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Subtotal Parotidectomy for Pleomorphic Adenoma: A Case Report

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Abstract

Pleomorphic adenoma (PA), or benign mixed tumor, is the most common neoplasm of the salivary glands, particularly affecting the parotid gland. It arises from epithelial and myoepithelial cells within a mesenchymal-like stroma and is typically characterized by slow, painless growth. Although benign, PA carries risks of recurrence and malignant transformation, especially in long-standing cases. Early diagnosis and complete surgical excision are key to effective management.

Case Presentation: We present the case of a 46-year-old male with no relevant medical history who reported a progressively enlarging, asymptomatic swelling in the right parotid region over several months. Physical examination revealed a firm, mobile, non-tender mass in the area of the parotid gland, with preserved facial nerve function. Diagnostic workup included high-resolution ultrasound and fine-needle aspiration biopsy (FNAB), both consistent with pleomorphic adenoma. Surgical treatment involved a subtotal parotidectomy of the superficial lobe via a modified Blair incision. Intraoperatively, the facial nerve and all its branches were carefully preserved. Histopathological analysis confirmed the diagnosis of pleomorphic adenoma with clear margins. The patient had an uneventful postoperative recovery, with no facial nerve deficits or wound complications. Follow-up evaluations at three and six months showed no evidence of recurrence.

Conclusion: This case highlights the classical presentation and optimal surgical management of pleomorphic adenoma of the parotid gland. Subtotal parotidectomy remains the treatment of choice for tumors confined to the superficial lobe, offering excellent oncologic control while minimizing functional and cosmetic morbidity. Thorough preoperative evaluation, skilled surgical technique, and long-term follow-up are essential to ensure successful outcomes and monitor for recurrence or malignant transformation.

Keywords: Pleomorphic adenoma; parotid gland tumor; benign salivary gland neoplasm; subtotal parotidectomy; facial nerve preservation; case report

Introduction

Pleomorphic adenoma (PA), also known as a benign mixed tumor (BMT), is the most prevalent neoplasm of the salivary glands, accounting for approximately 60–70% of all salivary gland tumors, with a particular predominance in the parotid gland. Its designation as a "mixed tumor" arises from its biphasic cellular composition, consisting of both epithelial and myoepithelial elements within a mesenchymal-like stroma that may display myxoid, chondroid, or fibrous differentiation. PA most commonly affects adults between the third and sixth decades of life and demonstrates a slight female predominance [1-3].

The precise etiology of pleomorphic adenoma remains largely undefined; however, increasing evidence suggests a multifactorial origin. Environmental factors, such as prior exposure to ionizing radiation—whether therapeutic or occupational—have been recognized as significant contributors to its pathogenesis. Additionally, molecular studies have proposed the involvement of oncogenic viruses, notably simian virus 40 (SV40), in tumor development, although the exact mechanisms and their clinical implications remain under investigation [2-4].

Clinically, pleomorphic adenoma typically presents as a slow-growing, painless, firm mass, most often localized in the superficial lobe of the parotid gland. While benign in histology, it possesses a well-documented potential for recurrence, particularly in cases of incomplete excision, and may undergo malignant transformation over time into carcinoma ex pleomorphic adenoma (Ca-ex-PA). Therefore, prompt diagnosis and complete surgical excision with clear margins are essential. Preservation of the facial nerve during resection is a key consideration due to the nerve's anatomical proximity and critical functional importance. Long-term follow-up is necessary to monitor for recurrence or late malignant transformation [3-5].

Case Presentation

A 46-year-old male with no significant past medical history presented to the otolaryngology clinic with a progressive, painless swelling in the region of the right parotid gland. The mass had been evolving over several months and was not associated with facial asymmetry, pain, fever, or constitutional symptoms. See figure 1.

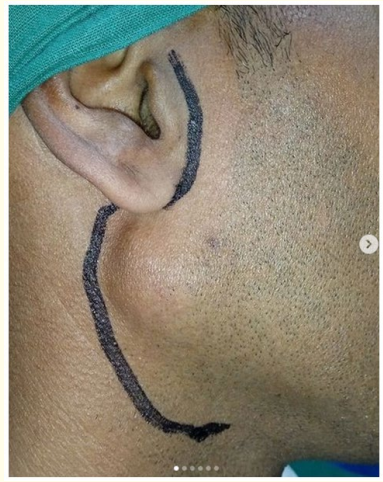

Figure 1

On physical examination, a well-circumscribed, firm, mobile, non-tender mass was palpated in the right preauricular area. No skin changes or regional lymphadenopathy were noted. Facial nerve function was intact, with normal movement of all facial muscle branches.

Initial diagnostic workup included ultrasound imaging, which revealed a hypoechoic, well-defined, lobulated lesion in the superficial lobe of the right parotid gland, measuring approximately X × Y cm, without signs of invasion into adjacent structures. Fine-needle aspiration biopsy (FNAB) was performed, yielding cytological findings suggestive of pleomorphic adenoma: clusters of epithelial and myoepithelial cells embedded in a chondromyxoid stroma, with no evidence of malignancy.

