VER
Vascular & Endovascular Review

A Case Report on Giant Carcinoma ex Pleomorphic Adenoma of Submandibular Salivary Gland

Parameshwar S M[1], Shathika J[2], Keerthiga J[3], Hensha H S[4], Hepsiba Selvakumari K[5], Dr. M. Dheenadhayalan[6*], Dr. K Karthickeyan[7]

[1]Pharm.D Intern, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

[2]Pharm.D Intern, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

[3]Pharm.D Intern, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

[4]Pharm.D Intern, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

[5]Pharm.D Intern, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

[6*]Assistant Professor, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

[7]Professor and Head, Department of Pharmacy Practice, School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India.

***Corresponding Author: Dr. M. Dheenadhayalan**
Email: drdheenadhayalanmap@gmail.com, Orcid ID: 0009-0002-0225-7806

ABSTRACT

Background: Carcinoma ex pleomorphic adenoma (Ca ex PA) is an uncommon but highly aggressive malignancy arising from long-standing pleomorphic adenomas. Submandibular gland involvement is rare and often associated with delayed diagnosis.

Case Presentation: We report an 83-year-old female with a 50-year history of a slowly enlarging left submandibular mass that rapidly increased in size during the past two years. Imaging revealed a heterogeneous cystic–solid lesion with coarse calcifications. Wide local excision was performed, and histopathology confirmed carcinoma ex pleomorphic adenoma. Medication management included perioperative antibiotics, analgesia, anemia correction, and postoperative supportive therapy.

Conclusion: This case emphasizes the importance of early excision of pleomorphic adenomas to prevent malignant transformation. Surgery combined with adjuvant radiotherapy offers optimal disease control.

KEYWORDS: Pleomorphic adenoma, Carcinoma ex pleomorphic adenoma, Submandibular gland, Salivary gland malignancy, Giant tumor

How to Cite: Parameshwar S M, Shathika J, Keerthiga J, Hensha H S, Hepsiba selvakumari K, M. Dheenadhayalan, K Karthickeyan., (2025) A Case Report on Giant Carcinoma ex Pleomorphic Adenoma of Submandibular Salivary Gland, Vascular and Endovascular Review, Vol.8, No.18s, 110-113

INTRODUCTION

Pleomorphic adenoma, also known as benign mixed tumor, is the most frequently encountered salivary gland neoplasm, accounting for nearly 60–70% of all salivary gland tumors. It most commonly arises in the parotid gland, followed by the submandibular and minor salivary glands, particularly those of the palate. This tumor is termed “pleomorphic” due to its remarkable histopathological diversity, exhibiting a mixture of epithelial and myoepithelial cells arranged in a variety of architectural patterns within a mesenchymal-like stroma that may show myxoid, chondroid, or fibrous areas. Clinically, pleomorphic adenoma usually presents as a slow-growing, painless, firm, and mobile mass that can gradually increase in size over several years, sometimes causing facial asymmetry or functional impairment depending on its site of origin. Despite being benign, the tumor carries a significant risk of local recurrence if inadequately excised because of its tendency to form microscopic pseudopodia that extend beyond the capsule. Moreover, in long-standing or recurrent cases, pleomorphic adenoma may undergo malignant transformation into carcinoma ex pleomorphic adenoma, emphasizing the importance of early diagnosis and complete surgical excision with adequate margins. Imaging modalities such as ultrasonography, CT, or MRI aid in localization and assessment, while fine-needle aspiration cytology (FNAC) remains a valuable tool for preoperative diagnosis. Histopathological evaluation, however, remains the gold standard for definitive diagnosis. Timely surgical management and regular follow-up are crucial to prevent recurrence and to ensure favorable long-term outcomes for affected patients.

CASE PRESENTATION

2.1 Patient Information

An 83-year-old female presented with swelling on the left side of the neck persisting for 50 years, with rapid enlargement over the past two years. She reported pain and mild hoarseness of voice for two months. There were no significant comorbidities, no exposure to radiation, and no family history of malignancy. She was a non-smoker and non-alcoholic.

2.2 Clinical Examination

- The patient appeared pale.
- Vitals were stable.
- A 20 × 15 × 8 cm swelling was noted over the left submandibular region extending to the left cheek.
- The mass was hard, nodular, irregular, non-pinchable, and had restricted mobility.

