Original Research Paper

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A CASE REPORT OF MUCOEPIDERMOID CARCINOMA: A RARE PRESENTATION AT SUBMANDIBULAR SALIVARY GLAND

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ABSTRACT **Introduction:** Mucoepidermoid Carcinoma (MEC) is the most common malignant salivary gland neoplasm, representing 10 to 15% of all salivary neoplasms.

Case Report:

- A rare case of mucoepidermoid carcinoma of the left submandibular gland in a 36-year-old female patient who presented to ENT OPD with a painless mass in the left submandibular region.
- histopathological examination confirmed the diagnosis of low-grade mucoepidermoid carcinoma of the submandibular gland.
- Not all diagnostic features are found on fine needle aspiration, especially in low-grade lesions.
- The diagnosis may be missed or confused with other benign and malignant lesions.
- Treated by total excision of the left submandibular gland and no recurrence seen within 3 months of follow-up.

KEYWORDS : mucoepidermoid carcinoma, submandibular gland, and salivary gland neoplasm

INTRODUCTION

- Salivary gland neoplasms account for approximately 5% of all head and neck neoplasm(1).
- Mucoepidermoid carcinoma is the most common malignant neoplasm of the salivary gland accounting for 10 to 15% of all salivary neoplasms.
- 50 to 70 % arise in parotid gland, 15–35 % in minor salivary glands and 6–11 % in submandibular glands(2).
- It arises from pluripotent cells of the excretory ducts of the salivary gland.
- Histologically the tumors are composed of three cell types: Epidermoid cells, mucous cells and intermediate cells.
- Histopathologically: -The tumor is classified into three grades low, intermediate, and high. The intermediate grade is least common while the low grade is the most common(3).

CASE REPORT

A 36-year-old female patient presented to ENT OPD at NRI medical college, Chinakakani, Mangalgiri, Andhra Pradesh, a tertiary care referral hospital with chief complaint of painless swelling in the left side of neck extending along body of the mandible for 2 years. The swelling was insidious in onset and slowly progressive in nature.

On physical examination of the neck: a single ovoid swelling of 2× 1.5 cm is seen in the left Submandibular region, surface is smooth, firm in consistency, non-tender, mobile, skin over the swelling normal. There was no palpable lymphadenopathy. There was no history of fever, sore throat or local trauma. Rest of the ENT examination was clinically unremarkable.

Figure-1: swelling seen in the left Submandibular region.

BLOOD INVESTIGATIONS: - Routine Blood Investigations are within normal limits.

RADIOLOGICAL INVESTIGATION: -

ULTRASOUND NECK: A well-defined cystic lesion with echogenic component of size 14 X 14 mm noted in the left submandibular region.

FNAC REPORT: Microscopic Examination reveals abundant eosinophilic amphophilic proteinaceous material with Cyst macrophages and Lymphocytes. Very few clusters of benign epithelial cells seen. Cytological appearance is suggestive of Cystic lesions.

PRE-OPERATIVE CECT NECK: Well-defined isodose lesion with central hypodense lesion of size 10X12X12mm noted in the superficial part of the left submandibular gland. On contrast administration, the lesion shows mild peripheral enhancement with central non enhancing hypodense area.

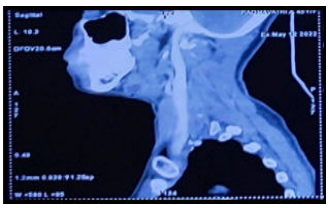

Figure-2: PREOPERATIVE Computed Tomogram of neck sagittal view.

PLANNED FOR COMPLETE LEFT SUBMANDIBULAR GLAND EXCISION: -

The patient was prepared for the surgery under general anesthesia after taking consent for excision of the submandibular gland. Incision is made on the skin in sub mandibular region 5 -8 cm length parallel to body of the mandible. The Incision deepened through deep fascia to expose the capsule of Submandibular gland without raising subplatysmal planes and posteriorly the facial vessel is ligated. lingual and hypoglossal nerves are preserved. Mylohyoid muscle is retracted to remove deep lobe. Haemostasis secured and drain placed in-situ.

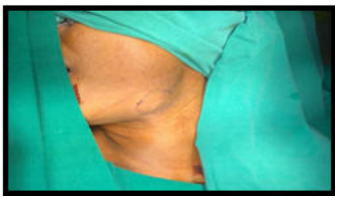

Figure 3: Intraoperative image showing left submandibular region.

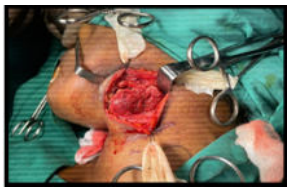

Figure 4: Intraoperative image showing deep lobe of left submandibular gland.

