

# Neck Schwannoma Masquerading as a Carotid Body Tumour

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## ABSTRACT

Schwannomas, are uncommon nerve sheath neoplasms that may originate from any nerve of the body. These benign tumours often present as diagnostic and management challenges.

A classical case of neck schwannoma was mimicking as a vascular tumour both clinically and radiologically which was surgically resected and later proved to be a schwannoma on histopathology.

**Key Words:** Schwannoma, Carotid body tumor

## INTRODUCTION

Schwannomas which are also known as neurilemmomas, neuromas or neurinomas, are uncommon nerve sheath neoplasms that may originate from any peripheral, cranial or autonomic nerves of the body except the olfactory and the optic nerves. These are benign nerve sheath tumours which are composed of Schwann cells which normally produce myelin sheath around the nerves. Approximately 25% to 45% [1] of the schwannomas are located in the head and these often pose diagnostic and management challenges. Though a large proportion of the head and neck schwannoma studies are devoted to intracranial acoustic neuromas, the majority of head and neck schwannomas are non-vestibular and extracranial.

## CASE HISTORY

A 50 yrs old female presented with the complaint of a painless swelling on the left side of the neck since 8 years, which progressively increased in size. There was no history of dizziness, tinnitus, dysphagia, dyspnoea, hoarseness or weight loss.

On examination, a 6x4 cm vertically ovoid swelling was found over the left side of the neck, extending vertically from the mastoid tip to the midpoint of the sternocleidomastoid muscle (SCM) and horizontally from 1 cm below the angle of the mandible to the posterior border of the SCM. A vessel was seen running superficially across the swelling, with visible pulsations [Table/Fig-1]. It was firm in consistency, non tender and mobile horizontally. Expansile pulsations were felt in the swelling in sync with the radial pulse.

## INVESTIGATIONS

FNAC – Bloody aspirate

24 hrs VMA < 7 mg/dl

Blood routine, Clotting profile, Urine routine, RFT, LFT, Serum electrolytes – Normal

CT scan of the neck with contrast – A well defined encapsulated mass deep in the SCM, which was present at the bifurcation of the two carotids. It was a heterogeneous, contrast enhancing lesion. The internal jugular vein was compressed [Table/Fig-2].

Angiography – A vascular lesion was seen at the carotid bifurcation. The internal carotid artery was found to be winding around and

running superficial to the swelling. The vascular supply was from the branches of the external carotid artery (ECA) [Table/Fig-3].

## CLINICAL COURSE

With a provisional diagnosis of Carotid body tumour, the patient underwent the exploration of the neck. Per operatively, a well encapsulated mass was found at the bifurcation of the carotids with a few vascular feeders from the ECA. The upper cervical roots were attached to the swelling [Table/Fig-4]. There was no extracapsular spread or invasion of the mass into the adjacent structures. The post operative period of the patient was uneventful.

HPE was suggestive of Schwannoma. Both the Antoni A and B cell patterns were seen [Table/Fig-5].

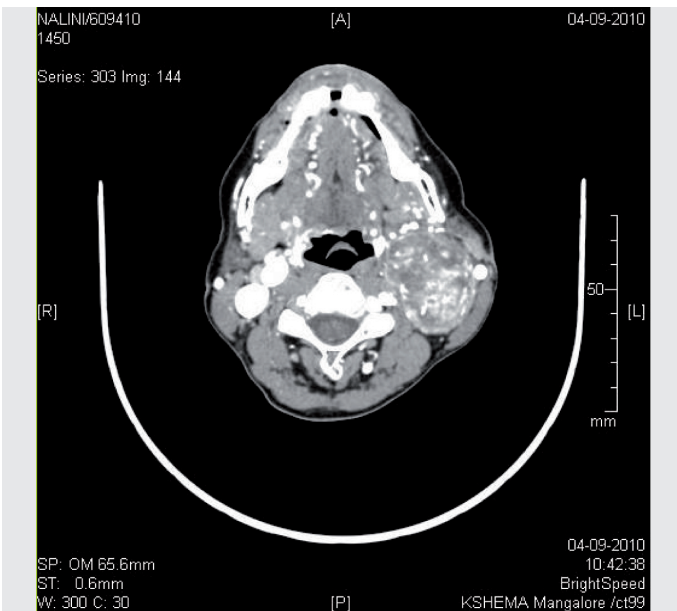
## DISCUSSION

Schwannomas are uncommon nerve sheath neoplasms that may originate from any peripheral, cranial or autonomic nerves of the body with the exception of the olfactory and the optic nerves [2].