2.3 Investigations

1. Blood Tests
   - Hemoglobin: 8.2 g/Dl
   - Total leukocyte count: 7100 cells/mm³

2. Ultrasound
   - Heterogeneous solid mass with cystic degeneration.

3. Contrast-Enhanced CT
   - A 10 × 9 cm cystic lesion with internal septations, solid components, and coarse calcification; no lymphadenopathy.

4. Fine-Needle Aspiration Cytology:
   - Pleomorphic cells with hyperchromatic nuclei and atypical features suggestive of malignant transformation.

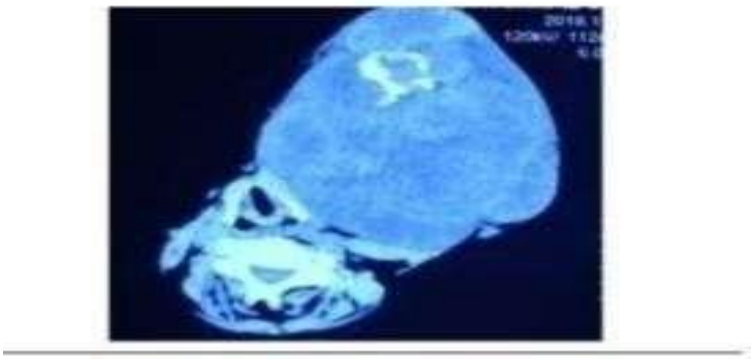
2.4 Surgical Intervention

Wide local excision of the mass was performed under general anesthesia. The postoperative period was uneventful, and the patient was discharged on postoperative day 10.

2.5 Histopathological Diagnosis

Malignant mixed salivary gland tumor—Carcinoma ex pleomorphic adenoma—characterized by residual benign components and malignant epithelial transformation.

MEDICATION MANAGEMENT



3.1 Preoperative Management

1. **Anemia Correction**
   - Iron sucrose 200 mg IV for multiple doses
   - Folate 5 mg PO daily
   - Vitamin B12 1000 mcg IM weekly

Goal: optimize hemoglobin prior to major surgery.

2. **Analgesia**
   - Paracetamol 650 mg PO/IV q8h PRN

3. Antibiotic Prophylaxis

- Ceftriaxone 1 g IV pre-incision
- Metronidazole 500 mg IV
- Standard prophylaxis for head and neck oncologic procedures.

4. Nutritional Support

- Oral protein supplementation
- Multivitamins with zinc

3.2 Postoperative Management

1. Antibiotics (48–72 hours)

- Ceftriaxone 1 g IV once daily
- Metronidazole 500 mg IV q8h

2. Pain Control

- Paracetamol 1 g IV/PO q8h
- Tramadol 50 mg IV/PO q12h PRN

3. Anti-inflammatory Therapy

- Dexamethasone 4 mg IV q8h for 24–48 hours

4. Wound Management

- Topical mupirocin 2%
- Chlorhexidine mouthwash if applicable

5. Thromboprophylaxis

- Enoxaparin 40 mg SC once daily × 7–10 days

3.3 Adjuvant Therapy

1. Radiotherapy:

- Indicated due to tumor size and malignant features
- 60–66 Gy fractionated dose recommended

3.4 Follow-Up

- Regular imaging every 6–12 months
- Monitoring for recurrence
- Continued nutritional and hematologic support

PROCEDURE DONE:

- Wide local excision of submandibular mass done under GA
- Post operative period uneventful
- Patient discharged on POD 10

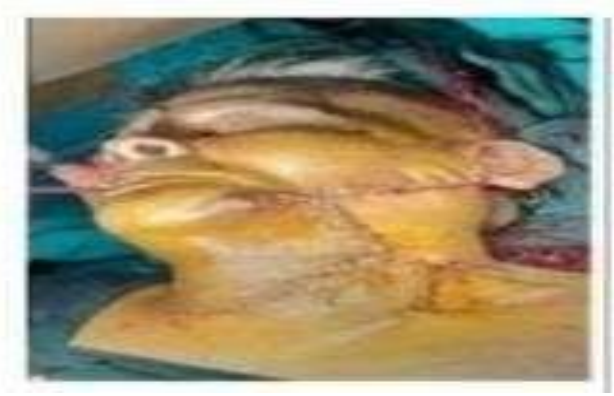
POST OP: Malignant mixed salivary gland tumor carcinoma ex pleomorphic adenoma

DISCUSSION

Carcinoma ex pleomorphic adenoma is a rare malignant tumor arising from long-standing pleomorphic adenomas. Chronicity beyond two decades significantly increases the risk of malignant transformation. In this case, the lesion remained untreated for 50 years, followed by a period of rapid enlargement—an alarming clinical indicator.

