.



Figure 6:



Figure 7:

Careful dissection preserved critical anatomical structures including the external jugular vein and supraclavicular nerves. The neural mass was delineated with precision. It was found to be situated anterior to the anterior trunk of the brachial plexus. Both the phrenic nerve and brachial plexus were meticulously preserved during tumor dissection. Retraction of the scalenus medius muscle provided enhanced exposure.

The tumor was excised completely, extending up to the foramen transversarium at the levels of C5 and C6 vertebrae. Hemostasis was achieved and surgical drain was placed to prevent postoperative fluid accumulation. Layer-wise wound closure was performed & patient was

monitored postoperatively for any neurological deficits or complications.

Discussion

Neurogenic tumors arise from the neural crest, which differentiates into Schwann cells and sympatheticoblasts. Schwannomas are benign neoplasms of Schwann cells affecting cranial, peripheral, and autonomic nerves³. In the head and neck, they account for 25–48% of extracranial schwannomas, though only 0.2–1% occur in the oral cavity. They most frequently involve the vestibulocochlear nerve, with other sites including the scalp, face, pharynx, parotid gland, middle ear, external acoustic canal, tongue, palate, buccal mucosa, lip, and gingiva⁴.

Schwannoma was first established as a pathological entity by Verocay in 1908 later called it neurinoma in 1910⁴. Later the term neurilemmoma was coined by Stout in 1935⁴. Schwannoma in the neck region can be categorized on the basis of the origin of the nerve into two groups. Medial group includes four cranial nerves (IX, X, XI, and XII) as well as the cervical sympathetic chain & the lateral group consists of nerves that arise from the cervical plexus, the cervical neck trunk, and the brachial plexus⁵. The size of the tumour may vary from few mm to over 15 cm¹³. Clinical sign and symptom may vary according to the anatomic site of the tumour in the head and neck. These are typically well-circumscribed and encapsulated masses that are often asymptomatic and grow slowly, at a rate of approximately 2.5–3 mm per year⁵. Majority of the patients present with a painless mass and some may present with pain and tenderness which was same in our case. The swelling is most often freely mobile in soft tissue, but when it is connected to a large nerve or trunk there is restriction of the movements i.e the vagus nerve,

the cervical sympathetic chain or the glossopharyngeal nerve^{4,6,7}. The preoperative diagnosis of schwannoma in the head neck region is difficult. Some have recommended FNAC. FNAC may help to reveal diagnosis, but they are inadequate. The usefulness of FNAB is still controversial; the majority of authors do not recommend open or needle biopsy for these masses. CECT and MRI are essential in assessing tumor size, extent, vascularity, & relation to adjacent structures. Though these are typically hypovascular, delayed imaging phases can make them appear 'hypervascular' due to contrast pooling and slow venous drainage¹⁰. CT and MRI characteristically show well-defined, spherical or ovoid masses with moderate-to-marked heterogeneous enhancement, often with cystic degeneration or fatty changes seen in larger tumors¹¹. A comparative study showed that MRI suggested the diagnosis of schwannoma in 80% of cases, whereas CT did so in only 14%—highlighting MRI's superior sensitivity and specificity¹². Differential diagnoses include metastatic or reactive lymphadenopathy, soft tissue tumors (fibroma, leiomyoma, lipoma), paraganglioma, carotid artery aneurysm, branchial cleft cyst, and angioma. The treatment of choice is complete surgical excision of the benign tumor which was done in our case.

Histology shows classic Antoni A (dense spindle cells with nuclear palisading and Verocay bodies) and Antoni B (hypocellular, myxoid stroma with degenerative changes) patterns, often mixed in one lesion. Immunohistochemistry reveals strong S-100 positivity, confirming Schwann cell origin.^{1,2,3}

On follow-up, the patient remained asymptomatic with no neurological deficits or movement limitations. Extracranial schwannomas are rare, typically

asymptomatic solitary tumors. Diagnosis is often confirmed histopathologically after excision. Surgical removal is the treatment of choice, with low recurrence but potential risk of nerve injury.



Figure 8:



Figure 9:



Figure 10:

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