CENTRAL MUCOEPIDERMOID CARCINOMA- A RADIOGRAPHIC PUZZLE

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Abstract
Mucoepidermoid carcinoma (MEC) generally arises from salivary glands (mostly from parotid glands) and also rarely arises in jaws. Intraoral MEC mostly arises from minor salivary glands commonly on palate and contribute 3-15% of all salivary gland tumors. Central variant of MEC is a rare finding. Treatment protocol of MEC depends on its histological grading, tumor stage and location due to its biological diversity. Here we presenting a case of MEC of 27 years old male patient and his chief complaint were swelling in the left side of face.
Key Words: Mucoepidermoid carcinoma (MEC), Central Mucoepidermoid Carcinoma(CMEC), Lateral Ceph, Orthopantamograph (OPG), fine needle aspiration cytology (FNAC).

INTRODUCTION:

In 1895, Volkmann first time describe about this tumor; later, in 1945 it was elaborated by Stewart et al as mucoepidermoid tumor. In 1953, Foot et al named this tumor as mucoepidermoid carcinoma. [1]

MEC is the most frequently diagnosed malignancy in major and minor salivary glands and its accounts for 30% of all salivary malignancies. Parotid gland is the most common site for the MEC among the major salivary glands and accounts for 44.1% and 25% of MEC originates from minor salivary glands. [2] The mean age of occurrence of MEC is 45 years. MEC shows a wide range of biological behaviour and shows low, intermediate and high grade neoplasm accounts for 61.7%, 26.5% and 11.8% of tumors respectively. [2]

World Health Organisation (WHO) in 2005 and 2017 recognized MEC as a malignant glandular epithelial neoplasm characterized by mucous, intermediate and epidermoid cell, with columnar, clear cell and oncocytoid features based on its different clinical and histopathological features.[3]

Various grading system has been proposed till date for MEC. Auclair et al (1992) proposed Armed Forces Institute of Pathology (AFIP) grading system which was approved by WHO. [3] This grading system is reproducible and it can predict the patient's outcome by defining low grade, intermediate grade and high grade tumors [3]

Treatment modalities of MEC varies according to tumor grade, sometime only surgical resection is done and for some cases surgical resection with postoperative radiotherapy is helpful. [2] As low grade parotid tumor can be treated by conservative parotidectomy. For high grade tumor radical parotidectomy should be done followed by radiotherapy. [3]

CASE-REPORT:

A 27 year old patient reported to the department of Oral Medicine and Radiology with the chief complaint of swelling on the left side of face since 5 months. Patient gave a history of slowly progressive swelling from peanut size till the present size. The swelling was associated with a continuous dull pain. No history of numbness, ulceration, bleeding or pus discharge was recorded.

Extra oral examination revealed, facial asymmetry due to solitary swelling on left side of facial region, roughly oval in shape measuring approx 6 x 5 cm in diameter, extending from outer canthus of eye to inferior border of mandible(superior-inferiorly) and from corner of mouth to angle of mandible (antero-posterior), which was non-tender, non-compressible and firm in consistency. Left submandibular lymph node was enlarged measuring approximately 1.5 x 2cm, firm in consistency, non-tender on palpation & mobile.

Intraoral examination, revealed fair oral hygiene with no sign of trismus. Diffuse swelling was recorded on left buccal mucosa measuring approx 3 x 2 cm in diameter extending from 36 region to left retro molar area [Fig 1].

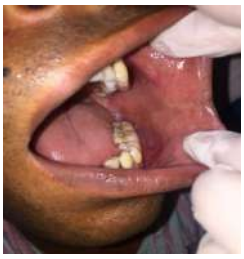

Fig 1: Diffuse swelling on left buccal mucosa measuring approx 3 x 2 cm in diameter extending from 36 region to left retro molar area

On palpation swelling was non tender, bony hard in consistency with mild buccal and lingual expansion. On the basis of history

and clinical examination provisional diagnosis of Odontogenic cyst irt 36,37 regions was given.

Odontogenic keratocyst, ameloblastoma, Calcifying epithelial odontogenic cyst and Giant cell granuloma were kept in differential diagnosis.

Patient was then subjected to fine needle aspiration cytology (FNAC) as a part of chair-side investigation. However, the swelling didn't yield aspirate. The associated teeth 35 and 36 were tested for vitality and showed a positive response.

The haematological report shows slightly raised erythrocyte sedimentation rate (ESR).

On radiographic investigation, OPG revealed a solitary radiolucent lesion in association with 36 and 37 [Fig 2].

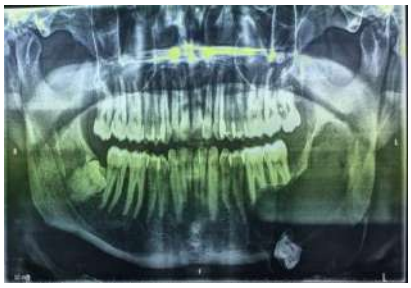

Fig 2: OPG revealed a solitary radiolucent lesion in association with 36 and 37.

The cortical border was expanded but thinned out and the lesion has caused knife edge root resorption of 36 and 37. 38 has been displaced and could be trace at the inferior border of the radiolucent lesion. On other extra-oral radiographs, extent of the growth, expansion of the cortex was confirmed. Radiographic diagnosis of odontogenic tumor of the jaw most probably, ameloblastoma was given.

