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## Case report

# Hemangiopericytoma (Solitary fibrous tumor) of parapharyngeal space: A rare tumor

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## ABSTRACT

Tumors of parapharyngeal space are difficult to access for clinical examination, due to critical location of this anatomic area. Most of these tumors are benign. Hemangiopericytomas arising in parapharyngeal space are extremely rare tumors and they have uncertain malignant potential. Radical excision of tumor is the treatment of choice. Here we report a case of young adult male patient who presented with very nonspecific throat symptom and on clinical and radiologic evaluation diagnosis of pre-styloid parapharyngeal space tumor was made and post-surgical histopathology report showed hemangiopericytoma (solitary fibrous tumor).

## 1. Introduction

Hemangiopericytomas are rare vascular tumors, having cell of origin from capillary pericytes. They constitute 1% of all vascular tumors and have uncertain malignant potential. In head and neck region, common sites for these tumors are orbit, nasal cavity, oral cavity and Jaw. Hemangiopericytomas arising in parapharyngeal space are extremely rare; and only few cases have been reported in literature [1,2]. Clinical examination and surgical approach for the tumors arising in parapharyngeal space is difficult, due to critical anatomic location of this area. Majority of tumors in parapharyngeal space are benign, only 20% being malignant. Commonest tumors in this site arise from deep lobe of parotid or minor salivary gland (50%). Other less common tumors are neurogenic tumors (13%), paragangliomas, lipoma, lymphomas, sarcomas and tumors of mesenchymal origin [3]. Here we report a case of prestyloid parapharyngeal space tumor, which was excised by transcervical approach and final histopathology revealed a hemangiopericytoma (solitary fibrous tumor).

## 2. Case report

A thirty eight year old male patient presented with complains of foreign body sensation in throat for six months. He had no dysphagia, change in voice or breathing difficulty. He was non-diabetic, non-hypertensive and there was no history of addiction. His vitals were stable at presentation. Clinical examination of oral cavity and oropharynx revealed medial bulging of left side tonsil, tonsillar pillars and soft palate. Nasal endoscopy showed mucosal bulge on lateral

nasopharyngeal wall on left side. Fiber-optic laryngoscopy showed normal mobility of vocal cords and normal hypopharynx. There was no clinically palpable swelling in parotid region or in neck. There was no clinically palpable lymph node. Contrast enhanced computed tomography (CECT) of neck (Fig. 1A) was advised and revealed heterogeneously enhancing lesion of size  $5 \times 4.5 \times 4$  cm, involving left parapharyngeal space, medially displacing pharyngeal mucosal space, postero-laterally displacing internal carotid artery. Upper part of internal jugular vein was compressed and not visualized. Magnetic resonance imaging (MRI) of neck (Fig. 1B) was planned for getting more radiologic details, which revealed a well encapsulated, multi-lobulated, enhancing lesion with flow voids, measuring  $5 \times 5 \times 4$  cm involving left pre-styloid parapharyngeal space. There was no soft tissue infiltration to surrounding tissue. There was clear fat plane between the lesion and deep lobe of parotid gland.

Trans-oral fine needle aspiration cytology showed hemorrhagic slide without a conclusive diagnosis. So provisional diagnosis of pre-styloid parapharyngeal space tumor was made and surgical excision was planned after counseling the patient regarding the all possible outcomes. A transverse cervical incision made and submandibular gland excised exposing submandibular triangle. Internal jugular vein, internal carotid artery, vagus nerve were identified in neck, and vascular control taken. Stylohyoid muscle cut and stlmandibular ligament cut, exposing parapharyngeal space. Tumor was well encapsulated and was getting vascular supply from ascending pharyngeal vessels, which was ligated. With blunt dissection, tumor mobilized and delivered after separating medially from pharyngeal constrictor, laterally from medial pterygoid muscle. Postoperative period was uneventful and there was

