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Mucoepidermoid Carcinoma of the Parotid Gland Simulating as an Abscess

Abstract

Salivary gland cancers are rare and majority of them occur in the parotid gland. Amongst them, mucoepidermoid carcinoma is the most common malignant salivary gland neoplasm and makes up to 40–50% of malignant parotid gland tumors. They present with diverse clinical presentations. These tumors are typically classified into three histological grades (low, intermediate, or high) which strongly correlate with the clinical behavior and overall prognosis of the patient. The initial diagnosis is based upon the physical examination and the location of the mass within or arising from either major or minor salivary glands. However, in some cases the diagnosis of mucoepidermoid carcinoma may be missed especially where there is an atypical presentation. We herein report one such unusual manifestation of this tumor in a 54-year-old male who was suspected as a case of parotid abscess.

Keywords: Parotid gland, Abscess, Mucoepidermoid carcinoma, Histopathology

Introduction

Salivary gland neoplasms account for approximately 5% of all the head and neck malignancies, but fewer than 1% of all the body malignancies.¹ However, despite their rarity, these malignancies represent a highly diverse range of histological subtypes. Of these, mucoepidermoid carcinoma (MEC) is the most common and represents 50% of all parotid malignancies.² It represents 29–34% of all malignant tumors originating in both major and minor salivary glands and occurs over a wide age range of 15–84 years with no gender predominance. MEC usually presents as firm, smooth, often cystic, tan swelling with well-defined or infiltrative borders. Low-grade tumors closely resemble benign cystic lesions. Intermediate-grade and high-grade MECs are usually infiltrative growths, and cyst formations are less pronounced than those in low-grade tumors. Histologically, MECs are made up of four cell types in different proportions: mucous-producing cells, epidermoid cells with squamous differentiation, undifferentiated small cells and clear cells. We present one such unusual case of a 54-year-old man with high-grade MEC masquerading as parotid abscess leading to initial misdiagnosis and therapeutic delay in the patient.

Case Report

A 54-year-old male presented to the surgical outpatient department with a swelling on the right side of the face since last 4 months. He also gave history of off and on fever without chills/rigors or any weight loss. He was a non-smoker, non-alcoholic and vegetarian by diet. His past medical history and family history were insignificant. On local examination, the swelling was in the right parotid gland region displacing the ear lobe anteriorly. It was diffuse having irregular outer edges, measuring 5×4 cm. It was slightly red in color, soft, tender, and was not associated with any elevated temperature or bruit/thrill. Oral examination showed fullness in right tonsillar fossa and uvula was slightly medialized. A clinical diagnosis of parotid abscess was made. Ultrasonography exhibited a heterogeneous lesion comprising of solid cystic areas in the lower part of right parotid gland. A radiological diagnosis of a parotid abscess was made. The patient was planned for surgical drainage and 10 cc of pus was drained.

He was started on antibiotic therapy and discharged. However after 2 months, the patient again presented with the similar swelling on the same site. Fine needle aspiration cytology (FNAC) was advised. On FNAC, pus was aspirated which on microscopy showed sheets of ductal epithelial cells showing regenerative atypia along with variable number of chronic inflammatory cells. A diagnosis of benign inflammatory lesion of the salivary gland was suggested. The patient was again planned for incision and drainage. About 6 cc of pus was drained out. However, the patient insisted for the removal of the swelling. An informed consent was taken from the patient and a total conservative parotidectomy was done and the specimen was sent for histopathology examination. Grossly, a single grey brown soft tissue piece measuring 5×5 cm was received in the

histopathology unit, which on cut section showed multiple solid areas, largest measuring 2×1 cm and the smallest measuring 0.5×0.5 cm. They had irregular contours and exhibited focal areas of necrosis (Fig. 1). Microscopic sections showed a tumor composed of sheets of cells showing round to oval hyperchromatic nucleus and moderate amount of eosinophilic cytoplasm. In few foci, cytoplasmic clearing and vacuolation could be identified. Mitosis including atypical forms were also identified (Fig. 2). On immunohistochemistry, the tumor was positive for p63 and it was negative for vimentin and Muc-1. Based on these findings, a final diagnosis of a high-grade MEC, right parotid gland was made. The post-operative period of the patient was uneventful. However, the patient was lost to follow-up.

