**Scholars Academic Journal of Biosciences (SAJB)** **ISSN 2321-6883 (Online)**
**Sch. Acad. J. Biosci., 2014; 2(9): 647-650** **ISSN 2347-9515 (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com **DOI:** 10.36347/sajb.2014.v02i09.018

## Case Report

# Intra-Oral Mucoepidermoid Carcinoma in a Young Male

**Dr. Kandukuri Mahesh Kumar[1], Dr. Ch. Krishna Reddy[2], Dr. Swetha. K[3] , Dr. Ganesh Kulkarni[4]**
[1,2,3]Assistant Professor, Malla Reddy Institute Of Medical Sciences (MRIMS), Hyderabad, India
[4]Assistant Professor, Malla Reddy Institute Of Dental Sciences (MRIDS), Hyderabad, India

***Corresponding author**
Dr. Kandukuri Mahesh Kumar
**Email:** doctormaheshgoud@gmail.com

**Abstract:** Mucoepidermoid carcinoma (MEC) is one of the most common salivary gland malignancies. As its name implies, MEC is composed of a mixture of cells, including mucus producing, epidermoid or squamous and intermediate cells. It's the most common malignant tumor in the parotid (60-70% cases). MEC appears mostly as asymptomatic swellings in minor salivary glands, which being the second most common site of occurrence after the parotid gland, it can be located on palate, in retromolar area, floor of mouth, buccal mucosa, lips, and tongue . Some of the case reports have been reported in the rare sites such as nasal cavity, paranasal sinuses, nasopharynx, oropharynx, larynx, vocal cords, trachea, lungs and lacrimal glands. Wide surgical resection should be carried out, followed of post-operative radiotherapy, chemotherapy for the intermediate and high grades, and for low grade tumors surgical resection is the treatment of choice. Cervical clearing should be performed in cases with regional metastases, advanced clinical staging or high histological grade. Postoperative tumor recurrences are marginally more common in high-grade than in low-grade mucoepidermoid carcinomas. We present a case of Mucoepidermoid carcinoma in a young male who presented with a solid to cystic mass in the intra-oral region/hard palate which is an unusual site. CT scan revealed Intra-oral pleomorphic adenoma, repeated fine needle aspiration cytology showed only thin to thick straw colored muco proteinaceous fluid which created confusion between chondromyxoid material of pleomorphic adenoma and mucinous component mucoepidermoid carcinoma. The diagnosis of mucoepidermoid carcinoma was later made on histopathological examination (HPE).
**Keywords:** Mucoepidermoid carcinoma, Intra-oral, Mucous, Minor salivary glands, Palate, Malignant

## INTRODUCTION

Mucoepidermoid carcinoma (MEC) is the most common malignant tumor in the parotid (60-70% cases) [1, 2]. Malignant tumor located in the nasal cavity and paranasal sinuses are extremely rare and correspond to about 3% of the head and neck neoplasms. MEC is reported to manifest variable biologic aggressiveness, basically showing correlation with its histological features. As its name implies, MEC is composed of a mixture of cells, including mucus producing, epidermoid or squamous, and intermediate types [3]. When MEC appears as asymptomatic swellings in minor salivary glands, being the second most common site of occurrence after the parotid gland, it can be located on palate, in retromolar area, floor of the mouth, buccal mucosa, lips, and tongue [4–7]. In 1945, Stewart *et al* [8] recognized MEC of the salivary gland as a separate entity among salivary neoplasms. MEC is thought to arise from pleuripotent reserve cells of the excretory ducts of salivary gland that have the potential to differentiate into squamous, columnar, mucous cells, clear cells, and epidermoid cells. Although, no specific etiologic factors had been identified so far. The tumor usually forms as a painless, fixed, slowly growing swelling of widely varying duration that sometimes goes through a phase of accelerated growth immediately before clinical presentation. Symptoms include tenderness, otorrhoea, dysphagia, and trismus. Intraoral tumors are often bluish-red and fluctuant, and they may resemble mucoceles or vascular lesions. They occasionally invades the underlying bone. Pain is associated with high grade malignant tumors. MECs arising from the parotid gland can lead to the development of facial palsies. The gross appearance varies with the grade of the tumor. MECs may be circumscribed and variably capsulated or infiltrative and fixed; the latter characteristics generally apply to higher-grade tumors. Most tumors are smaller than 4 cm in diameter. Cysts of variable sizes are often present, and they usually contain brownish fluid.

