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Case Report

A rare case of minor salivary gland tumor presenting as parapharyngeal tumor

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ABSTRACT

Parapharyngeal space tumours (PPS) are benign, uncommon located in the head and neck region. Pleomorphic adenoma the most prevalent type of salivary gland tumour can develop from the salivary glands or start in the deep lobe of the parotid gland and spread into PPS. A 59-year-old male presented with complaints of dysphagia, voice change and swelling in the soft palate. PPS tumour was detected with endoscopy, biopsy confirmed it as salivary gland tumour and PET-CT scan findings revealed a large hyper metabolic solid soft tissue density lesion in left parapharyngeal space with local extent. Tumour excision was done through transcervical approach. Biphasic components were highlighted by CK7, SOX10, SMA, P63 using immunohistochemistry (IHC) confirming benign mixed salivary gland tumor pleomorphic adenoma. Patient was treated with IV antibiotics, IV PPI's, IV analgesics, IV antiemetics and discharged in stable condition. PET-CT, IHC serves a vital role in diagnosis and confirmation of severity of tumour. The transcervical approach is the preferred technique for excising tumours in the parapharyngeal space that have narrow attachments.

Keywords: Parapharyngeal space, Transcervical approach, Pleomorphic adenoma, PET CT, IHC

INTRODUCTION

The parapharyngeal space (PPS) is a deep neck region characterized by an inverted pyramidal shape, stretching from the base of the skull to the hyoid bone. Tumours located in the PPS are rare representing approximately 0.5% to 1.5% of all tumours of head and neck region.[1] Majority of PPS are benign, accounting for 70% to 80% of cases.

Approximately half of these tumors originate from the salivary glands, representing 40% to 50%.[2] Benign tumors of the salivary glands are most commonly represented by pleomorphic adenomas, while neurogenic tumors rank second in terms of frequency.[3] Tumors of the PPS present challenges for early diagnosis, largely due to their asymptomatic tendency for prolonged durations and the management is further complicated by the complex anatomical configuration of the region.[4] Positron emission tomography (PET) and immunohistochemistry had been important as a screening or even a confirmatory test for molecular changes in cancer.

IHC markers can be used as a companion or supplemental diagnostic test to yield useful data for focused treatment. In addition to myoepithelial cell markers like SMA, MSA, calponin, p63, CK14, S100, vimentin, GFAP, and PLAG1 pleomorphic adenoma exhibits positivity for luminal cell markers CK7, CEA, and EMA.[5] Various surgical techniques have been

outlined for the management of PPS tumors. The most frequently utilized methods for the excision of PPS are transcervical, transoral, trans parotid and trans mandibular approaches.[6] In this case report we present a case of minor salivary gland tumor presenting as parapharyngeal tumor was managed with transcervical approach.

CASE REPORT

A 59-year-old male presented in our department with complaints of dysphagia, change in the quality of voice and swelling in the soft palate for 2 months, (Figure 1). On physical examination the patient was conscious, blood pressure 110/70 mm Hg, heart rate 80 beats/ minute, temperature 98.6 °F and 99% SpO2 on room air.

Laboratory findings were unremarkable. Endoscopy revealed parapharyngeal space tumor while biopsy confirmed as salivary gland tumor. PET-CT scan findings revealed a large hypermetabolic solid soft tissue density lesion in left parapharyngeal space with local extent and no significantly enlarged or metabolically active cervical lymphadenopathy (Figure 2).

Figure 1: Oral view showing swelling in the left parapharyngeal region preoperatively.

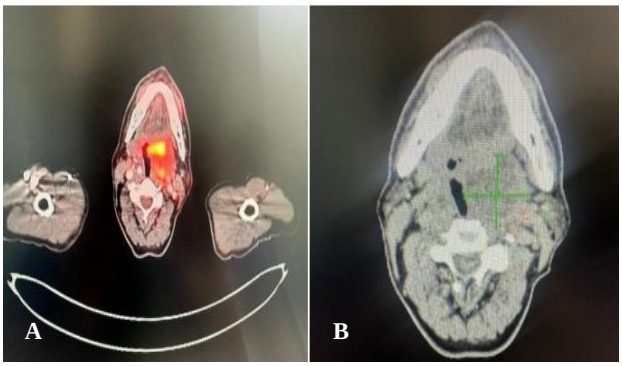

Figure 2 (A & B): Positron emission tomography-computed tomography (PET-CT) image showing parapharyngeal tumor in left parapharyngeal space.

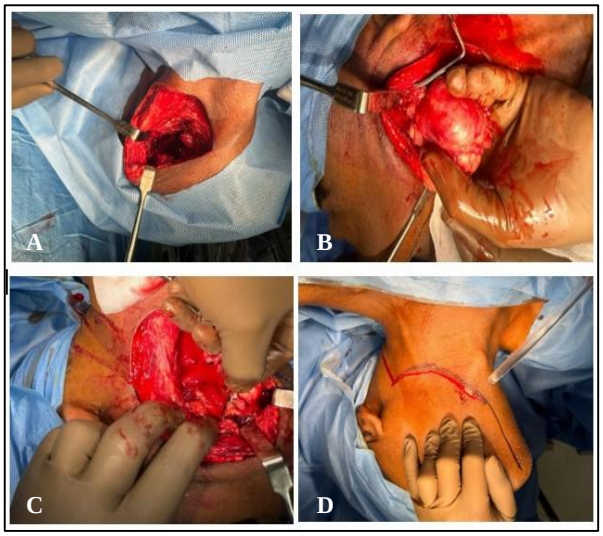

Figure 3 (A-D): Intraoperative pictures showing parapharyngeal tumor excision by transcervical approach.

