BJDOR
BRAZILIAN JOURNAL OF DENTISTRY AND ORAL RADIOLOGY

PCAA
PUBLICAÇÕES CIENTÍFICAS DE ACESSO ABERTO

Case Report

Large Pleomorphic Adenoma of the Parotid Gland: Case Report

Radamés Bezerra Melo [1, 2, *], Ana Beatriz Furtado de Oliveira [2], Viviane Barbosa Aires Leal [2], Jonas Nogueira Ferreira Maciel Gusmão [1], Raissa Pinheiro Moraes [1, 3], Diego Assunção Calixto da Silva [4], Glauber Freitas de Oliveira [5]

[1] Federal University of Ceará, Fortaleza, CE, Brazil.
[2] Paulo Picanço College, Fortaleza, CE, Brazil.
[3] Maurício de Nassau University Center – UNINASSAU, Fortaleza, CE, Brazil.
[4] Federal University of Pará, Belém, PA, Brazil.
[5] Public Regional Hospital of East Pará, Paragominas, PA, Brazil.

* Correspondence: radamesbmelo@hotmail.com.

Abstract: Pleomorphic adenoma is a benign mixed tumor and the most common neoplasm of the salivary glands. This type of lesion typically presents as slow-growing and asymptomatic. The parotid gland is most frequently affected, accounting for approximately 85% of confirmed cases, although, with lower prevalence, it can also affect minor salivary glands. This report describes a case of pleomorphic adenoma in the superficial lobe of the parotid gland. The case involved a male patient, melanodermic, in his sixth decade of life, with an estimated development of the neoplasm over approximately ten years. Clinical examination revealed a painless swelling in the right parotid region, with a firm lesion upon palpation. Facial computed tomography showed a tumor mass located superficially in the right parotid gland. Surgical excision of the lesion was performed under general anesthesia, and the histopathological examination confirmed the preoperative diagnostic hypothesis of pleomorphic adenoma. After four years of follow-up, there was no recurrence, and the patient remains without esthetic-functional sequelae despite the large size of the lesion.

Keywords: Pleomorphic Adenoma; Salivary Glands; Case Report.

Citation: Melo RB, Oliveira ABF, Leal VBA, Gusmão JNFM, Moraes RP, Silva DAC, Oliveira GF. Large Pleomorphic Adenoma of the Parotid Gland: Case Report. Brazilian Journal of Dentistry and Oral Radiology. 2025 Jan-Dec;4:bjd53.

doi: https://doi.org/10.52600/2965-8837.bjdor.2025.4.bjd53

Received: 28 November 2024
Accepted: 25 December 2024
Published: 28 December 2024

1. Introduction

The parotid gland is the most common site for salivary gland neoplasms, accounting for approximately 70.5% of cases, with Pleomorphic Adenoma (PA) being the most frequent type affecting this gland, particularly its superficial lobe (90%) [1]. PA is also known as a benign mixed tumor and is the most common neoplasm in salivary glands. When it involves minor salivary glands, the lesion may present in the palate, upper lip, and buccal mucosa. Among the major salivary glands, the parotid gland is the most affected, followed by the submandibular glands and rarely the sublingual glands [2, 3].

Clinically, pleomorphic adenoma shows a slight predilection for females, typically affects individuals between the third and sixth decades of life, but can occur at any age. It presents as a slow-growing, asymptomatic tumor with a smooth surface. Histopathologically, the lesion may exhibit complete or partial encapsulation, is usually well-circumscribed, and is characterized as an epithelial tumor with a complex morphology. Its parenchyma shows a mix of glandular epithelium and myoepithelial cells with variable morphology [4-6].