However, the histopathological examination mentioned the presence of islands of proliferating clusters of epithelial cells interspersed with clear mucous cells. Intermediate cells were also seen throughout the section, based on which a final diagnosis of Mucoepidermoid carcinoma of intermediate grade was made.

DISCUSSION:

In 1963 Bhaskar was the first to describe two cases of central Mucoepidermoid carcinoma definitively. Mucoepidermoid carcinoma is a rare type of salivary gland tumor composed of varying number of epidermoid and mucous-secreting cells. Only 2-3% could be traced as the central variant.[4]

The diagnosis depends on the criteria of clinical presentation, the radiographic evidence, and the histopathological evaluation which must exclude odontogenic as well as metastatic tumors.[5].In the present case, patient presented with all the required diagnostic criteria. Common clinical presentation including painless swelling causing facial asymmetry, which coincided with our case. According to some reports, long standing cases also present with numbness over the regions supplied by inferior alveolar nerve.[4,5]

Radiographically, the MEC has more predilection for the mandible and is often associated with premolars and molars. The literature describes the appearance as multilocular in most of the reports. However, solitary radiolucencies have also been mentioned by some authors. [4] It causes expansion of cortex but the margins remain intact and poorly defined. [6].

Association of the CMEC with impacted third molars has also been reported in literature, as evident in the OPG taken for the present case. Radio-opaque crown of impacted 38 could be traced near the inferior border of the mandible along with the involvement of inferior alveolar nerve. Other features also mimic the classic picture of central muco-epidermoid carcinoma.

However, the knife edge root resorption, as in the presented case is commonly associated with odontogenic tumors like ameloblastoma. Therefore, a radiographic diagnosis of odontogenic tumor most probably an ameloblastoma was made.

Thus, a histopathology investigation becomes necessary to conclude a final diagnosis. Histologically, presence of mucous, squamous, and intermediate cells(with epidermoid metaplasia) could be appreciated forming the cystic or papillary pattern. [7,8]. The histologic grading depends on the size of these patterns and in our case, the report stated the presence of small to medium sized cystic patterns of the MEC cells, making the final diagnosis as Muco-epidermoid carcinoma of intermediate type.

The prognosis of MEC depends upon the histological grading. The prognosis for low grade tumors is fairly good with a survival rate of 92-100%. [9].

Patient in our case was referred to the department of oral and maxillofacial surgery for the needful treatment.

CONCLUSION:

Mucoepidermoid Carcinoma involving jaws is a very rare finding and can be easily misdiagnosed owing to its radiographic resemblance to odontogenic tumors. Moreover, in maximum cases patients report late due to isolated painless swellings, leading to delay in the diagnosis. Therefore, a thorough review of literature and histopathological investigation becomes necessary to rule out odontogenic tumors associated with the posterior jaws, to conclude a final diagnosis of Muco-epidermoid Carcinoma.

REFERENCES:

1. Donempudi P, Bhayya H, Venkateswarlu M, AvinashTejasvi ML, Paramkusam G. Mucoepidermoid carcinoma of the minor salivary gland: Presenting as ranula. J Can Res Ther2018;14:1418-21.
2. Suvarna R, Sorake S, Vachhani D, Boricha V, Rao PK, Kini R, et al. Mucoepidermoid carcinoma at an uncommon location. J Indian Acad Oral Med Radiol2018;30:161-4.
3. Auclair PL, Goode RK, Ellis GL. Mucoepidermoid carcinoma of intraoral salivary glands. Evaluation and application of grading criteria in 143 cases. Cancer.

1992 Apr 15;69(8):2021-30. doi: 10.1002/1097-0142(19920415)69:8<2021::aid-cncr2820690803>3.0.co;2-7. PMID: 1544111.
4. DIAGNOSTIC IMAGING of the jaws, Robert P. Langlais.
5. Central mucoepidermoid carcinoma radiographically mimicking an odontogenic tumor: A case report and literature review, Leorik Pereira da Silva et al, J Oral MaxillofacPathol. 2016 Sep-Dec; 20(3)
6. Central Mucoepidermoid Carcinoma: Case Report with review of literature, Harmurti Singh et al, Natl J Maxillofac Surg. 2019 Jan-Jun; 10(1): 109–113.
7. Maloth A, Nandan SR, Kulkarni PG, Dorankula SP, Muddana K. Mucoepidermoid carcinoma of floor of the mouth – arарity.J Clin Diagn Res 2015;9:ZD03-4
8. Salazar C, Marcos J, De Saa MR, Sánchez-Jara JL, García M, González MA. Carcinoma mucoepidermóide de vestíbulo nasal. Acta OtorrinolaringEsp2000;51:729-32.
9. Rapidis AD, Givalos N, Gakiopoulou H, Stavrianos SD, Faratzis G, Lagogiannis GA, et al. Mucoepidermoid carcinoma of the salivary glands. Review of the literature and clinicopathological analysis of 18 patients. Oral Oncol 2007;43:130-6.
10. Kochaji N, Goossens A, Bottenberg P. Central mucoepidermoid carcinoma: Case report, literature review for missing and available guideline proposal for coming case reports. Oral Oncol Extra. 2004;40:95–105.

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