



Oncocytic variant of mucoepidermoid carcinoma of palate with extensive clear cell change: A rare case at unusual site

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ABSTRACT

The Oncocytic variant of Mucoepidermoid carcinoma (MEC) is rarely reported in world literature. Only fourteen well documented cases of oncocytic MEC have been reported previously, all of which occurred in the parotid gland. Association of both oncocytic and clear cell variant has not been reported till date. We report a case of a 60 year old female who presented with non-healing ulcerative growth on palate. Preoperative FNAC showed oncocytic cells in sheets over haemorrhagic background. So a diagnosis of oncocytoma of salivary gland was given. Histologically, sheets and nests of oncocytic cells along with features of MEC were seen. The tumor also revealed clear cell morphology in >10% of tumor tissue but it was not a dominant feature. So, a final diagnosis of oncocytic variant of MEC (low grade) of palate with extensive clear cell component was given. Though for MEC most frequent intra-oral sites are the palate and buccal mucosa, but oncocytic variant of MEC is not reported in palate till now. Also most salivary gland lesions with oncocytic change are benign, it is important to distinguish Oncocytic MEC from other entities that may show prominent oncocytic change.

INTRODUCTION

Mucoepidermoid carcinoma (MEC) is the most common primary salivary gland malignancy in both adults and children[1] The oncocytic variant of MEC is rarely reported in world literature. Only fourteen well documented cases of oncocytic MEC have been reported previously, all of them occurred in the parotid gland[2]. Even though most frequent intra-oral sites for MEC are the palate and buccal mucosa, oncocytic variant of MEC has not been reported in palate till now. Besides the salivary glands it has been reported in the conjunctiva, lacrimal gland and lacrimal sac. Also it has been described in the nasal cavity, paranasal sinuses, nasopharynx, breast, bronchus, thymus and skin[3]. Cytologically it is a challenge for pathologists, as oncocytic change is not typically a prominent feature of MEC of the salivary gland[4]. We report this case due to its rarity in site and incidence as well as to distinguish from many other benign lesions containing oncocytic cells. In addition to typical features of MEC, it is unusual to find both oncocytic and clear cell component of MEC as in our case.

CASE REPORT

A 60 year old female was admitted to S.C.B. Medical College, Cuttack due to non-healing ulcerative growth on palate since one year. Ultrasonography showed a hyperechoic and non-homogenous but relatively circumscribed mass in palate with differential diagnosis of pleomorphic adenoma or adenoid cystic carcinoma.

Preoperative fine needle aspiration cytology (FNAC) and scraping was performed. Scrape smears showed plenty of polymorphs and benign mature squamous cells. FNAC showed oncocytic cells in sheets on haemorrhagic background (Figure 1). With this a diagnosis of salivary gland neoplasm possibly oncocytoma was given. Patient was operated and the gross received in formalin was wedge shaped tissue measuring 4X3X3cm with a growth measuring 3X2X2cm. It was grayish black in colour and cross section was solid and partly cystic. The histological features showed stratified squamous epithelium with underlying normal salivary gland structure and tumor tissue comprising of large clear mucus cell, small darker intermediate cells and malignant squamous cells. Many cystically dilated spaces lined by clear cells (Figure 2). Sheets and nests of

oncocyctic cells constituting more than 60% of tumor tissue (Figure 3a). There is also extensive clear cell change showing presence of large round to polygonal cells with abundant clear cytoplasm and centrally placed small nuclei accounting >10% of tumor tissue (Figure 3b). Perineural invasion was absent. Cystic component was less than 20%, there is one mitosis/10 hpf and necrosis was absent. Ki-67 labelling index was 6%. So a diagnosis of oncocytic variant of MEC (low grade) with extensive clear cell change was given.

DISCUSSION

Mucopidermoid carcinoma is the most common malignant salivary gland tumor and accounts for 5-10% of all salivary gland neoplasms¹. It is characterized by mucous, intermediate and squamous cells with columnar, clear cell and oncocytoid features. MEC is commonly seen in adults with peak incidence from 20-40 years of age. Approximately half of the tumors (53%) occur in major glands with predominance in parotid glands (45%), 7% in submandibular and 1% in sub lingual glands. The most frequent intra-oral sites are the palate and buccal mucosa [1].