In the literature, treatment methods for pleomorphic adenoma often involve surgical excision, but there is no consensus on whether this should be performed with or without safety margins [3, 6]. For neoplastic lesions located in the superficial lobe of the parotid, depending on the tumor's extent, the most commonly employed

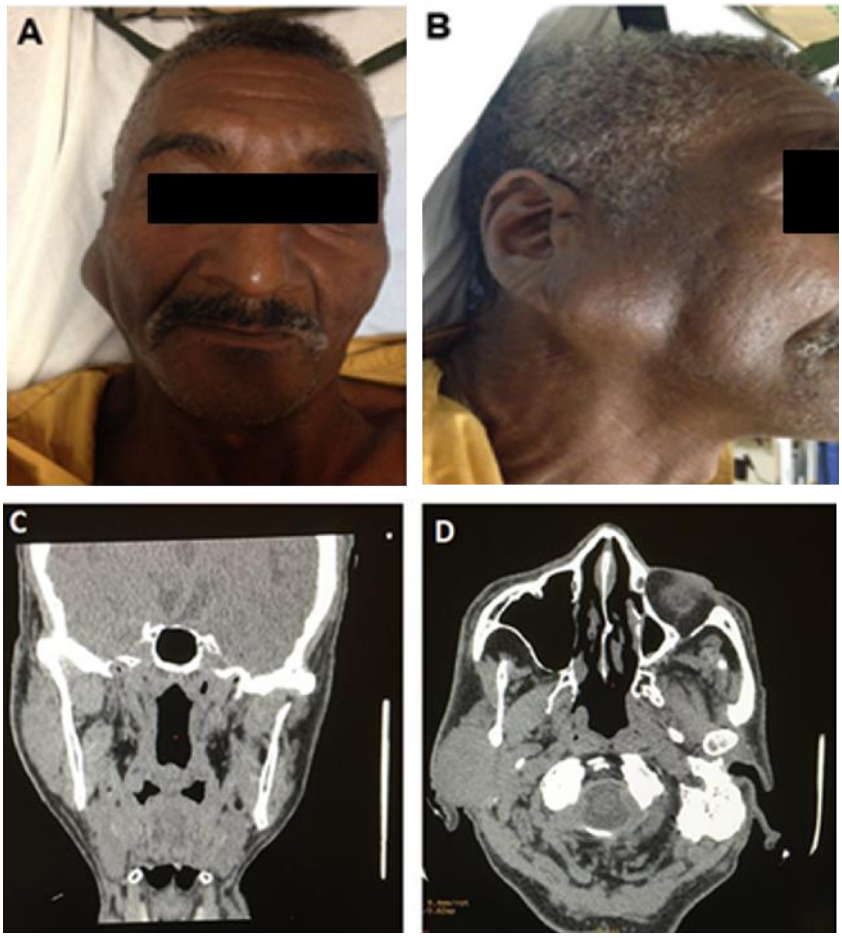
techniques are tumor enucleation combined with partial or total parotidectomy, ensuring safety margins in the affected region [1, 4, 6]. This pathology generally has an excellent prognosis post-treatment, with a low recurrence rate, which is more common when minor salivary glands are affected [4, 7]. Additionally, the risk of malignant transformation in this neoplasm is low, accounting for about 3.5% of confirmed cases. However, the disease's progression time without treatment is a critical factor for its malignancy [4-9].

This work reports a clinical case of unilateral Pleomorphic Adenoma in the superficial lobe of the parotid gland with approximately ten years of progression and a four-year postoperative follow-up.

2. Case Report

A 65-year-old melanodermic male patient was referred to the Oral and Maxillofacial Surgery and Traumatology Service at the Regional Hospital of East Pará, reporting a primarily aesthetic complaint. The patient was presented with a facial volume increase of approximately ten years of progression, causing facial asymmetry (Figures 1A and 1B).

Figure 1: Frontal (A) and lateral (B) preoperative views, CT coronal slice (C), and axial slice (D) showing a firm mass in the superficial lobe of the right parotid gland.



