

Pleomorphic Adenoma Involving the Parapharyngeal Space: Cases Report at Preah Angduong Hospital

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ABSTRACT

The parapharyngeal space (PPS) is a deep anatomical region that may harbor a broad range of pathological entities; however, tumors in this location are uncommon. Pleomorphic adenoma is the most prevalent benign salivary gland neoplasm but is infrequently encountered within the PPS. This report presents two cases of large pleomorphic adenomas arising in the PPS, both presenting with progressive oropharyngeal or cervical swelling.

A detailed preoperative assessment, including contrast-enhanced computed tomography and fine-needle aspiration cytology, was performed to evaluate tumor extent and characteristics. Both patients underwent complete surgical excision using a transcervical submandibular approach without mandibular osteotomy. Histopathological findings confirmed pleomorphic adenoma in both cases.

These cases highlight that a transcervical submandibular approach without mandibular splitting can provide sufficient exposure for safe and complete excision of select benign PPS tumors while minimizing surgical morbidity.

Keywords

Parapharyngeal space, Pleomorphic adenoma, Salivary gland tumor, Transcervical approach.

Introduction

The parapharyngeal space is a deep neck compartment containing critical neurovascular structures. It extends from the skull base to the level of the hyoid bone and is bounded laterally by the mandible and medially by the pharyngeal wall. The styloid process divides this space into pre- and post-styloid compartments [1].

Tumors arising in this region are rare and constitute a small fraction of head and neck neoplasms. Most lesions in the pre-styloid compartment are of salivary gland origin and may arise from the deep lobe of the parotid gland, ectopic salivary tissue, or minor salivary glands [2-4].

Pleomorphic adenoma is the most common benign salivary gland tumor; however, its occurrence within the PPS is uncommon and

may present diagnostic and surgical challenges due to its deep location and proximity to vital structures [2,5].

This study describes two cases of pleomorphic adenoma involving the PPS and discusses their clinical presentation, diagnostic evaluation, and surgical management.

Case Presentation 1

A 42-year-old male presented with progressive difficulty in swallowing and a painless swelling in the right submandibular region over a period of four months. The patient had previously been treated for a presumed peritonsillar infection without improvement.

Clinical examination revealed a smooth bulge of the right soft palate, causing medial displacement of the tonsil and deviation of the uvula. No neurological deficits were observed.

Computed tomography imaging demonstrated a well-circumscribed, enhancing mass measuring approximately 74 × 50

× 42 mm within the right PPS. Fine-needle aspiration cytology suggested a benign salivary gland tumor.

Surgical excision was performed using a transcervical submandibular approach. The tumor was completely removed without the need for mandibular osteotomy.

Histopathological evaluation revealed epithelial and myoepithelial components arranged in duct-like structures and solid areas within a myxoid stroma, consistent with pleomorphic adenoma.

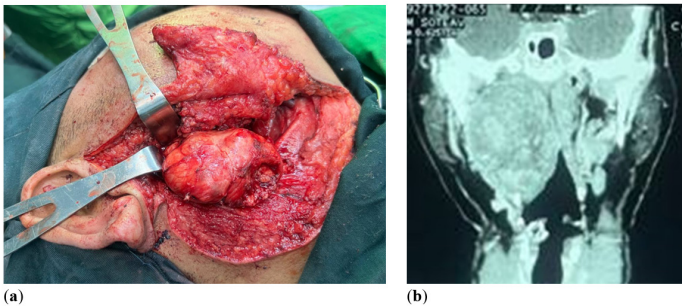


Figure 1: (a) Intraoperative tumor; (b) coronal view of CT scan homogeneously enhancing mass measuring 74 × 50 × 42 mm.

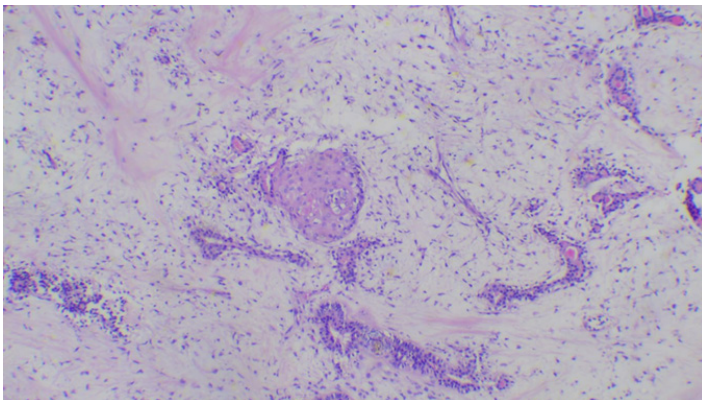


Figure 2: The histological features of the pleomorphic adenoma.