Parameters	Score
Intracystic component <20 %	+2
Neural invasion	+2
Necrosis	+3
Mitosis >4/10 high-power field	+3
Anaplasia (nuclear pleomorphism, increase N/C ratio, large nucleoli, Anisochromia, hyperchromasia)	+4

Total score	Interpretation
0-4	Low grade
5-6	Intermediate-grade
7-14	High grade

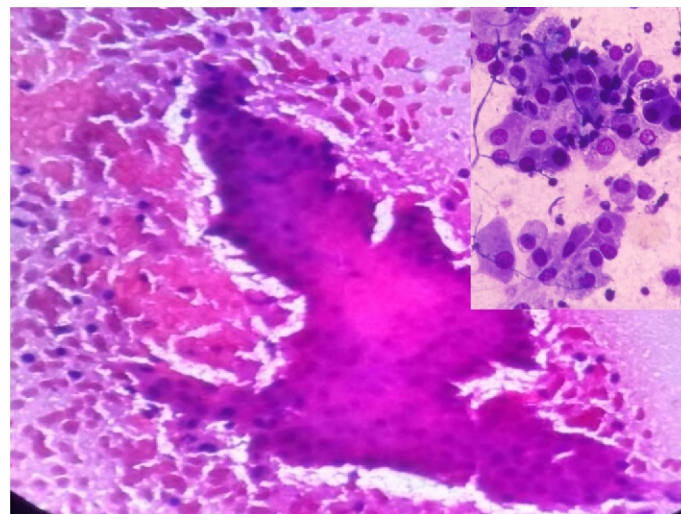


Fig 1 : Cytology of oncocytic cells in sheets and singles : Diff Quikx100. In set: High power view.

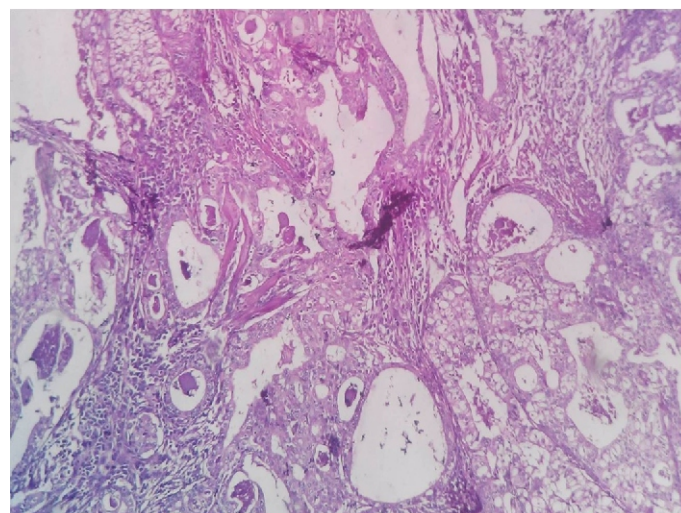


Fig 2 : Epidermoid, mucous & intermediate cells of mucopidermoid carcinoma: H & Ex100

