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Case Report

Parotid gland pleomorphic adenoma: case report and literature review

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ABSTRACT

Pleomorphic adenoma (PA) is the most prevalent benign tumor of the salivary glands, usually involving the parotid gland. Surgical treatment with segmental parotidectomy can be a secure, efficacious, nerve-protection route for superficial lobe lesions. observation can potentially provide an alternative to surgery considering that they may potentially face malignant transformation despite the risks associated with surgery as well as on the quality of life.

Keywords: Pleomorphic adenoma, Parotidectomy, Facial nerve, Segmental parotidectomy

INTRODUCTION

Pleomorphic adenoma (PA) accounts for 40-70% of salivary gland tumors is a clinically significant, histologically benign tumor with two characteristics, one is a susceptibility to local recurrence if not entirely removed, and the other is a modest but lifelong risk of malignant change into carcinoma.[1,2] Parotid cancers often require superficial/total parotidectomy, all these procedures are the best for preventing recurrence. Most dangerous is facial nerve injury, which can induce weakness/paralysis, also all surgical techniques can cause salivary fistulas, Frey syndrome, and cosmetic issues.[3]

CASE REPORT

A 16-year-old male patient was referred to the General Surgery service due to a noticeable swelling mass on the left side of his face, present for at least two years, accompanied by motor dysfunction of left facial nerve, specifically affecting the zygomatic and buccal branches. The patient has no significant prior medical history.

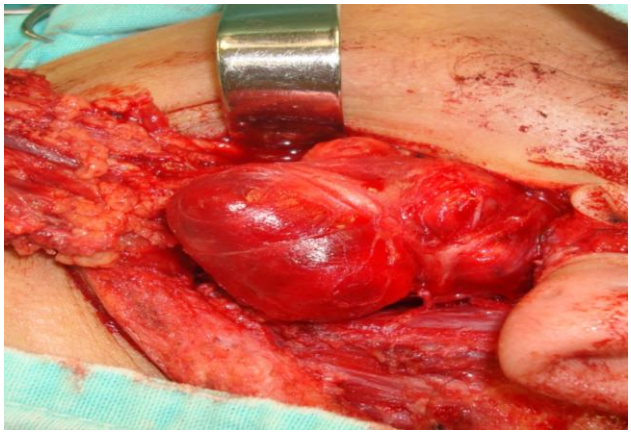

Figure 1: Parotid adenoma surgical adenoma resection.

CT scan indicates a PA mass in the superficial and deep lobes, approximately 4 centimeters with pressure from the facial trunk of the zygomatic and buccal roots, prompting a referral to our clinic for surgical intervention and preservation of the facial nerve, and follow up for 6 months with minimal facial nerve alterations.

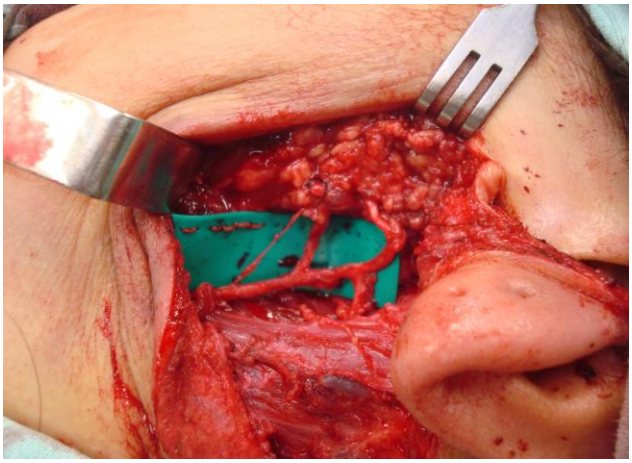

Figure 2: Preservation of facial nerve after surgical resection.

Figure 4: Clouse pre-auricular surgical wound.

DISCUSSION

The treatment of parotid pleomorphic adenoma requires a delicate balance between oncological control and patient quality of life. Segmental superficial parotidectomy represented a significant advance in surgical principles, transitioning from gland-specific surgery to targeted, segmented excision. This procedure is based on the anatomical distal separation of the superficial lobe of the parotid gland and the branching of the facial nerve. By preserving the nerve trunk and its branches to adjacent regions, and resecting only the nerve segment infiltrated by the tumor, iatrogenic damage to neural and parenchymal tissue is reduced.[4]

For this method to be applicable, tumors of the superficial lobe must be unilateral, well-defined, and circumscribed.[5] This aligns with the current trend in surgical oncology toward organ-preserving therapies, through careful patient selection and appropriate surgical specialization. Incorrect application in multifocal, deep lobe, or poorly defined tumors can compromise margins and increase the risk of recurrence.[6] The main advantage of this approach lies in subclinical facial nerve neuropraxia affecting branches without involving the main trunk, and concavity deformity following extensive gland excision. Thus, the technique can improve both aesthetics and functionality.[7] Treating recurrent pleomorphic adenoma is more complex and risk increases of facial nerve injury with each reoperation, involving multiple branches.[8] The higher morbidity is due to several factors: revision surgery requires navigating altered anatomy, scar tissue surrounds and distorts the facial nerve, and tumor biology often presents as multifocal or satellite lesions, necessitating broader dissection in case of recurrence. Initial intervention is the most important in managing this condition.[9] The first surgery must be precise and achieve adequate margins, even if it requires more extensive dissection, to avoid the greater difficulties associated with revision surgery.[10] This neoplasm grows slowly and is usually asymptomatic, but cytological confirmation and extensive preoperative imaging are required to differentiate it from vascular malformations, lymphatic anomalies, and inflammatory processes.[11] Its biological behavior appears to be slow-growing, and complete excision with negative margins improves the prognosis, with low expected recurrence rates. Dissection and preservation of the facial nerve and capsule integrity are similar to surgery in adults, though within a smaller anatomical space. The primary goal is curative resection; the secondary goal is to prevent the effects of irreversible facial nerve injury, given the significant impact this could have on the emotional and functional health of a developing child.[12] Current management depends largely on life stage: definitive surgery in children, surgical intervention in young adults, collaborative and selective decision-making in middle-aged adults, and sometimes non-operative management in the elderly.[13] Future directions include long-term oncological validation of limited resection options, research into biomarkers predictive of tumor behavior, and the development of geriatric assessment tools to more precisely guide the care of this common benign neoplasm.[14]

CONCLUSION

The management of parotid pleomorphic adenoma has become more precise and personalized. A segmental superficial parotidectomy is a detailed procedure that allows for the preservation of healthy tissue in appropriate cases. Achieving success in the initial surgery is critical, as treating recurrent disease often leads to significantly higher rates of complications. Surgical plans should be adapted for specific patient groups-taking a decisive approach for younger individuals and a more selective, conservative one for the elderly. When treating

older adults' active surveillance is a well-supported and reasonable option.

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