Surgical Management

Based on the clinical and radiological findings, the decision was made to proceed with surgical excision. The patient underwent a subtotal (superficial) parotidectomy under general anesthesia via a modified Blair incision. Intraoperatively, the tumor was encapsulated and confined to the superficial lobe. Careful dissection was performed to identify and preserve all branches of the facial nerve. The mass was excised en bloc with clear margins. See figures 2, 3, 4.

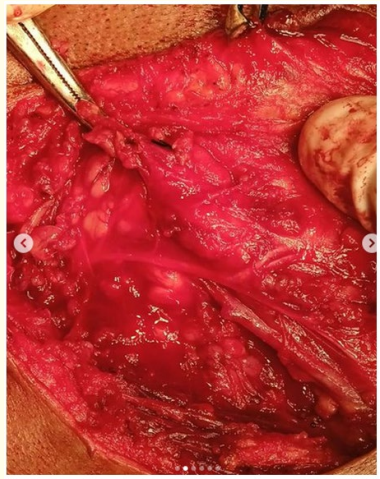

Figure 2

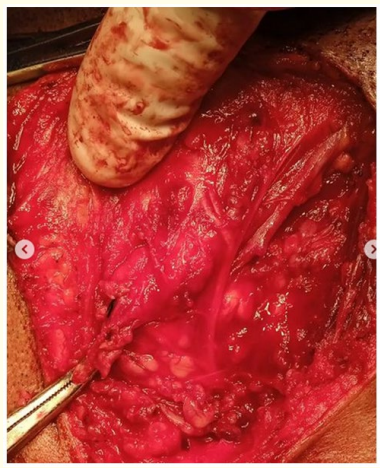

Figure 3

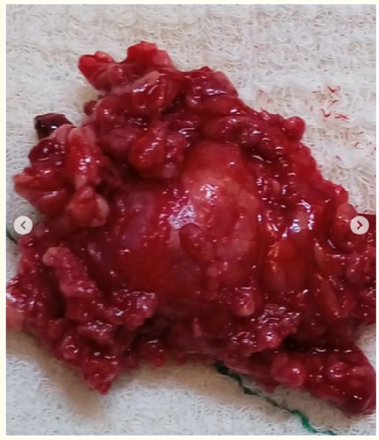

Figure 4

No intraoperative complications were encountered. The surgical specimen was sent for histopathological examination. See figure 5.

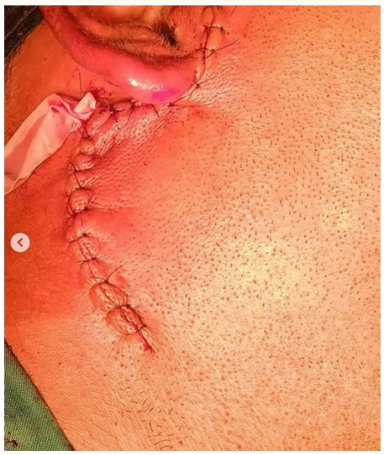

Figure 5

Histopathological Findings

Gross examination revealed a well-encapsulated, lobulated mass with a glistening, whitish cut surface. Histologically, the tumor consisted of a mixture of ductal epithelial cells and myoepithelial cells arranged in duct-like structures and solid nests, embedded within a chondromyxoid matrix. There was no evidence of necrosis, mitotic activity, or capsular invasion. The final diagnosis confirmed pleomorphic adenoma with negative margins.

Postoperative Course and Follow-Up

The postoperative period was uneventful. The patient maintained full facial nerve function, with no paresis or paralysis. Wound healing was satisfactory, and no complications such as hematoma, infection, or salivary fistula were observed.

At the three- and six-month follow-up visits, the patient remained asymptomatic, with no evidence of recurrence clinically or on ultrasound imaging. He continues under regular follow-up to monitor for potential long-term recurrence.

Discussion

This case illustrates the typical clinical and pathological features of pleomorphic adenoma of the parotid gland. Although benign, the tumor's potential for recurrence—reported in up to 4 % of cases after superficial parotidectomy—and for malignant transformation (especially in tumors with prolonged evolution over >10 years) underscores the importance of timely intervention [5-7].

FNAB remains a valuable diagnostic tool, with high specificity for pleomorphic adenoma; however, its sensitivity may vary due to sampling limitations. Imaging modalities such as ultrasound, CT, and MRI are essential to evaluate lesion extent and plan surgical approaches. MRI, particularly, is superior in delineating margins and perineural involvement in complex or recurrent cases [8, 9].

Surgical excision with negative margins is the cornerstone of treatment. Options include extracapsular dissection, superficial parotidectomy, and total conservative parotidectomy, with the approach tailored to tumor size, location, and proximity to the facial nerve. Preservation of the facial nerve is paramount, as its dysfunction significantly affects quality of life. A modified Blair incision provides optimal exposure while ensuring an acceptable cosmetic outcome. Postoperative follow-up is essential due to the risk of delayed recurrence or, in rare cases, malignant transformation [10, 11].

Conclusion

Pleomorphic adenoma should be included in the differential diagnosis of any painless, slow-growing mass in the parotid region. Accurate diagnosis through cytological and radiological assessment, followed by complete surgical excision with facial nerve preservation, is essential for successful management. Long-term follow-up is recommended to monitor for recurrence or malignant change.

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