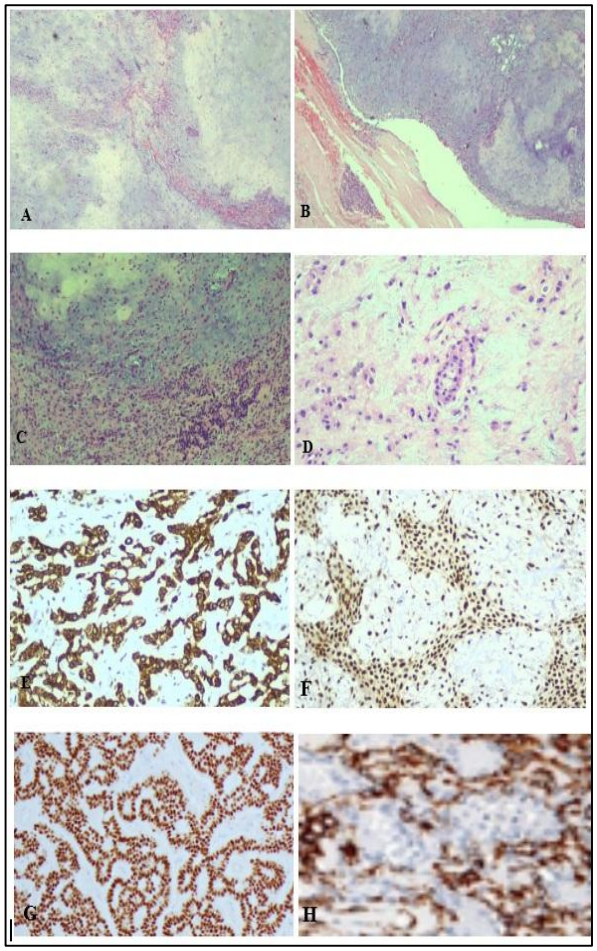

Figure 4: (A & B) Tumor is encapsulated with ductal chondroid matrix and myoepithelial components, (C) Mild nuclear atypia. (D) Ductal elements, (E) CK7 with ductal component, (F) myoepithelial component highlighted by P63. (G) SOX 10 with strong positivity (H) SMA positive.

Following the completion of preoperative and pre-anesthetic evaluation, tumor measuring 8.0×6.0 cm in left PPS was excised through transcervical approach (Figure 3). Microscopic examination of tumor revealed biphasic components of glands and sheets of myoepithelial cells blending into chondroid matrix and peripherally compressed thin intact capsule.

Immunostaining of these components was positive for CK7, SOX10, SMA and P63 (Figure 4). In view of absence of nuclear anaplasia, capsular invasion and necrosis, benign mixed salivary gland tumor; pleomorphic adenoma was confirmed. Patient improved symptomatically and discharged in a stable condition on treatment with IV antibiotics, IV PPI's, IV analgesics, IV antiemetics.

DISCUSSION

PPS tumours are uncommon and are typically benign pleomorphic adenomas.[7] Pleomorphic adenoma of the salivary glands most commonly occurs in the palate, including lip, buccal mucosa, floor of the mouth, tongue, tonsil, pharynx, retro molar area and nasal cavity.[8]

Our case had swelling of soft palate, dysphagia and voice change. Primary symptoms associated with PPS tumor typically include painless swelling in the neck, parotid gland, dysphagia, sensation of foreign body in the throat, nasal blockage, hoarseness, speech slurring and in rare cases facial nerve palsy.[9] For tumors in the PPS, oral biopsy is a minimally invasive, safe, and efficient diagnostic technique that can also help create a comprehensive treatment plan.[10] Biopsy findings from our patient revealed the existence of a salivary gland tumor.

PET when combined with computed tomography (PET/CT) delivers essential functional and anatomical insights crucial for diagnosis, staging and monitoring of tumors.11 A parapharyngeal tumor as a large hyper metabolic soft tissue density lesion was detected in our patients PET-CT scan. Our case is in line with the studies of Hsieh et al, reported SOX 10 as positive marker for salivary gland tumors.[12]

Studies of Ohtomo et al showed that SOX10 is a novel marker for diagnosing and understanding the histogenesis of salivary gland tumors.[13] In a study of 23 benign and malignant salivary gland neoplasms, Scarpellini et al, discovered that alpha SMA is the marker and most myoepithelial cells were the primary source of positivity.[14] Studies on immunohistochemical expression of cytokeratins shown that all malignant salivary gland tumors exhibit immunoreactivity for CK7.[15] Bilal et al, demonstrated that, P63 is expressed in basal and myoepithelial cells of human normal and tumor salivary gland tissues.[16] In this case excision of a parapharyngeal tumor was performed using a transcervical approach, which was similar to the case presented by Hakeem et al featuring same tumor size and surgical approach. The transcervical approach is the most commonly favored surgical method for the resection of PPS tumors.[17] The procedure can be performed with or without identification of the facial nerve and the dissection of its inferior branch. Identifying the facial nerve enables further dissection of soft tissue up to the nerve level, thereby enhancing surgical access.[18] Basaran et al has characterized it as an effective strategy for the complete and complication-free removal of the majority of parapharyngeal tumors.[19] Our patient's condition remains stable after excision of parapharyngeal tumor by transcervical approach.

CONCLUSION

PPS tumours are uncommon of which pleomorphic adenomas of the minor salivary glands are quite rare and can present as tumours of various sizes within the parapharyngeal region. Transcervical approach is the preferred technique for excising tumors in the PPS that have narrow attachments.

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