## CASE REPORT

A 21 year-old Male patient came to the outpatient department with the complaints of swelling since 8 months which gradually increasing in size , on and off pain since 3 months , difficulty in food intake

and chewing. On examination, a swelling of size 3.5 cm diameter was noted intra-orally corresponding to the right 2nd and 3rd molar teeth. Mucosa over the swelling is normal without any ulceration or discoloration **(Figure 1)**. Patient advised to undergo routine laboratory investigations, imaging and fine needle aspiration cytology (FNAC). All routine laboratory investigations were normal; CT scan gave a impression of pleomorphic adenoma. FNAC revealed two possibilities – 1) Pleomorphic adenoma 2) Mucoepidermoid carcinoma.

Patient posted for surgery and the excision of the swelling done and sent for Histopathological examination (HPE).

Grossly, we received a soft tissue mass measuring of 3.5 cm diameter which is well circumscribed. Cut section shows solid and very few tiny cystic areas. Representative areas were sectioned and processed for microscopic examination.

Microscopy, tumor tissue arranged in sheets with three types of cells and with few cystic areas with mucoid material and cyst macrophages **(Figure 2).** Intermediate cells are round to oval with scant amphophilic to basophilic cytoplasm, Epidermoid or squamous cells are large polygonal with abundant eosinophilic cytoplasm **(Figure 3 & 4),** Mucocytes are large cells with vacuolated cytoplasm and eccentrically placed nucleus **(Figure 5).** Mitotic figures are 1-2 per high power field. At places there are cystic areas with mucoid material **(Figure 6).**