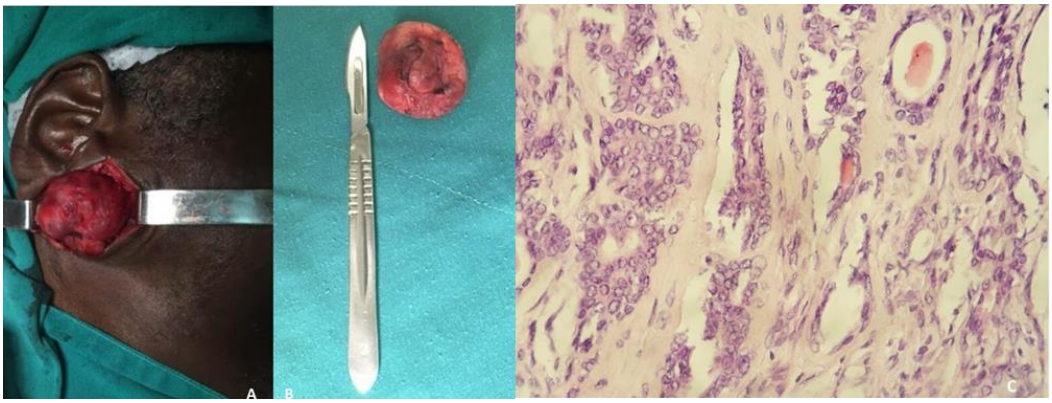
On clinical examination, a swelling was observed on the right side of the face in the parotid region. The lesion was painless, firm on palpation, and showed no alterations in cervical lymph nodes. Computed tomography revealed an image consistent with a solid mass located in the superficial junction region of the right parotid gland

(Figures 1C and 1D). A preoperative fine-needle aspiration biopsy (FNAB) was performed, which tested negative for fluids (solid lesion). Upon analysis, atypical cells were found; however, there was no evidence of malignancy.

The surgical procedure was conducted under general anesthesia in a hospital setting. After subcutaneous infiltration of 2% lidocaine with adrenaline, an incision was made in the skin and subcutaneous connective tissue, dissecting in depth toward the deep bundle of the masseter muscle. A transcutaneous approach was chosen in the parotidomasseteric region (Figures 2A and 2B). Dissection was performed obliquely until reaching the external surface of the parotid gland. Enucleation removed the intact capsule of the tumor mass, and a total/partial parotidectomy was not performed, as the lesion was easily separated from the parotid gland during surgery. Layered sutures were applied, followed by the placement of a compressive dressing on the patient.

The surgical specimen was sent for histopathological examination, which revealed glandular epithelium and myoepithelial cells (Figure 2C), confirming the diagnosis of pleomorphic adenoma in this patient.

Figure 2: Enucleation of the pleomorphic adenoma (A), dimensions of the tumor mass after removal (B), glandular epithelium (blue arrow), and myoepithelial cells (black arrow) at 100x magnification (C).