Case Presentation 2

A 29-year-old male presented with a slowly enlarging swelling in the left upper neck over five months. The patient reported mild discomfort but no significant functional impairment.

Radiological assessment revealed a well-defined heterogeneous mass measuring approximately 73 × 60 × 46 mm located in the left PPS. The lesion extended toward the infratemporal region without evidence of invasion into adjacent structures.

The patient underwent complete tumor excision using a transcervical submandibular approach without mandibular division.

Histological examination confirmed the diagnosis of pleomorphic adenoma.

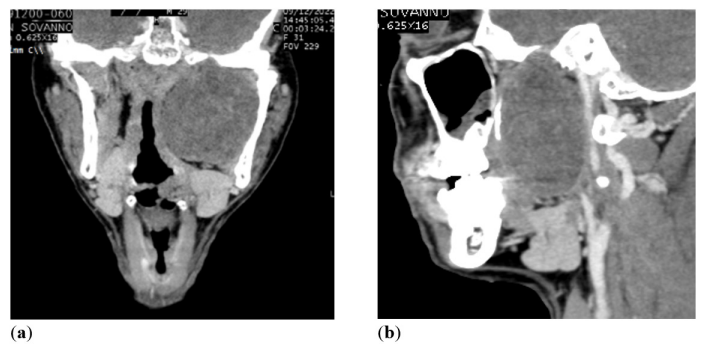


Figure 3: Preoperative CT scan demonstrating well-defined heterogeneous hypodense mass located in the left parapharyngeal space, measuring approximately 73 × 60 × 46 mm: (a) coronal view; (b) sagittal view.

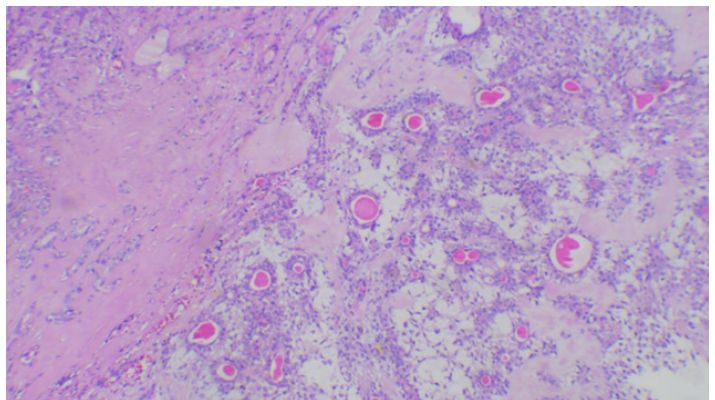


Figure 4. The histological features of the pleomorphic adenoma.

Discussion

Tumors of the parapharyngeal space are uncommon and are predominantly benign [1]. Lesions in the pre-styloid compartment are frequently derived from salivary tissue [3]. Pleomorphic adenoma represents the most common benign salivary tumor and may occasionally occur in the PPS [2,5].

Clinical manifestations are often subtle, including oropharyngeal bulging, dysphagia, or cervical swelling. Symptoms typically become apparent only when the tumor reaches a substantial size due to the deep anatomical location [5].

Imaging is essential for diagnosis and operative planning. Magnetic resonance imaging provides superior soft tissue delineation, whereas computed tomography is useful for assessing tumor extent and its relationship with adjacent bony structures [6].

Fine-needle aspiration cytology is a useful adjunct for preoperative diagnosis, although definitive diagnosis relies on histopathological examination [3].

Surgical excision remains the primary treatment for pleomorphic adenoma in the PPS. Various approaches have been described, including transcervical, transoral, and combined techniques, with selection based on tumor characteristics and anatomical

considerations [7].

The transcervical submandibular approach offers adequate exposure for many benign PPS tumors while avoiding the morbidity associated with mandibular splitting. In both cases presented, complete excision was achieved without complications, supporting the safety and effectiveness of this approach in appropriately selected patients [8].

Conclusions

Pleomorphic adenoma of the parapharyngeal space is a rare condition that requires careful evaluation and surgical planning. The transcervical submandibular approach without mandibular osteotomy is a reliable and safe technique for the management of select benign tumors in this region. Early diagnosis and appropriate imaging are essential to ensure optimal outcomes.

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