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SOLID VARIANT OF PRIMARY PAROTID ADENOID CYSTIC CARCINOMA: A CASE REPORT

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ABSTRACT **Introduction:** Adenoid cystic carcinoma is a rare form of cancer that primarily affects the salivary glands. This malignancy is characterized by its slow growth and distinctive histological patterns, often presenting as a painless mass in the affected area. It is most frequently diagnosed in adults aged 40 to 60 years, with a slight predominance in females. Although it is the second most common malignant salivary gland neoplasm and constitutes approximately one-third of all salivary gland malignancies, it is relatively rare in the parotid gland. Here, we present a case report of a solid type of adenoid cystic carcinoma involving the parotid salivary gland in a 45-year-old female. **Case Report and Discussion:** This is a case of a 45-year-old female who presented with a primary complaint of left infra-auricular swelling of two months' duration. An ultrasound revealed a relatively well-defined, solid-cystic lesion with posterior acoustic enhancement involving the lateral aspect of the superficial lobe of the left parotid gland, showing minimal internal vascularity on a color Doppler study. Fine-needle aspiration cytology (FNAC) of the left parotid region swelling demonstrated a salivary gland neoplasm of uncertain malignant potential (SUMP), according to The Milan System for Reporting Salivary Gland Cytopathology. The patient was managed surgically with a left superficial parotidectomy, and the specimen was sent for histopathological examination. The analysis revealed an unencapsulated, infiltrative, and intracystic tumor composed of a proliferation of monotonous, dark blue basaloid cells arranged mainly in solid nests and islands. These structures were separated by thin, eosinophilic (pink) bands, giving the tumor a distinct jigsaw-puzzle, lobular appearance. Peripheral palisading was observed in a significant number of these tumor islands. Subsequent immunohistochemistry confirmed the diagnosis of a solid variant of adenoid cystic carcinoma. **Conclusion:** The parotid gland malignant tumor known as ACC is uncommon. ACC is a secretory gland tumor that grows slowly but exhibits a remarkable propensity for local dissemination and recurrence. Surgery is the only effective treatment; however, radiation may be used as an adjuvant or in more severe instances. Because metastasis can appear very slowly, early diagnosis is essential for a better prognosis and quality of life.

KEYWORDS : Adenoid Cystic Carcinoma, Parotid Gland, Superficial Parotidectomy, Case Report

INTRODUCTION

Adenoid cystic carcinoma (ACC) is a slow growing, but aggressive neoplasm with a remarkable capacity for recurrence. It forms about 1% of all malignant tumors of the oral and maxillofacial region and 21.9% of all salivary gland malignancies.

It can arise in any salivary gland site, but approximately 50–60% develops within the minor salivary glands. In the parotid gland, the ACC is relatively rare, constituting only 2–3% of all tumors. Although it presents a widespread age distribution, peak incidence occurs predominantly among women, between the 5th and 6th decades of life. It is clinically deceptive by virtue of its small size and slow growth, which belies its extensive subclinical invasion relentlessly into adjacent structures. ACC has three histopathologic patterns, viz., tubular, cribriform and a solid pattern. Solid pattern is associated with increased local recurrence, high metastatic rate and higher mortality.

Diagnosis typically involves a combination of medical history review, physical examination, ultrasound, Fine needle aspiration cytology and biopsy of the tumour tissue. The biopsy reveals the tumour's histological characteristics, which are crucial for diagnosis.

The treatment of ACC is chiefly surgical, although in some cases it has been successfully coupled along with X-ray radiation. ACC remains an extremely difficult disease to treat due to high predisposition for recurrence and metastasis if a patient lives long enough, and this occurs even when radical excision has been performed