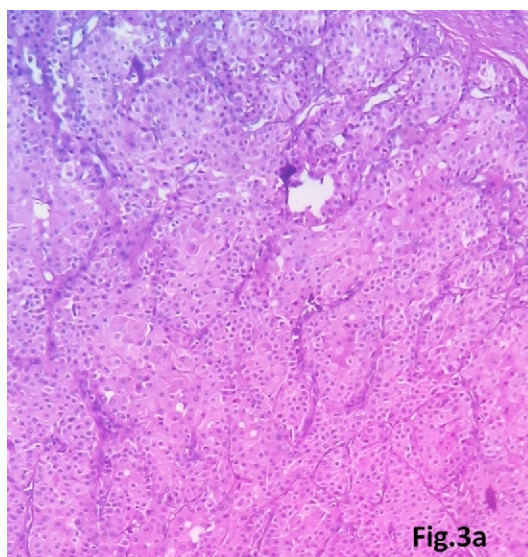


Fig.3a

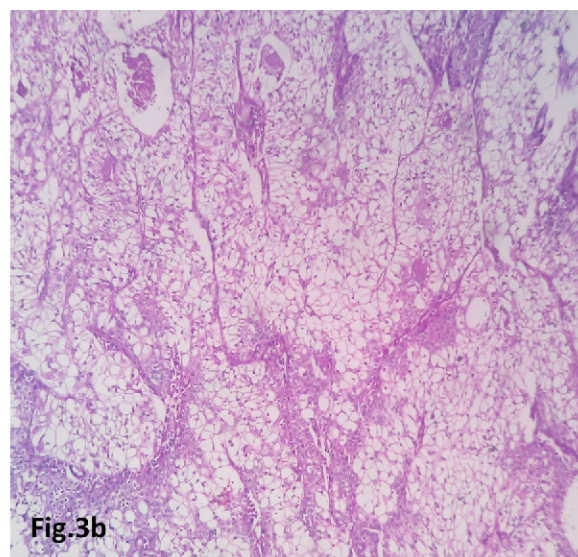


Fig.3b

Fig 3. : a - Histosection showing sheets of oncocytic cells : H & Ex400, **b** - Extensive clear cell change: H & Ex400.

Rarely MEC is composed predominantly of oncocytic cells accounting for more than 60% of cell population, indicating a diagnosis of oncocytic variant of MEC (OMEC). The presence of OMEC can cause diagnostic challenges because extensive oncocytic change can be present in many salivary gland lesions specially of benign nature. Histologically the oncocytic neoplasms classified according to the new World Health Organisation classification in three distinct types, namely oncocytosis, oncocytoma and oncocytic carcinoma⁵. Oncocytic cells are also present in myoepithelioma, Warthin tumor and some pleomorphic adenomas. The clinical course and therapeutic management of all these lesions are different. So accurate diagnosis by FNAC and punch biopsy is challenging for pathologists. In above said case due to extensive areas of oncocytic cells, the needle might have hit that area only, so we missed the mucous, intermediate and epidermoid cells and a diagnosis of oncocytoma was given in FNAC.

Other variants of MEC are clear cell variant, spindle cell variant and sclerosing variant. In clear cell variant, large polygonal cells with discrete cell membrane, abundant clear cytoplasm and eccentric nuclei are a minor component of most MEC. The clear cell variant appears to be more common in the palate[6]. The abundance of clear cells in this tumor made it a diagnostic challenge. Clear cells in MEC of salivary glands are not uncommon and may constitute upto 10% of cell population, however predominance of clear cell is unusual[7]. In our case also there is clear cell change (>10%, but <50%) along with oncocytic change seen in palate. Immunohistochemically the tumor cells are positive for cytokeratin and variable staining for EMA, CEA and S-100. According to cytogenetic study, several MECs have been reported to possess t(11:19)(q21;p13) translocation as the only abnormality[1]. The gene fusion can be detected by in-situ hybridization or RT-PCR in up to 70% cases[6]. The behavior of MEC is strongly correlated with the clinical stage and histologic grade.

Several systems have been proposed to grade this neoplasm, but none has been universally accepted. Recently, a new grading system using five histological features has been shown to be reproducible and of prognostic significance. Mucoepidermoid carcinoma: Armed Forces Institute of Pathology grading system (Only applicable to intraoral and parotid tumors)[6]

Additionally a MIB-1 index >10% correlates with high histopathologic grade, increased recurrence, metastasis and decreased patient survival[1]. Variants of MEC such as oncocytic or sclerosing variants may not be amenable to conventional grading schemes. Limited evidence to date suggests that even oncocytic MEC that are considered high grade by a conventional grading scheme may behave indolently, with only one recurrence noted[8]. So it is important to mention the variant of MEC histologically.

CONCLUSION

Accurate diagnosis of all oncocytic lesion is critical for correct treatment. A complete surgical incision and long term clinical follow up are adequate management for all cases of MEC.

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