The parapharyngeal space is the most common non-vestibular head and neck schwannoma location. The most common nerves of origin were the vagus and the cervical sympathetic



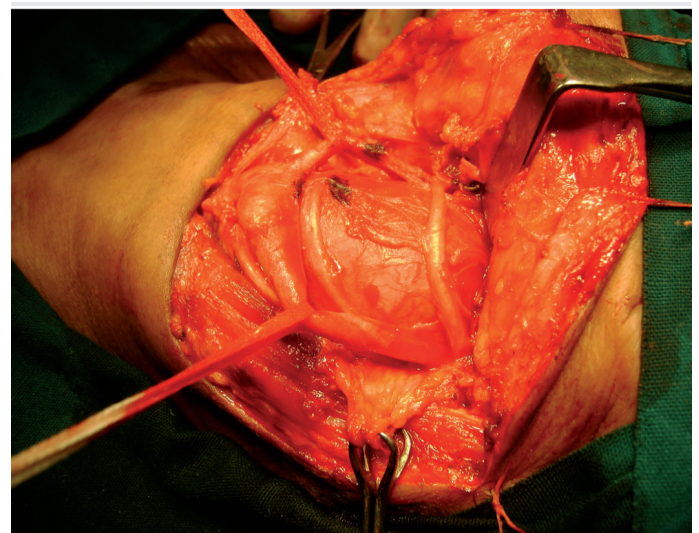
**[Table/Fig-1]:** Vertically ovoid neck swelling with visible pulsations



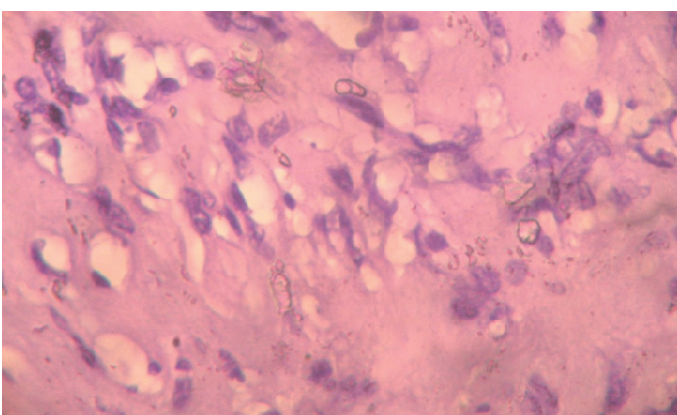
**[Table/Fig-2(a&b)]:** Well encapsulated contrast enhancing lesion seen on axial and coronal cuts



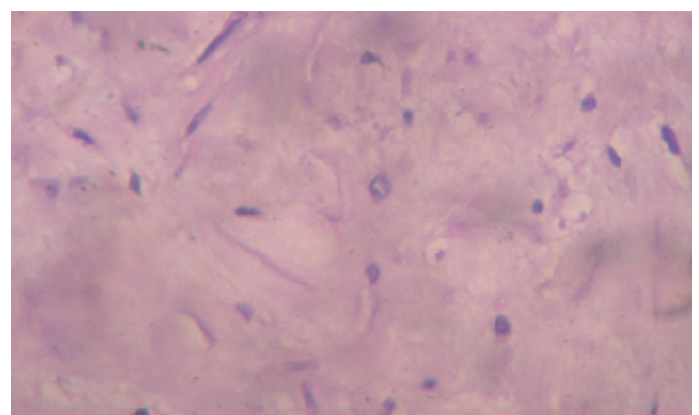
**[Table/Fig-3]:** CT angiography showing vascular lesion at the left carotid bifurcation receiving blood supply from ECA. ICA winding around the mass



**[Table/Fig-4]:** Well encapsulated mass seen at the carotid bifurcation. Hypoglossal and glossopharyngeal nerves seen running across the mass.



**[Table/Fig-5a):** HPE showing hypercellularity with symmetrical cell pattern (Antoni A type)



**[Table/Fig-5b):** HPE showing hypocellularity with no cell pattern (Antoni B type)

chain [3]. Schwannomas are almost always diagnostic problems because their history and clinical examination are nonspecific and deceptive. The compression of the adjacent neurovascular structures (the hypoglossal and the vagus nerves) can further complicate the presentation. Vascular schwannomas can take up

contrast on CT and MRI, thus making it difficult to differentiate it from carotid body tumour, which would classically show a salt and pepper appearance [4]. Both the Antoni A and B cell patterns were seen on HPE. The predominance of the Antoni B cell pattern can cause an increased contrast uptake on CT scan [5].

Swellings arising in the neck at the bifurcation of the carotid artery are often mistaken to be carotid body tumours. Carotid body tumours are usually asymptomatic, slow growing tumours and they show splaying of the carotids on angiography which is known as the 'lyre sign'.

With this case presentation and the review of literature, we could conclude that the location and the vascular and the histopathological pattern of the tumour causes a schwannoma to present as a carotid body tumour, thus posing a diagnostic challenge. Very few cases have been reported so far, where a neck schwannoma masquerades as a carotid body tumour.

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