On histopathology examination Brown grey mass of 3X1.5x1.5 cm filled with mucin. The surrounding fibrotic area shows nests of MUCOID cells with abundant eosinophilic cytoplasm. No evidence of perineural invasion. Tumour is seen infiltrating in to the submandibular gland and margins are free. Pathological stage suggestive of low grade mucoepidermoid carcinoma with T1 NX MX.

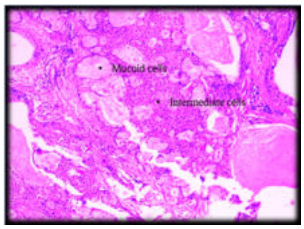

Figure 5: Histopathological examination (low power) showing mucoid cells and intermediate cells.

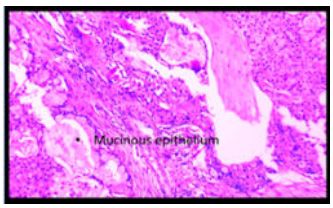

Figure 6: Histopathological examination (high power) showing mucinous epithelium.

The patient came to review after one weeks to the outpatient department for follow up. Wound healing was normal.

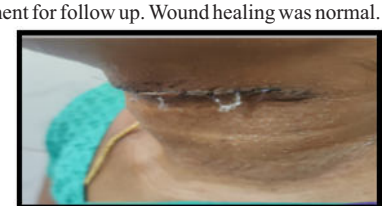

Figure 7: Postoperative wound healing was normal.

Figure 8: postoperative image at 3 months follow up showing no recurrence.

DISCUSSION:

Mucoepidermoid carcinoma is a tumor that usually occurs in the salivary glands. Mucoepidermoid carcinoma is very rarely found in the submandibular gland(4).

Epidemiology: Mucoepidermoid carcinomas are seen throughout all adult age groups but are most common in middle age (35-65 years of age). Overall, mucoepidermoid carcinomas account for:

- 2.8-15.5% of all salivary gland tumors
- 1-10% of all major salivary gland tumors
- 6.5-41% of minor salivary gland tumors.

A slight female predilection has been described, and radiation has been implicated as a risk factor.

Clinical presentation : Mucoepidermoid carcinomas most frequently arise in the parotid gland followed by the hard palate and least common in the submandibular gland , and present as a painless swelling(1) .These tumors can however be found anywhere there are salivary glands. Overall distribution across various glands is as follows:

- Major salivary glands: ~50%
- parotid gland: ~40%
- submandibular gland: ~7%
- sublingual gland: ~3%
- Minor salivary glands: ~50%
- palate: most common
- retromolar trigone
- floor of the mouth
- buccal mucosa and lip and tongue
- other: anywhere in the proximal aerodigestive tract, the lacrimal glands, and even in the bronchi.

Pathology:

The tumors are composed of a mixture of:
1. mucus-secreting cells (muco-)
2. squamous cells (-epidermoid)
3. lymphoid infiltrate.

Microscopic appearance: Histology will often show clear mucin-containing cells, which stain reddish pink with the mucicarmine stain. Mucoepidermoid tumors are graded histologically into(3):

Low grade (the most frequent):
- well-differentiated cells with little cellular atypia
- high proportion of mucous cells
- prominent cyst formation
- Intermediate grade: intermediate features
- High grade
- poorly differentiated with cellular pleomorphism
- high proportion of squamous cells
- solid with few if any cysts.

Treatment and prognosis:

Treatment is dependent on grade and location:
- Low grade (well-circumscribed) can usually be treated with wide local excision, without the need for neck dissection or adjuvant radiotherapy(5).
- High grade (poorly-circumscribed) usually requires complete excision of submandibular gland and adjuvant radiotherapy.

Prognosis is also very dependent on grade, with low-grade tumors having a 90-98% survival and a low local recurrence rate, compared to a 30-54% survival and a very high local recurrence rate for high-grade tumors.

CONCLUSIONS:

Mucoepidermoid carcinoma is a common malignant tumor of the salivary gland but morphological heterogeneity makes diagnosis difficult. Not all diagnostic features are found on the fine needle aspiration, especially in the low-grade lesions(4). Hence, the diagnosis of mucoepidermoid carcinoma may be missed and confused with other benign and malignant lesions. When epidermoid constituent predominates, the histological appearance of the tumor is squamous cell carcinoma, and is considered to be a high-grade(2). Mucoepidermoid carcinoma tumor is considered to be low grade when mucin-secreting cells are predominant with the cystic background. Mucoepidermoid carcinoma is very rarely found in the submandibular gland. This case report exemplifies the FNAC findings and adds to the existing literature(5).

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