**Impression** – Muco-epidermoid carcinoma.

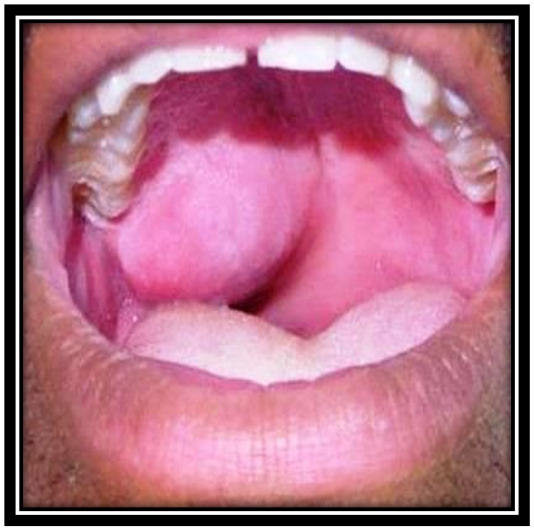

**Fig-1: Clinical picture showing intra-oral swelling.**

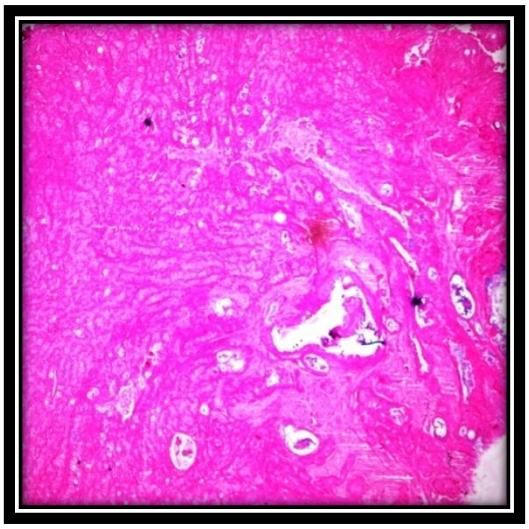

**Fig-2: Low power view of the tumor tissue with three types of cells.**

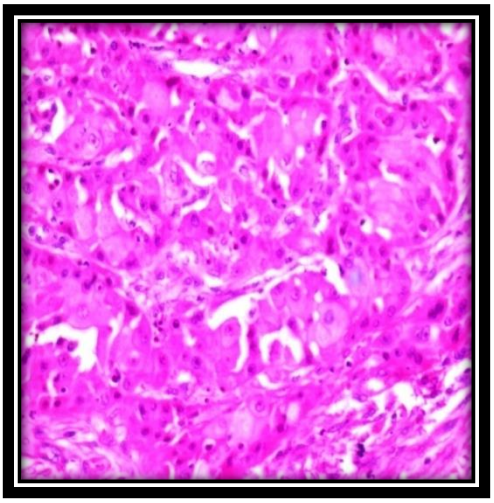

**Fig-3: Microphotograph showing intermediate cells**

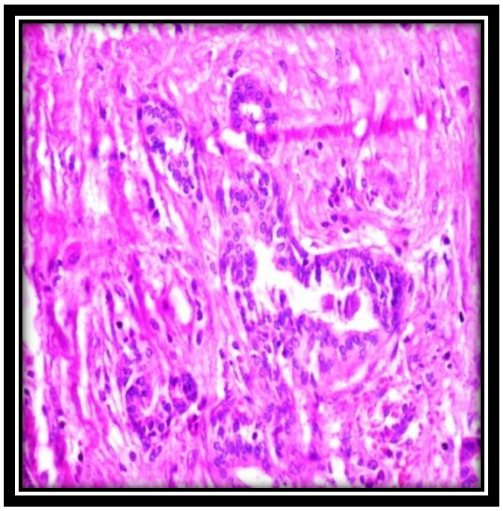

**Fig-4: Microphotograph showing Epidermoid cells**

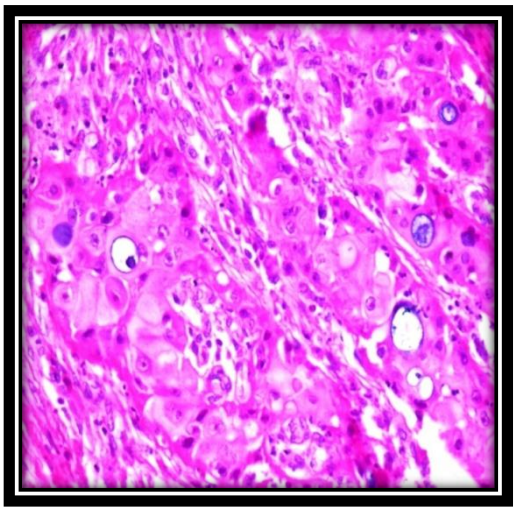

**Fig-5: Microphotograph showing Mucocytes.**

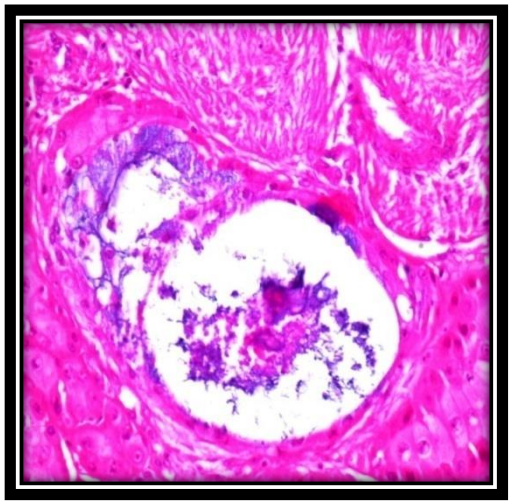

**Fig-6: Microphotograph showing Cystic space with mucoid material.**

## DISCUSSION

Salivary gland tumors account for 5% of head and neck neoplasm with pleomorphic adenoma as the most common neoplasm and Mucoepidermoid carcinoma being the most common malignant tumor. Tumors of the minor salivary glands account for 10–15% of all salivary gland neoplasms. The most common complaint is a painless swelling in the mouth (60%), with symptoms having been present for more than 12 months. The most common sites for tumors of minor salivary gland origin are the palate, buccal mucosa, and upper lip, which accounts for more than 75% of cases. The palate is the most common site for all tumors of minor salivary gland origin (55%) and more than 60% of these are malignant. MEC was first described by Volkmann in 1895, which was further elaborated upon by Stewart in 1945 as mucoepidermoid tumor. The credit of naming the tumor as MEC goes to Foot and Frazell (1953). The MEC can be associated with major salivary glands, minor salivary glands, and can also occur as an intra-osseous tumor frequently called as central MEC [9] .The common age group for the occurrence of MEC in males and females is around 43 years. The overall female predilection has been seen many number of times. The gender difference is extremely pronounced in patients with lesions of the tongue and retromolar area. The females outnumber the males by 76- 80%. The 46% of MEC's occurring intra-orally in the minor salivary glands arise in a variety of location including ectopic salivary gland tissue. Most of the cases are frequently seen to be associated with palate, cheek, mandible, lip, and tongue. Lesser number of MECs is associated with retromolar area, oropharynx, and ectopic salivary gland. The MEC in minor salivary glands are generally slowly developing lesions which are asymptomatic with a history lasting from 1½ to 10 years. Many lesions present as small solid masses, or as a soft tissue lesion with granular or papillary surfaces and ulcerated lesions. Some of the MEC present as bluish or red-purple, fluctuant, smooth surfaced mass, which appear very similar to mucocele. . MEC is thought to arise from pleuripotent reserve cells of the excretory ducts of salivary gland that have the potential to differentiate into squamous, columnar, mucous cells, clear cells, and epidermoid cells. MEC is reported to manifest variable biologic aggressiveness, basically showing correlation with its histological features. Histologically, the mucoepidermoid carcinoma is characterized by the presence