

Case Report

Mucoepidermoid Carcinoma of submandibular salivary gland-A Case Report

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Abstract: Salivary gland tumors or neoplasm is a growth arising in tissue of salivary gland origin. Mucoepidermoid carcinoma is a malignant epithelial tumor that is composed of various proportions of mucous, epidermoid (e.g., squamous), intermediate, columnar, and clear cells and often demonstrates prominent cystic growth. It is the most common malignant neoplasm observed in the major and minor salivary glands. Most salivary gland tumors arising from major glands present as gradually enlarging growths, nontender and painless. 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. Fine needle aspiration is a very important diagnostic and planning tool. The present report describes a case of high grade mucoepidermoid carcinoma of right submandibular gland in 60year old male.

Keywords: Salivary gland tumor; malignant epithelial tumor; enlarging growths; Fine needle aspiration.

INTRODUCTION

Salivary gland tumors or neoplasm is a growth arising in tissue of salivary gland origin. Salivary gland tumors can arise from any of the various cell types forming the glandular and ductile systems but also some of the supporting structures that are not involved in saliva secretion or transport. These growths can be benign or malignant[1].

Neoplasms of the major salivary glands constitute minor portion of head and neck neoplasms. Less than 2% are malignant. Most neoplasms occur in parotid 75%, 0.8% in sublingual glands. Remainder equally distributed between submandibular gland and minor salivary gland. Incidence of malignant neoplasms increases after 4th and 5th decades and peaks 65—75 years. Benign neoplasms present slightly earlier in age than malignant neoplasm. Malignant neoplasms occur most often in men.

Mucoepidermoid carcinoma is a malignant epithelial tumor that is composed of various proportions of mucous, epidermoid (e.g., squamous), intermediate, columnar, and clear cells and often demonstrates prominent cystic growth. It is the most common malignant neoplasm observed in the major and minor salivary glands[2,3]. Mucoepidermoid carcinoma represents 29% to 34% of malignant tumors originating in both major and minor salivary glands. With regard to malignant tumors of the minor salivary glands, mucoepidermoid carcinoma shows a strong predilection

for the lower lip[4,5]. In an AFIP review of civilian cases, the mean age of patients was 47 years, with an age range of 8 years to 92 years[4]. Prior exposure to ionizing radiation appears to substantially increase the risk of developing malignant neoplasms of the major salivary glands, particularly mucoepidermoid carcinoma[4,6].

Most salivary gland tumors arising from major glands present as gradually enlarging growths. They are often single masses. The involvement of adjacent nerves manifested as facial paralysis or pain are ominous findings and strongly suggest malignancy. Tumors arising from minor salivary glands usually present as painless, gradually enlarging swellings just under the lining of the cheek or hard and soft palate. Tumors, whether benign or malignant, arising in the major glands are usually nontender and painless. Often the edges of the tumor are quite distinct. Those masses that do not have distinct edges, seem to be stuck to surrounding tissues, and affect adjacent nerves with subsequent loss of feeling or facial or tongue function are usually malignant. 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. Fine needle aspiration is a very important diagnostic and planning tool[1].

The present report describes a case of high grade mucoepidermoid carcinoma of right submandibular gland in 60year old male.

CASE REPORT

A 60-year-old male patient was referred to department of Oral Medicine and Radiology with a chief complaint of a swelling in right side of neck since 2 years and no history of pain in swelling. Patient gives no history of fever, difficulty in eating and speaking and facial paralysis. Patient noticed that initially swelling was small in size and gradually increase to present size of 6-4.5 cm. The patient's medical history was unremarkable.

Clinical examination revealed that spherical shape swelling was present and that measured 6-4.5 cm in diameter. Swelling extending from lower border of mandible to 1cm below thyroid cartilage. Swelling has well-defined and regular border, surface was smooth and skin over the swelling was normal in color. It was not tender on palpation and temperature was not raised. consistency of swelling was soft to firm and fluctuation was absent. Swelling was not fixed to overlying skin. Other intraoral findings were generalized attrition and interdental alveolar bone loss present.



Fig-1: Clinical extraoral photograph of swelling in submandibular region on right side.

When swelling is seen at the side of neck, it is important to formulate the differential diagnosis since this would help further evaluation of the condition and management of the patient. After considering all clinical findings following entities were considered in differential diagnosis-pleomorphic adenoma, lymphadenitis, mucoepidermoid carcinoma, Adenoid cystic carcinoma, Lymphadenoma.

After that patient was advised investigatory work up included complete hemogram, intra oral radiographs, orthopantomograph and ultrasonography and fine needle aspiration cytology or biopsy. Routine hematological investigations were within normal limit. Orthopantomograph shows mesioangularly impacted lower left 3rd molar and generalized interdental alveolar bone loss.

Ultrasonographic findings of swelling were irregular, ill-defined in shape, hypoechoic & anechoic

lesion with internal echoes. Ultrasound architecture of lesion was heterogenous with presence of central necrosis and calcification. Posterior echoes were enhanced, ultrasound characteristic of tissues were mixed Ultrasonographic impression was malignant mass with necrotic areas.

