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CASE REPORT

Carcinoma Ex-Pleomorphic Adenoma: A Silent Transformation with Aggressive Potential

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ABSTRACT

Introduction: Pleomorphic adenoma represents majorly encountered tumor of the salivary glands which is benign, predominantly involving the parotid region. Despite its indolent presentation, it possesses a latent possibility of being malignant which is known as "carcinoma ex pleomorphic adenoma", emphasizing the necessity of timely identification and definitive surgical treatment.

Case Scenario: A 52-year-old man was admitted with a slowly enlarging painless lump in the left parotid region which had been present 6 months. Ultrasound and MRI imaging studies showed a well-defined heterogeneous mass compatible with pleomorphic adenoma. The lesion was surgically removed. Histologic appearance of a biphasic lesion composed of epithelial/myoepithelial components set in a chondromyxoid stroma was seen. There were areas of nuclear atypia and pleomorphism, but no definite signs of malignancy.

Discussion: Although pleomorphic adenomas are usually benign, they should be carefully examined as can develop into malignant tumors over time. Accurate diagnosis and treatment planning requires an accurate approach to diagnosis including clinical examination and microscopic analysis, and imaging techniques. Treatment mainly consists of surgical removal, and particularly if histology reveals atypical features. In such cases, it is advised to have long term monitoring to find early indications of recurrence or malignant change.

Conclusion: The importance of early diagnosis and complete evaluation of salivary gland tumors is emphasized in this case. Surgical excision as frequently as possible and guided by a pathologic diagnosis is effective in its ability to prevent malignant transformation and to improve patient outcome.

Keywords: Histopathology, Malignant transformation, Pleomorphic adenoma, Parotid neoplasm, Salivary gland tumor.

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INTRODUCTION

The major encountered salivary gland neoplasm is pleomorphic adenoma, also known as benign mixed tumor, which prefers to occur in the parotid gland.[1] Around 60–70% of salivary gland tumors can be accounted for by this, and the parotid is the most frequent site.[2] Despite carrying a possibility of developing into carcinoma ex pleomorphic adenoma, the tumor is usually not dangerous but on occasion, may be so.[3] Malignancy occurs more frequently in this case due to the duration of the tumor, recurrence or histological signs of atypia.[4] Malignant transformation is reported to occur in lesions that persist for more than ten years, a rate of about 6% is noted, with size, and these are the key contributing factors.[5] Nevertheless, definitive diagnosis and evaluation of the risk for malignant change[6] require histopathological evaluation. In the initial stage, ultrasound and MRI are useful in distinguishing between benign and clinically suspicious lesions. Fine needle aspiration cytology (FNAC) is a useful, minimally invasive tool for preliminary diagnosis, still FNAC's ability to differentiate pleomorphic adenoma from malignant forms is limited.[7] Thus, the gold standard after excision is complete histopathological examination.[8] Treatment is usually extracapsular dissection or superficial or total parotidectomy, depending on size and location of the tumor.[9] The most important point in such larger tumors is trying to protect the facial nerve during the surgery as the postoperative complications are severe.[10] After surgery an individual needs to undergo regular follow up with a watch for recurrence and especially malignant changes.

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CASE SUMMARY

A man aged 52-years comes with a complain of progressively increasing swelling on left side of the neck, persisting for the past six months. The lesion, situated anterior and inferior to the left ear lobule, was painless, had a sudden onset, and gradually increased in size from a pea to a lemon over time. There was no complain of pain, ear discharge, muscle weakness of face, or difficulty in mastication or eyelid closure.

His past medical history was unremarkable, with no prior history of diabetes mellitus, hypertension, tuberculosis, jaundice, or surgical procedures. The patient reported a decade-long history

of smoking but denied alcohol intake and tobacco chewing. No significant familial or genetic predisposition was noted.

