Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiology

Parapharyngeal Space Pleomorphic Adenoma: A Rare Case Report and Review of the Literature

H. Dahman[1*], I. Mansir[1], Y. Bouktib[1], A. Elhajjami[1], B. Boutakioute[1], M. Ouali Idrissi[1], N. Idrissi El Ganouni[1]

[1]Department of Radiology, ARRAZI Hospital, Mohammed VI University hospital, FMPM, Marrakech

DOI: https://doi.org/10.36347/sjmcr.2025.v13i05.083 | **Received:** 05.04.2025 | **Accepted:** 16.05.2025 | **Published:** 21.05.2025

***Corresponding author:** H. Dahman
Department of Radiology, ARRAZI Hospital, Mohammed VI University hospital, FMPM, Marrakech

Abstract **Case Report**

Parapharyngeal space tumors are rare, accounting for less than 1% of all head and neck neoplasms [1]. Pleomorphic adenomas, although common in the salivary glands, are infrequent in this location. We report a case of a 45-year-old woman presenting with a parapharyngeal mass revealed by progressive dysphagia and a sensation of a foreign body in the throat. Magnetic resonance imaging (MRI) demonstrated a well-circumscribed mass arising from the deep lobe of the parotid gland and extending into the parapharyngeal space. Complete surgical excision via a transcervical approach was performed without complications. Histopathology confirmed the diagnosis of pleomorphic adenoma. We discuss the diagnostic and therapeutic challenges of these tumors and review the relevant literature.

Keywords: Pleomorphic Adenoma, Parapharyngeal Space, MRI, Transcervical Approach, Salivary Gland Tumor.

INTRODUCTION

The parapharyngeal space (PPS) is a complex anatomical area bounded by the skull base superiorly and the hyoid bone inferiorly. Neoplasms in this space are rare, accounting for approximately 0.5% to 1% of head and neck tumors [1, 2]. Most PPS tumors are benign, with pleomorphic adenomas being among the most frequent benign histologic types [3]. They commonly originate from the deep lobe of the parotid gland or minor salivary glands located within the PPS [4].

Clinical presentation is often insidious due to the spaciousness of the parapharyngeal area, allowing significant tumor growth before symptom onset [5]. Symptoms can include dysphagia, otalgia, and voice changes. Imaging, particularly MRI, plays a crucial role in delineating the extent of the lesion and its relation to surrounding structures [6, 7]. Complete surgical excision remains the mainstay of treatment.

CASE PRESENTATION

A 45-year-old woman with no significant medical history presented with progressive dysphagia, a muffled voice, and a sensation of a foreign body in the throat for several months. Physical examination revealed medial displacement of the oropharyngeal wall without cervical lymphadenopathy.

Contrast-enhanced MRI of the neck demonstrated a well-circumscribed, ovoid mass measuring 5 cm in maximal dimension, located in the right parapharyngeal space. The lesion showed low to intermediate signal intensity on T1-weighted images and high signal intensity on T2-weighted images, with heterogeneous enhancement post-gadolinium administration. The mass appeared to originate from the deep lobe of the parotid gland, displacing the carotid sheath posteriorly without signs of invasion.

A transcervical approach without mandibulotomy was selected. Complete surgical excision of the mass was achieved with preservation of adjacent neurovascular structures. The postoperative course was uneventful.

Histopathological examination revealed a pleomorphic adenoma composed of a mixture of epithelial and myoepithelial cells embedded within a myxoid and chondroid stroma. Surgical margins were negative for tumor involvement.

The patient remained disease-free at 12 months of clinical and radiological follow-up.