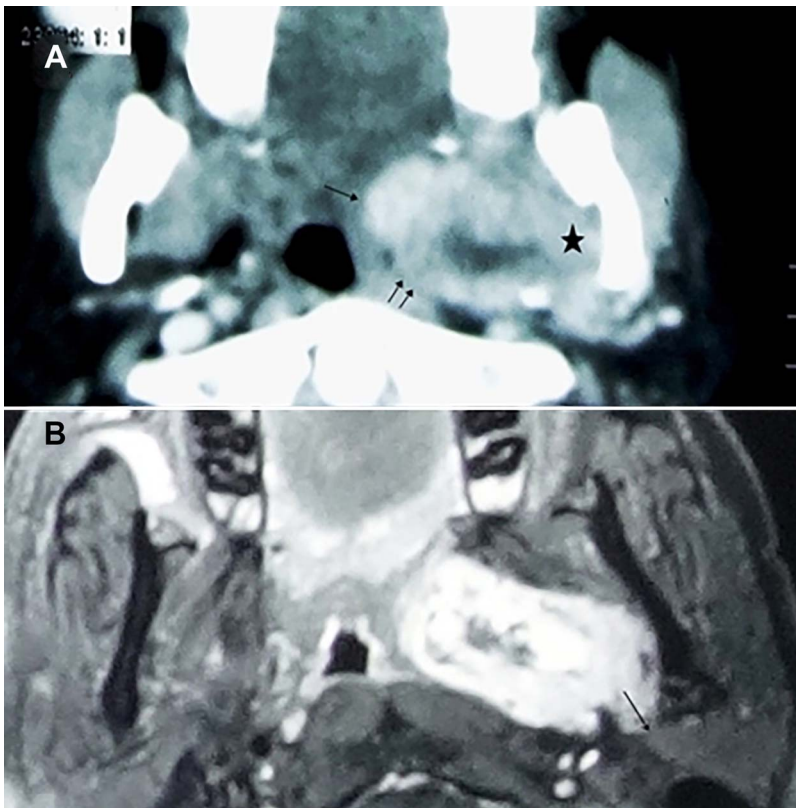
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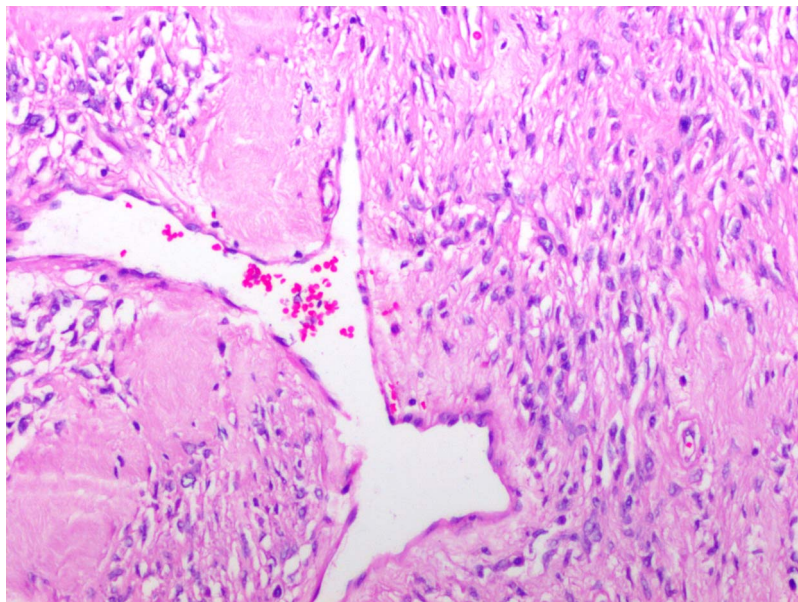


**Fig. 1.** A) Contrast enhanced computed tomography (CECT) of neck showing heterogeneously enhancing lesion involving left parapharyngeal space, medially displacing pharyngeal mucosal space (single arrow), postero-laterally displacing internal carotid artery. Tumor abutting medial pterygoid muscle (star mark), Tumor abutting pre-vertebral space and there appears clear fat plane (double arrow). B) Magnetic resonance imaging (MRI) of neck shows a well encapsulated, multi-lobulated, enhancing lesion with flow voids involving left pre-styloid parapharyngeal space. There is no soft tissue infiltration to surrounding tissue. There is clear fat plane between the lesion and deep lobe of parotid gland (single arrow).

no neurologic deficit. Patient was started on oral liquid and soft diet after six hours nil by mouth following surgery. There was no aspiration or hoarseness. Patient was discharged on fifth post-operative day, after neck drain removal.

Histopathology revealed a well encapsulated tumor mass measuring  $5 \times 4 \times 2$  cm, cut surface was solid, greyish white in appearance, with no necrosis. On microscopy (haematoxylin & eosin stain) tumor was uniformly cellular with numerous, variably ectatic or compressed, thin walled branching vessels with gaping sinusoidal spaces (stag horn configuration). Tumor cells are spindle to round in shape, with small

amount of pale or eosinophilic cytoplasm, indistinct margin, bland vesicular nuclei. No significant atypia was seen (Fig. 2). Immunohistochemistry (IHC) study showed that tumor stained positive for CD99, CD34 and vimentin. S-100 and SMA staining was negative. Ki67 score was low (7–8%) (Fig. 3A–D). Histological diagnosis of hemangiopericytoma (solitary fibrous tumor) was confirmed with above IHC finding (Fig. 3A–D). As per tumor board decision at our institute, patient was kept under follow up. After six month of treatment MRI neck was repeated and there was no evidence of residual or recurrence (Fig. 4).



**Fig. 2.** Microscopy examination (Haematoxylin & Eosin stain): Low magnification (4X) showing ectatic thin walled branching vessels with gaping sinusoidal spaces forming stag horn configuration. Tumor cells are spindle to round in shape, with small amount of pale or eosinophilic cytoplasm, indistinct margin, bland vesicular nuclei.

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