General physical examination revealed a conscious, alert, and cooperative individual with stable vital parameters. On local inspection and palpation, a 4 × 3 cm firm, globular swelling was noted in the left parotid region. The mass displaced the earlobe superiorly and laterally. The overlying skin was unremarkable, with no signs of inflammation or fixation. The swelling was non-tender and mobile, without adherence to deeper structures. No regional lymphadenopathy was identified. Facial nerve function remained intact on clinical assessment.

Ultrasonography (USG): revealed a well-defined, heterogeneously hypoechoic lesion containing calcific foci and cystic components, situated below the left parotid gland. The lesion exhibited minimal internal vascular flow, suggesting a benign etiology.

Contrast-Enhanced Computed Tomography: CECT of the head and neck region demonstrated an enlarged left parotid gland harboring multiple heterogeneously hypodense lesions, some displaying necrotic changes. These masses arose predominantly from the superficial lobe. Additionally, a few subcentimetric lymph nodes were visualized. The overall radiological impression favored a neoplastic pathology, with granulomatous differential considered.

Surgical Management: A complete excision of the mass was performed under GA. The resected specimen was immediately submitted for histopathology lab.

Gross Pathology: Macroscopic evaluation of the surgical specimen revealed a solitary, well-demarcated soft tissue mass measuring 3.5 × 3 × 2 cm. The outer surface appeared smooth. Cut surface show gray-white to gray-brown solid areas, without evidence of hemorrhage or necrosis.

Microscopic Findings

Histological sections showed a partially encapsulated tumor comprising epithelial cells and myoepithelia. Epithelial cells show nested pattern , sheets and trabeculae, with nuclei being round to oval and the cytoplasm being moderately eosinophilic. The nuclei of myoepithelial cells being round to oval eccentric with clear cytoplasm. Focal areas revealed chondromyxoid stroma. Additionally, cellular atypia with hyperchromatic nuclei, nuclear borders were not regular, the nucleoli being prominent and the cytoplasm being eosinophilic, suggesting malignant potential.

CONCLUSION

This case reinforces the value of prompt appreciation and surgical intervention in pleomorphic adenomas, particularly those exhibiting features of malignancy. Comprehensive

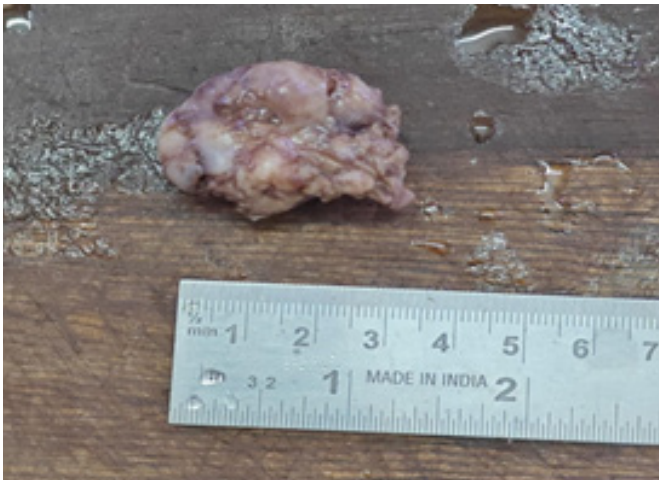

Figure 1: Gross picture of pleomorphic adenoma.

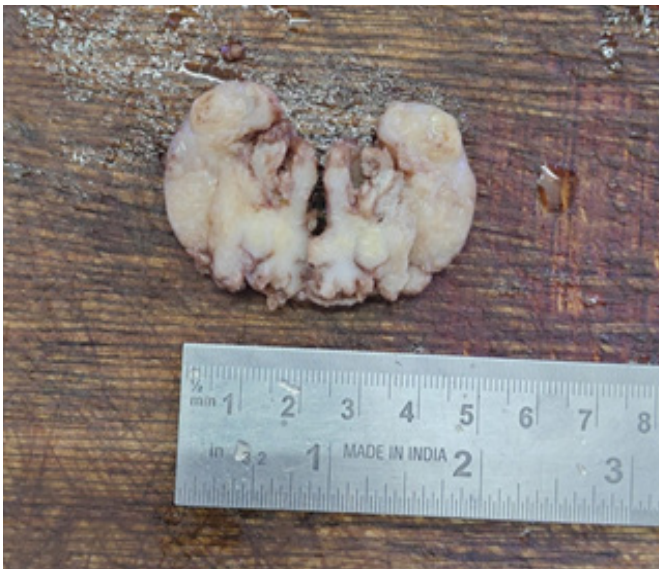

Figure 2: Cut surface: showing gray white to gray brown solid areas.