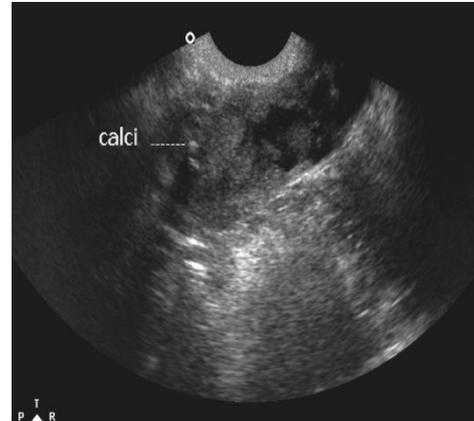


Fig-2- ultrasonographic image shows-mixed echogenic heterogeneous masses showing calcification and necrosis.

When aspiration done, FNAC report shows high-grade MEC is defined by dominance of the solid component. The biopsy report was interpreted as an high grade mucoepidermoid carcinoma as, H&E section revealed Epidermoid cells are more than mucus cells associated with proliferation of solid tumor cell and keratin pearl formation. The high-grade carcinomas are hypercellular, solid tumors with noticeable cellular atypia and frequent mitotic figures. These tumors will often be mistaken for a squamous cell carcinoma and the differentiation between the two can be quite difficult. Positive immunohistochemical staining for mucin indicates a high-grade mucoepidermoid carcinoma rather than a squamous cell carcinoma. Under all aseptic precaution and condition, Mucoepidermoid carcinoma is treated surgically with wide block excision with radical neck dissection.

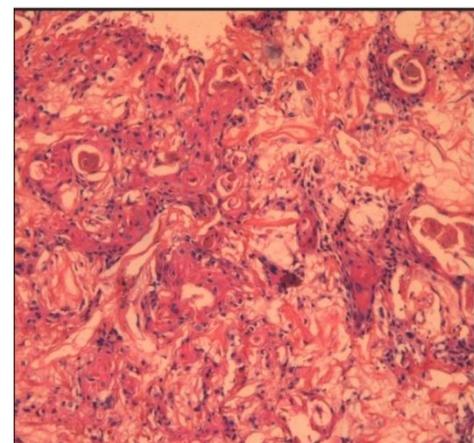


Fig-3-- Photomicrograph (10X) of shows keratin pearl formation, s/o high grade mucoepidermoid carcinoma.

DISCUSSION

Salivary gland tumours account for less than 5% of head and neck neoplasm with mucoepidermoid carcinoma is the most common malignant tumour mostly arises in parotid gland⁷. Mucoepidermoid carcinoma is the most common malignant salivary gland neoplasm in children and adolescence and is rarely found in children under the age of 10 years. Up to 35% of all salivary gland neoplasms in children are malignant, and 60% of these are mucoepidermoid carcinoma^[8]. The histological pattern in mucoepidermoid carcinoma consists of a combination of squamous and mucous cells arranged in cords, sheets, or cystic configuration and are classified as low, intermediate or high grade^[9].

The etiology of SGTs is so far unknown. Putative risk factors include cigarette smoking, genetic predisposition, viral infections, rubber manufacturing, plumbing, some types of woodworking, 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 SGTs^[10].

In the major salivary glands, MEC usually presents as a solitary painless lesion. Similarly to other malignant neoplasms, over 50% of patients have been aware of the tumor for less than 6 months. Two thirds of individuals are asymptomatic. Some patients report rapid growth of the mass; others experience pain, dysphagia, trismus, and facial paralysis. In minor salivary glands, 40% of patients are symptomatic, suffering from pain, numbness of teeth, dysphagia, ulceration, and haemorrhage. In present case report, it was solitary painless lesion not associated with trismus, dysphagia and facial paralysis.

MECs are classified as low-, intermediate- or high-grade tumors depending on the presence or absence of the following criteria: 1) neural invasion, 2) necrosis, 3) anaplasia, 4) ≥ 4 mitoses per 10 high power fields, and 5) less than 20% cystic spaces relative to solid areas. All these histopathological features are indicative of a more aggressive neoplasm. In our case, it was high grade MEC as it shows cellular atypia, frequent mitotic figures, Epidermoid cells are more than mucus cells associated with proliferation of solid tumor cell and keratin pearl formation^[10].

Appropriate therapy for mucoepidermoid carcinoma depends primarily upon the stage of disease, but is also influenced by 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 require more radical excision and may warrant additional intervention such as a neck dissection or postoperative radiation therapy^[11].

CONCLUSION

Most mucoepidermoid carcinomas start in the parotid glands. They develop less often in the submandibular glands or in minor salivary glands inside the mouth. These cancers are usually low grade, but they can also be intermediate or high grade. Low-grade mucoepidermoid tumors have a much better prognosis than high-grade ones.

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