Imaging typically shows heterogeneous cystic–solid lesions with calcifications, reflecting long-standing pathology. FNAC may indicate atypia but histopathology remains definitive. Complete surgical excision is essential, as residual tumor markedly increases recurrence. Due to aggressive behavior, adjuvant radiotherapy is advisable in high-grade or giant lesions.

This case underscores the importance of early surgical intervention in benign salivary tumors to prevent progression to aggressive malignancy.



CONCLUSION

Carcinoma ex pleomorphic adenoma of the submandibular gland is an uncommon but highly aggressive malignancy. Delay in management of benign pleomorphic adenoma significantly increases the risk of transformation. Surgical excision with clear margins remains the primary treatment, and adjuvant radiotherapy further improves outcomes. Early recognition and timely intervention are essential to prevent advanced disease.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

FUNDING

No funding was received for this study.

ACKNOWLEDGEMENT

The authors would like to thank the Department of General Surgery, Madurai Medical College, for their valuable support and guidance during the preparation of this case report.

REFERENCES:

1. Antony J, Gopalan V, Smith RA, Lam AKY. “Carcinoma ex pleomorphic adenoma: a comprehensive review of clinical, pathological and molecular data.” *Head & Neck Pathol.* 2012;6(1):1-9. ([PMC][1])
2. Hellín-Meseguer D, Melgarejo-Moreno P, Hostalet E. “Carcinoma ex pleomorphic adenoma of the submandibular gland with distant metastases.” *B-ENT.* 2007;3(1):27-9. ([PubMed][2])
3. Liu S, Lu H, Liu L, et al. “Carcinoma ex pleomorphic adenoma of the submandibular gland: A retrospective analysis of 86 patients.” *Oral Dis.* 2023;29(4):1602-1612. DOI:10.1111/odi.14168. ([PubMed][3])
4. Bratiloveanu M. “Challenges in the Management of Giant Carcinoma ex Pleomorphic Adenoma.” *Med. Kaunas.* 2024;61(1):37. ([MDPI][4])
5. Mizui T, Bowcock A, et al. “Malignant transformation of a gigantic pleomorphic adenoma of the submandibular gland.” *J Oral Maxillofac Surg.* 2000;58(9):957-960. ([joms.org][5])
6. Khanna D, et al. “Carcinoma ex pleomorphic adenoma: a case report and review of literature.” *J Oral Pathol Med.* 2019;48(9):824-828. ([PMC][6])
7. Xu, et al. “Carcinoma ex pleomorphic adenoma of the submandibular gland: a retrospective analysis of 86 patients.” *Oral Dis.* 2023;29(4):1602-1612. (Duplicate of #3, but worth cross-referencing) ([PubMed][3])
8. Chang YH, Kuo C, Chang TH, Chen MK, Lin JC. “Treatment outcome and prognostic factors analysis of carcinoma ex pleomorphic adenoma of major salivary glands.” *Ther Radiol Oncol.* 2023;7:14. DOI:10.21037/tro-23-11. ([tro.amegroups.org][7])
9. Rossi L, Giordani E, et al. “An unusual case of spleen metastasis from carcinoma ex pleomorphic adenoma of the parotid gland.” *World J Surg Oncol.* 2014;12:18. ([PMC][8])
10. Zanella VG, et al. “Pleomorphic adenoma and carcinoma ex pleomorphic adenoma: A comprehensive proteomic analysis.” *Oral Dis.* 2025; (in press). ([Wiley Online Library][9])
11. Garajei A, et al. “Case report: Enormous high-grade carcinoma arising from pleomorphic adenoma of the submandibular gland.” *Oral Dis.* 2025; (article ahead of print). ([ScienceDirect][10])
12. Wu Z, et al. “Surgical Treatment of a Giant Pleomorphic Adenoma of the Submandibular Gland.” *Front Surg.* 2021;8:800563. DOI:10.3389/fsurg.2021.800563. ([Frontiers][11])