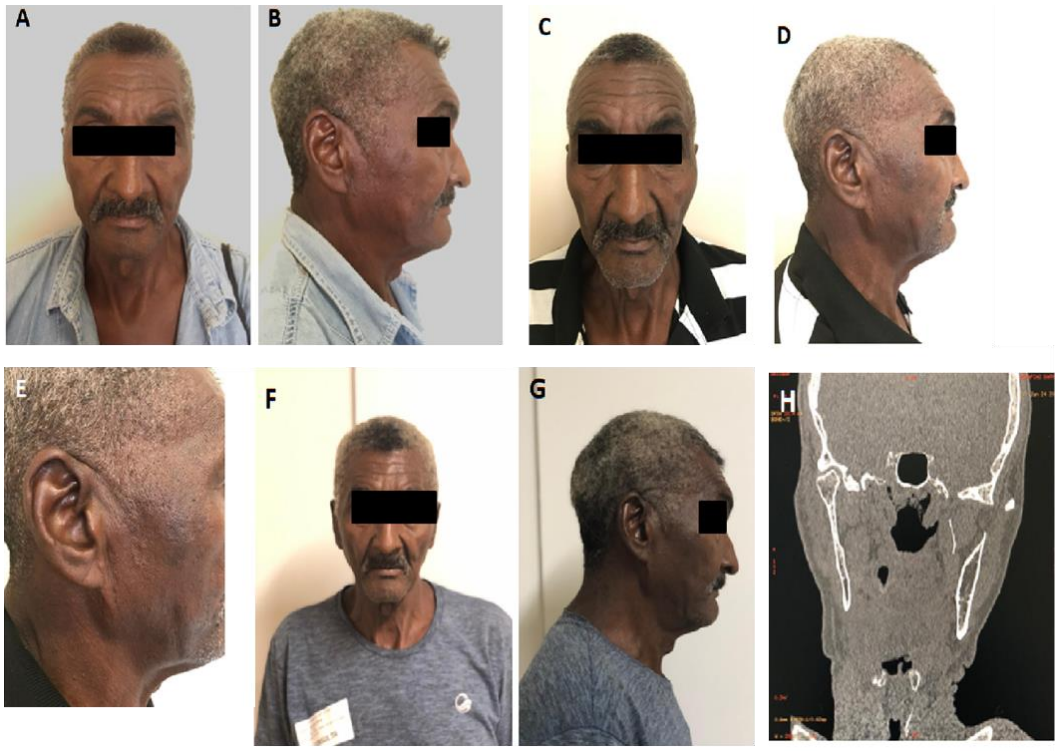
Four years after the removal of the tumor mass, no recurrence of the initial complaint was reported. Clinical and imaging examinations confirmed the absence of recurrence, with no signs of facial nerve damage (Figure 3).

3. Discussion

Pleomorphic adenoma is the most common neoplastic tumor of the salivary glands, with the highest frequency in the parotid gland, accounting for approximately 70% of confirmed cases [8,9]. As a benign lesion, it represents less than 4% of all head and neck tumors. The choice of surgical technique is a critical factor for a good prognosis, as local enucleation without safety margins does not guarantee the integrity of the neoplastic lesion. Incomplete removal or rupture of the capsule during surgery can result in residual cells in the tumor bed [8]. However, the tumor has a low recurrence rate [2].

The etiology of pleomorphic adenoma remains controversial, but it is believed to develop from a mixture of ductal elements and myoepithelial cells. The term "pleomorphic" refers to the variety of histological features observed. This diversity of connective tissue components is attributed to the multipotential properties of myoepithelial cells [9,10].

Figure 3: Frontal (A) and lateral (B) views two years after lesion removal; frontal (C), lateral (D), and enlarged lateral (E) views three years postoperatively; frontal (F), lateral (G), and coronal CT slice (H) four years postoperatively.



In the literature, therapeutic techniques described for the treatment of pleomorphic adenoma (PA) are frequently cited as surgical excision. However, there is no consensus on whether the surgical maneuver should include the removal of the lesion with or without safety margins. Consequently, distinct surgical techniques are applied depending on the region where the neoplasm occurs. For lesions located in the superficial lobe of the parotid gland, superficial parotidectomy with preservation of the facial nerve offers a good prognosis. For lesions in the deep lobe of the parotid gland, total parotidectomy is generally necessary, if possible, with facial nerve preservation. Pleomorphic adenomas of the submandibular glands have a better prognosis when the entire gland is removed along with the neoplasm. Lesions in the hard palate are typically excised beneath the periosteum, including the overlying mucosa. In other oral sites, the lesion is generally easily enucleated through a local incision, with tumor enucleation sometimes combined with partial or total parotidectomy when the parotid gland is involved [8,9].

The potential for malignant transformation of PA has been reported mainly in cases of incomplete surgical excision, multiple recurrences, or tumors left undiagnosed and/or untreated for extended periods. Approximately 6.2% of cases exhibit malignant transformation potential. The malignant transformation of pleomorphic adenoma results in carcinoma ex-pleomorphic adenoma (CexPA) and can manifest in various histological forms. According to the World Health Organization (WHO) in 2005, malignant alterations were categorized into three types: CexPA, carcinosarcoma, and metastatic pleomorphic adenoma, with CexPA being the most commonly encountered [10].