Fig 1. Showing Swelling Over Parotid Region

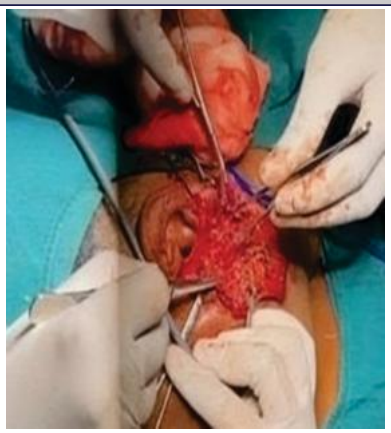

Fig 2. Showing Superficial Parotidectomy

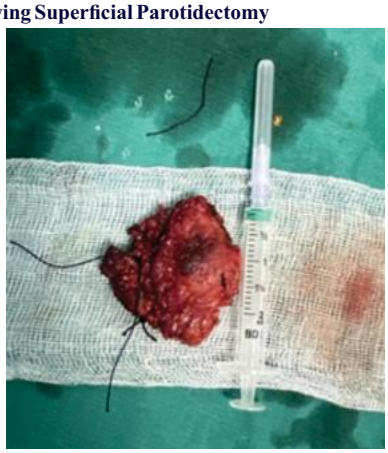

Fig 3. Showing Specimen After Surgical Excision

Case Report

A 45-year-old female patient presented with swelling in the left infra

auricular region for the past two months. The patient reported being healthy two months prior when she first noticed the swelling in the left infra auricular region. The swelling was insidious in onset and gradually progressive in nature, with no aggravating or relieving factors. There was no significant medical or family history. Physical examination revealed a nontender and mobile swelling measuring 3.0×3.0 centimeters, located in the left infra auricular region with extension to the angle of mandible anteriorly, with no previous scar marks, skin discoloration, active discharge, raised temperature, or bleeding. Ultrasound showed relatively well defined solid cystic lesions with posterior acoustic enhancement involving lateral aspect of superficial lobe of left parotid gland with minimal internal vascularity on colour doppler. FNAC confirmed features are suggestive of salivary gland neoplasm of uncertain malignant potential. Patient underwent superficial parotidectomy. Histopathology examination showed unencapsulated infiltrative intracystic tumor composed of proliferation of the monotonous looking dark blue basaloid cells arranged mainly as solid nests, islands seperated by the thin pink bands giving it a jigsaw puzzle, lobular appearance. Capsular invasion is evidenced. Immunohistochemistry IHC-P63, CD-117, KI-67, IHC-CK7 confirmed Adenoid cystic carcinoma.

DISCUSSION

Adenoid cystic carcinoma (ACC) is a rare malignant salivary gland tumor characterized by slow growth that primarily affects the minor salivary glands. Beyond these minor glands, it is also frequently observed in the submandibular and sublingual glands, whereas primary occurrence in the parotid gland is exceedingly rare. ACC accounts for approximately 3% to 5% of all head and neck malignancies, and it exhibits a 10-year survival rate of around 60%. When localized to the parotid gland, it represents a mere 2% to 3% of all parotid tumors. Biologically, this carcinoma is characterized by widespread local infiltration, a distinct propensity for perineural spread, and a high rate of local recurrence.

Histopathologically, ACC is classified into three distinct architectural patterns: cribriform, tubular, and solid. The solid pattern is associated with a significantly poorer prognosis, an accelerated clinical course, and a lower long-term survival rate (reported to be approximately 20% at 10 years). At the molecular level, a MYB-NFIB gene fusion resulting from a recurrent translocation (\(t(6;9)\)) has emerged as a hallmark diagnostic biomarker for ACC. Additional genetic alterations within the MYB/MYC signaling pathways also play a critical role in its pathogenesis and disease progression.

A comprehensive, multimodal treatment approach—frequently integrating radical surgical resection with adjuvant radiotherapy—is recommended to achieve optimal local disease control and improve overall survival. The present case involves a 45-year-old female who presented with a primary complaint of left infra-auricular swelling persisting for two months. Following an initial diagnosis of a salivary gland neoplasm via fine-needle aspiration cytology (FNAC), magnetic resonance imaging (MRI) was performed to evaluate local tumor extension and rule out regional or distant metastasis. This case highlights the vital importance of a multidisciplinary management strategy, a paradigm heavily supported by current literature demonstrating that combined-modality therapy (surgical resection followed by adjuvant radiotherapy) yields superior long-term outcomes and disease control.

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