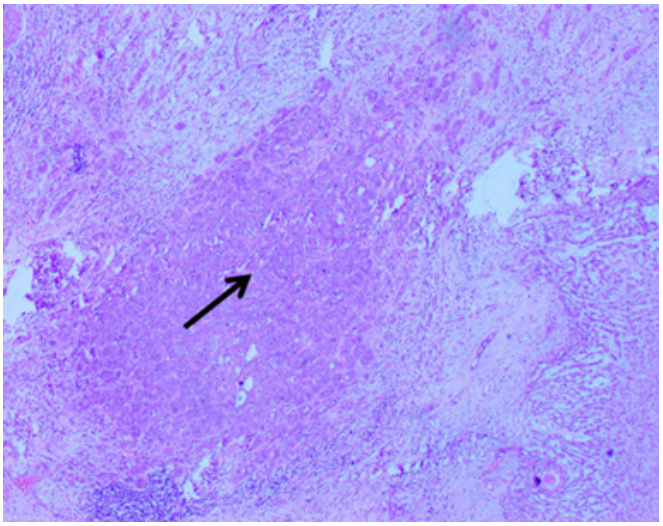

Figure 3: 4x H&E- showing a cellular area with malignant potential.

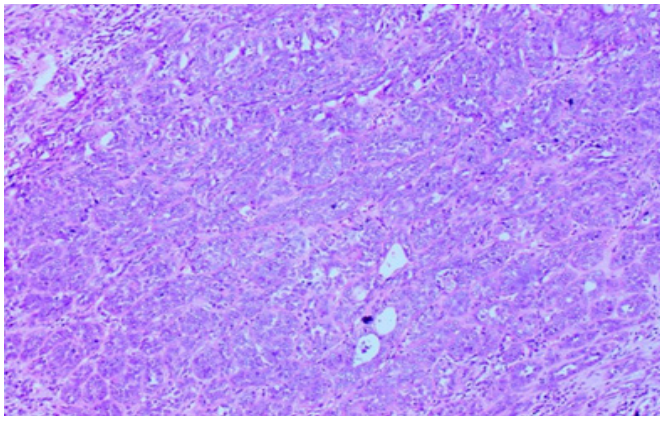

Figure 4: 4 x H&E- showing glandular arrangement of tumour cells showing mild pleomorphism (variability in size & shape) without significant atypia or mitotic activity.

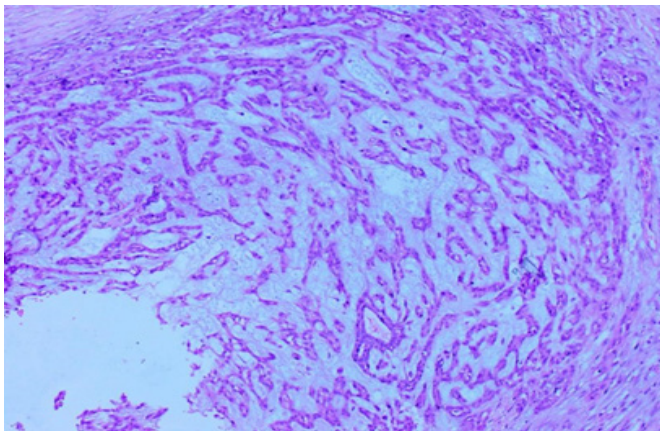

Figure 5: 10 X H&E- showing area of pleomorphic adenoma with chondromyxoid background.

clinical, radiological, and histopathological evaluation is essential for optimal patient outcomes.

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