of mucous, squamous and intermediate cells (with epidermoid metaplasia) [10, 11]. The pattern is cystic or cystic papillary [10]. They may be classified into low, intermediate or high malignancy grade based on five parameters: proportion of cystic and solid elements, neural invasion presence, necrosis, anaplasia and mitotic rate [1 & 11]. In spite of having been histologically classified it may clinically present with an indolent behavior. In our case, site was relatively uncommon; occurring in a young patient and histologically it is of low grade malignancy.

## CONCLUSION

The treatment is based on the tumor malignancy grade, tumor extension and the patient's general conditions. Wide surgical resection should be carried out, followed of post-operative radiotherapy for the intermediate and high grades, and only low grade tumors should be surgically operated. Cervical emptying should be performed in cases with regional metastases, advanced clinical staying or high histological grade. Chemotherapy has been suggested for high grade carcinomas for they have sensitivity similar to squamous cells carcinomas. In our case, surgical resection was sufficient with excellent prognosis.

## REFERENCES

1. Pires FR, Alves FA, Almeida OP, Kowalski LP; Carcinoma mucoepidermóide de cabeça e pescoço: estudo clínicopatológico de 173 casos. Rev Bras Otorrinolaringol. 2002; 68(5):679-684.
2. Devita VT, Hellman S, Rosenberg SA; Cancer of the Head and Neck. In: Cancer - Principles &

Practice of Oncology, 5th ed. Philadelphia: Lippincott-Raven Publishers; 1997; 833.
3. Neville BW; Salivary gland pathology. Oral and Maxillofacial Pathology,W. B. Neville, D. D. Damm, C. M. Allen, and J. E. Bouquot, Eds., pp. 420–422, Saunders, Edinburgh, Scotland, 2002.
4. Brookstone MS, Huvos AG; Central salivary gland tumors of the maxilla and mandible: a clinicopathologic study of 11 cases with an analysis of the literature. Journal of Oral and Maxillofacial Surgery, 1992; 50(3):229–236.
5. Wedell B, Burian P, Dahlenfors R, Stenman G, Mark J; Cytogenetical observations in a mucoepidermoid carcinoma arising from heterotopic intranodal salivary gland tissue. Oncology Reports, 1997; 4(3): 515–516.
6. Noda S, Sundaresan S, Mendeloff EN; Tracheal mucoepidermoid carcinoma in a 7-year-old child. Annals of Thoracic Surgery, 1998; 66(3):928–929.
7. Brandwein MS, Ivanov K, Wallace DI, Hille JJ, Wang B, Fahmy A,, et al.; Mucoepidermoid carcinoma: a clinicopathologic study of 80 patients with special reference to histological grading. American Journal of Surgical Pathology, 2001; 25(7):835–845.
8. Baker SR, Malone B; Salivary Gland malignancy in children. Cancer, 1985;55:1730-1736.
9. Jansisyanamont P, Blanchaert RH, Ord RA; Intraoral minor salivary gland neoplasms: A single institution experience of 80 cases. Int J Oral Maxillofac Surg ,2002;31:257-2561.
10. Salazar CM, Saa J, Sánchez-Jara MR, García JL, González M; Carcinoma mucoepidermóide de vestíbulo nasal. Acta Otorrinolaring Esp, 2000; 51(7):729-732.
11. Thomas GR, Regalado JJ, McClinton M; A rare case of mucoepidermóide carcinoma of the nasal cavity. Ear Nose Throat J, 2002; 81(8):519-522.