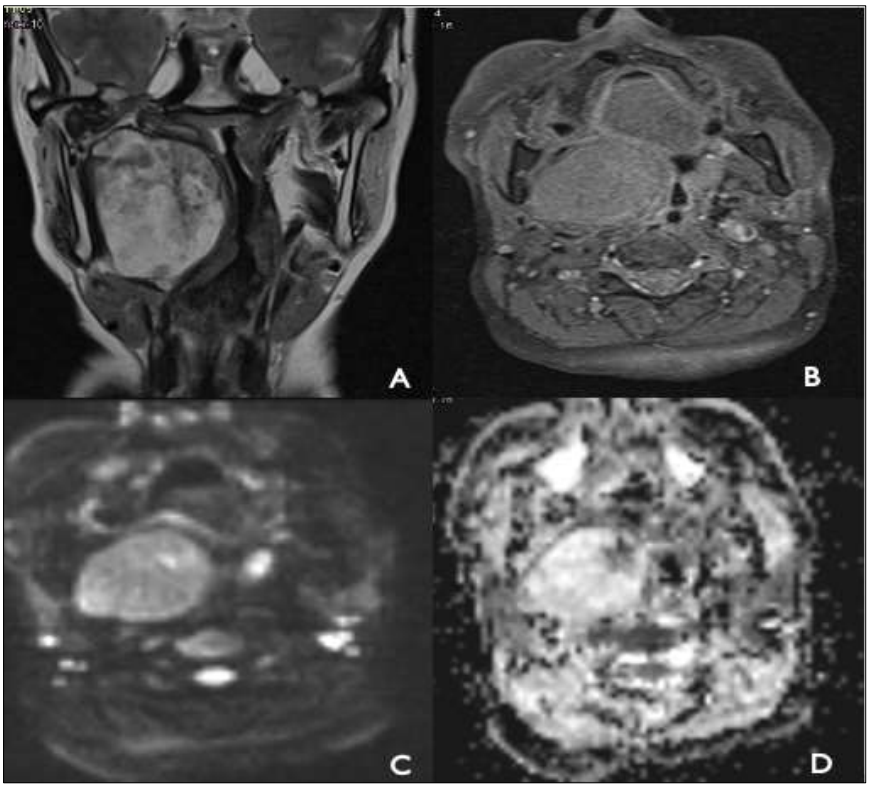

Figure 1: Coronal T2-weighted image (A), axial T1-weighted image (B), diffusion-weighted image (C), and ADC (D) demonstrating a well-defined, heterogeneous mass in the right parapharyngeal space. The lesion shows high signal intensity on T2, low signal intensity on T1, and high intensity on Diffusion with no evidence of restriction

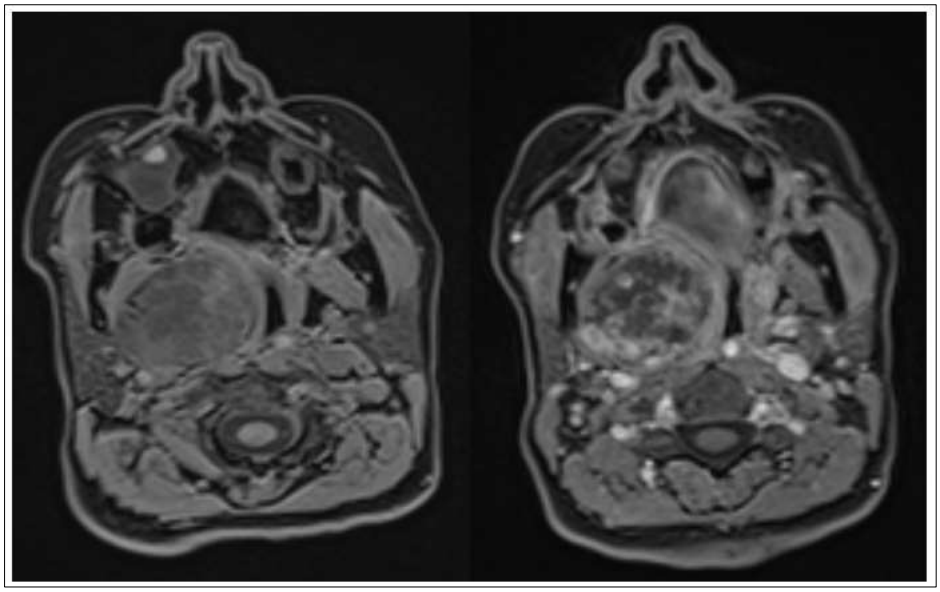

Figure 2: Axial T1-weighted image without (right) and with contrast (left) showing a heterogenous enhancement marked of the parapharyngeal mass

DISCUSSION

Pleomorphic adenomas are the most common benign tumors of the salivary glands, but their occurrence in the parapharyngeal space is uncommon. When they do arise in the PPS, they usually originate from the deep lobe of the parotid gland and extend medially [1-3].

Patients may remain asymptomatic for extended periods, with eventual presentation including dysphagia, a "hot potato" voice, dyspnea, or a visible/palpable oropharyngeal mass [2-8]. Cranial nerve deficits are less common but may occur with large lesions.

MRI is the imaging modality of choice, providing superior soft tissue contrast and aiding in the differentiation between benign and malignant lesions based on morphological characteristics [4-9]. Features favoring a benign diagnosis include a well-circumscribed border, homogeneity, and lack of infiltration into surrounding tissues.

Fine needle aspiration cytology (FNAC) may aid preoperative diagnosis but is technically challenging in the PPS and carries a risk of tumor seeding [5-10].

The goal of surgical management is complete excision with negative margins while preserving vital structures. Various surgical approaches are described, including transcervical, transparotid, and transmandibular routes, depending on tumor size, location, and extension [2-11]. The transcervical approach, as used in this case, is favored for benign, nonvascular, and well-encapsulated tumors [9].

Recurrence rates for pleomorphic adenomas are low following complete excision but may increase with incomplete removal or capsular rupture [3-7]. Malignant transformation, though rare, underscores the importance of early diagnosis and treatment [8-12].

CONCLUSION

Pleomorphic adenomas of the parapharyngeal space are rare and pose diagnostic and surgical challenges due to their deep-seated location. MRI remains the cornerstone of diagnosis, and complete surgical excision via a transcervical approach offers excellent outcomes. Awareness of this entity is essential to avoid delays in diagnosis and optimize management.

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