This pathology clinically presents as a firm, painless, and slow-growing mass, often noted by patient's months or years before seeking a diagnosis. PA can occur at any age, but it is more common in young adults and middle-aged adults, typically between 30 and 60 years. In the clinical case presented, the pathology developed in a 65-year-old male patient with an extended progression of approximately 10 years.

Due to its painless nature and slow growth, the patient did not seek immediate medical attention. However, as the lesion developed in the superficial lobe of the parotid gland and presented as an externally visible mass of large dimensions, it caused aesthetic discomfort, prompting the patient to seek a diagnosis and treatment.

In this case, conventional surgical removal was performed under general anesthesia, and enucleation successfully removed the adenoma's intact capsule without the need for safety margins, preserving the facial nerve. The patient has been under postoperative follow-up for approximately three years with no evidence of recurrence.

4. Conclusion

The enucleation technique without safety margins for PA located in the superficial lobe proved to be a suitable choice, as the patient showed no recurrence of the lesion after two years of postoperative follow-up and no facial paralysis or esthetic-functional sequelae. These outcomes demonstrate the positive result of the chosen therapeutic approach and the careful excision of the tumor without residual neoplastic tissue in healthy areas. Although rare, the recurrence of pleomorphic adenoma after a long period post-treatment, as well as malignant transformation, remains a concern. Therefore, long-term follow-up is essential.

Funding: None.

Research Ethics Committee Approval: We affirm that the participant consented to the research by endorsing a clear consent document, and the investigation adhered to the ethical standards outlined in the Helsinki Declaration.

Acknowledgments: None.

Conflicts of Interest: None.

Supplementary Materials: None.

References

1. Mantsopoulos K, et al. Submandibular gland pleomorphic adenoma: Histopathological capsular characteristics and correlation with the surgical outcome. Annals of Diagnostic Pathology. 2018;34:166–169.
2. Melo MNB, et al. Adenoma pleomórfico em lábio superior: Relato de caso. Rev Cir Traumatol Buco-Maxilo-Fac. 2016;16(2):40-43. Disponível em: http://www.revistacirurgiabmf.com/2016/02/Artigos/08.Clinico-AdenomaPleomorfico.pdf
3. Porto DE, Cavalcante JR, Junior JRC, Costa MCF, Pereira SM. Adenoma pleomórfico de parótida – Relato de caso. Rev Cir Traumatol Buco-Maxilo-Fac. 2014;14(2):15–18.
4. Passi D, Ram H, Dutta SR, Malkunje LR. Pleomorphic adenoma of soft palate: Unusual occurrence of the major tumor in minor salivary gland—A case report and literature review. J Maxillofac Oral Surg. 2017;16(4):500–505.
5. Loiola RS, et al. Perfil epidemiológico das neoplasias de glândulas salivares diagnosticadas em São Luís-MA. J Bras Patol Med Lab. 2009;45(5):413–420.
6. Neville BW. Patologia Oral e Maxilofacial. 3ª ed. Rio de Janeiro: Guanabara Koogan; 2009. p. 393–396.
7. Uz U, Celik O. Pleomorphic adenoma of the posterior surface of the soft palate causing sleep disturbance: A case report. Am J Case Rep. 2017;18:1266–1270.
8. Mariano FV, et al. Carcinoma ex-pleomorphic adenoma derived from recurrent pleomorphic adenoma shows important difference by array CGH compared to recurrent pleomorphic adenoma without malignant transformation. Braz J Otorhinolaryngol. 2016;82(6):687–694.
9. Utumi ER, Bernabé DG, Zambon CE, Pedron IG, Peres MPSM, Rocha AC. Adenoma pleomórfico em palato mole. Rev Inst Ciênc Saúde. 2009;27(1):77–80.

10. Lingam RK, Daghir AA, Nigar E, Abbas SA, Kumar M. Pleomorphic adenoma (benign mixed tumour) of the salivary glands: Its diverse clinical, radiological, and histopathological presentation. Br J Oral Maxillofac Surg. 2011;49(1):14–20.