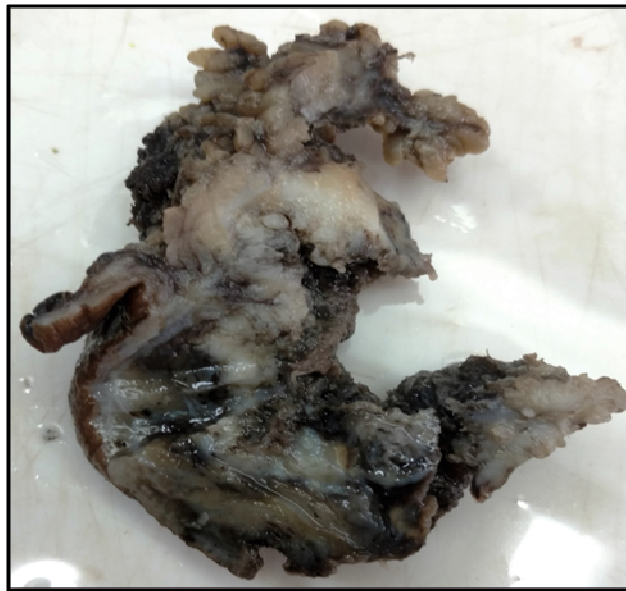


Figure 1. Gross Appearance of the Specimen Exhibiting Solid Areas

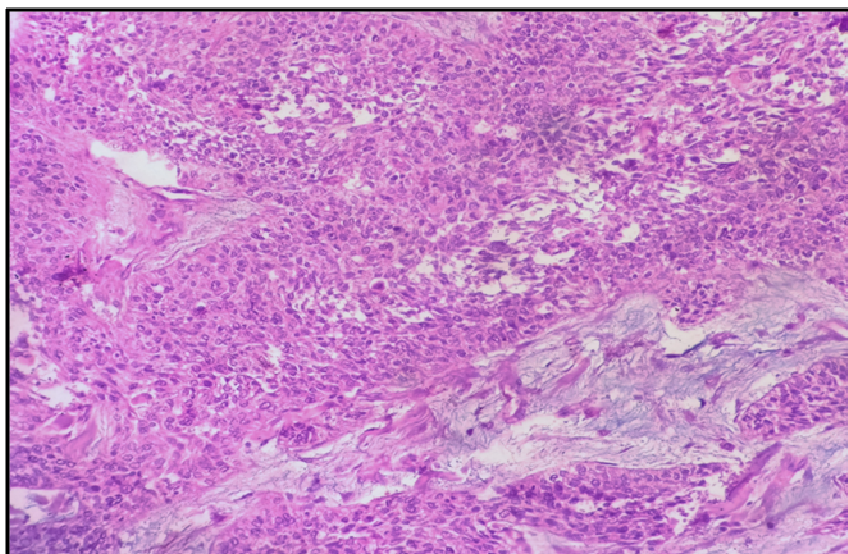


Figure 2. Histopathology of Mucoepidermoid Carcinoma Showing Predominantly Intermediate, Squamous Cells and Few Mucin-Producing Cells (H and E, ×10)

Discussion

MEC is the most common malignant neoplasm arising in the major and minor salivary glands. The low-grade forms present grossly as a relatively well-circumscribed mass with cystic areas containing mucinous material and microscopically, there is predominance of mucinous cells. The high-grade varieties are more solid and have a more infiltrative pattern of growth with predominance of squamoid, intermediate and clear cells over the mucin-producing cells.³

Tumors, whether benign or malignant, arising in the major glands are usually non-tender and painless. Often the edges of the tumor are quite distinct. However, some tumors may present as masses without distinct edges and they tend to involve the surrounding tissues, and affect adjacent nerves with subsequent pain, facial paralysis or loss of tongue function. These features are strongly suggestive of malignancy.⁴

In the major salivary glands, MEC usually presents as a solitary painless mass. Two-thirds of individuals are asymptomatic. Some patients give history of recent rapid increase in size of the growth. The other presentations include pain, dysphagia, trismus, and facial paralysis. In minor salivary glands, 40% of patients are symptomatic. They usually present with pain, numbness of teeth, dysphagia, ulceration, and hemorrhage. In our case, the patient was symptomatic and presented with a tender swelling on the right side of the face. However, the physical examination of the patient was misleading and lead to a misdiagnosis.

The etiology of salivary gland neoplasms is so far unknown. The risk factors include cigarette smoking, genetic predisposition, viral infections, rubber manufacturing, plumbing, some types of wood working, as well as asbestos mining, exposure to nickel compounds, and cellular phone use. The only well-established risk factor is ionizing radiation. Atomic bomb survivors and cancer patients treated by radiation present with a substantially higher risk of developing salivary gland tumors.⁵ However, there were no such risk factors in the present case.

Appropriate therapy for MEC depends primarily upon the stage of disease, tumor grade and location. Low-grade disease can often be treated by surgical excision alone- parotidectomy with facial nerve preservation, submandibular gland excision or wide local excision of an involved minor salivary gland. High-grade disease

often requires more radical excision and may warrant additional intervention such as a neck dissection or postoperative radiation therapy.⁶

The prognosis of MEC depends on the clinical stage and histological grade. Children have good prognosis as majority of them have well differentiated or grade I neoplasm.⁷ Low-grade MEC has a better 5-year survival rate from 92–100% compared to high-grade MEC with 0-43% survival rate. However, the postoperative local recurrence is more likely to occur in patients with positive margins regardless of the grade.⁸

Conclusion

MEC of the parotid gland may present with variety of clinicopathological features. Therefore, the clinicians and the pathologists should always keep the possibility of MEC while dealing with benign-appearing lesions of the salivary glands, especially in adult patients.

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