ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 3, Issue – 2, March - 2020, Page No. : 86 - 90

Low Grade Mucoepidermoid Carcinoma of the Hard Palate: A Rare Entity

[1]Dr. Jaya Singh, Senior Resident, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

[2]Dr. Shruti Singh, Senior Resident, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

[3]Priyanka Singh, Associate Professor, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

[4]Shaleen Chandra, Professor and Head, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

[5]Dr. Nikhil Gupta Junior Resident, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

[6]Dr. Manjit Kour, Junior Resident, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

[7]Dr. Tanveer Fatima, Junior Resident, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

Corresponding Author: Dr. Jaya Singh, Senior Resident, Department of Oral Pathology And Microbiology, King George's Medical University, Lucknow, India.

Citation of this Article: Dr. Jaya Singh, Dr. Shruti Singh, Dr. Priyanka Singh, Shaleen Chandra, Dr. Nikhil Gupta, Dr. Manjit Kour, Dr. Tanveer Fatima, "Low Grade Mucoepidermoid Carcinoma of the Hard Palate: A Rare Entity ", IJDSIR- March - 2020, Vol. – 3, Issue -2, P. No. 86 – 90.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

In india head and neck cancers account for around 30% of cancers including salivary gland tumors. Mucoepidermoid carcinoma (MEC) accounts for less than 10% of all the salivary gland tumors making it a rare lesion. Besides the major salivary glands, they also affect the minor salivary glands including the hard palate due to the presence of numerous salivary gland acini. They are usually asymptomatic. We report a long-standing case of low grade MEC of the posterior hard palate. The lesion was treated by wide surgical excision with a regular follow-up and no recurrence was noted.

Keywords: Mucoepidermoid Carcinoma, Salivary Gland, Epidermoid, Intermediate Cells, Sclerosing, Intraosseous

Introduction

Mucoepidermoid carcinoma (MEC) is a malignant salivary gland tumor occurring most commonly in younger age group. It is one of the most common salivary gland malignancies.[1] because of its highly variable biologic potential, it was originally called mucoepidermoid tumor and later termed as mucoepidermoid carcinoma by who in 1990.[2] MEC has a wide variability, the low-grade type clinically present as a benign tumor whereas the high-grade type is a highly aggressive tumor.

MEC is believed to arise from the reserve cells of excretory ducts, and the tumor consists of three cell types: epidermoid cells, mucous cells and poorly differentiated intermediate cells.[3] massao and berger first reported MEC in 1942.[4] it was described as a separate pathological entity by stewart *et al*. In 1945.[4] it accounts for <10% of all tumors of salivary glands, whereas it constitutes approximately 30% of all malignant tumors of the salivary glands.[5]

Case report

A 75-year-old male reported with a chief complaint of a painless swelling on the posterior palate for 3 years. The swelling was small in size initially which gradually increased to the present size. The patient had no significant family and medical history. There was no extraoral changes seen and the lymph nodes were non palpable.

On intraoral examination, a dome shaped swelling was noted in the right posterior area of the hard palate of approximately 1x 2x 0.5 cm in size. The swelling was of normal mucosal color which did not cross the midline. On palpation, the lesion was nontender and firm in consistency with regular smooth borders and no discharge on compression. The lesion was surgically excised and sent for histopathological examination. A provisional diagnosis of benign tumor of minor salivary gland was given.

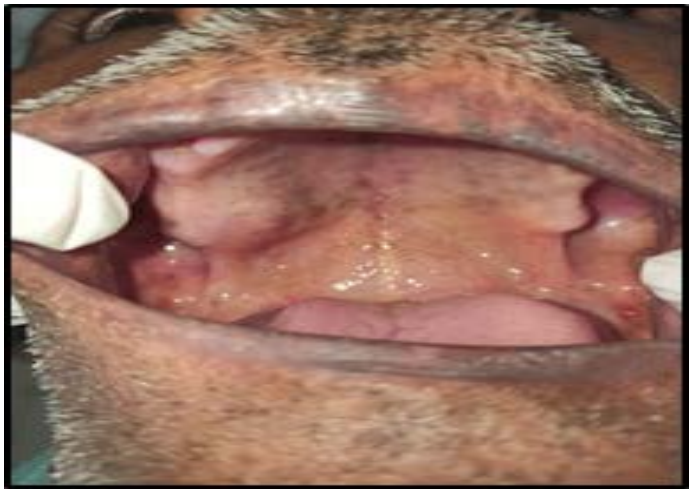

Figure 1: clinical picture of the patient revealing a dome shaped swelling in the right side of palate.

On gross examination, one soft tissue specimen was received measuring 2.0x 1.3x 0.8 cm in size, creamish brown in color, irregular in shape and surface and was firm to hard in consistency. The soft tissue was cut into 3 bits and the middle bit was kept for routine processing.

Figure 2a & 2b: gross picture of the specimen received.

The histopathological examination reveals moderately dense connective tissue stroma with islands of deeply basophilic polygonal epidermoid cells showing features of cellular atypia demonstrating cellular and nuclear pleomorphism with mitotic figures. Numerous mucus cells and clear cell along with keratin pearls were also noted. Also engorged blood vessels are seen. Deeper sections show normal salivary gland acini. The above histopathological features were suggestive of low-grade variant of mucoepidermoid carcinoma.

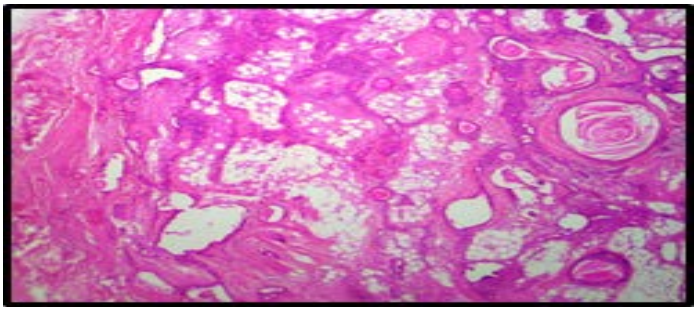

Figure 3: Photomicrograph showing mucous, and clear cells. Few areas depicting keratinization. (h and e, ×4)

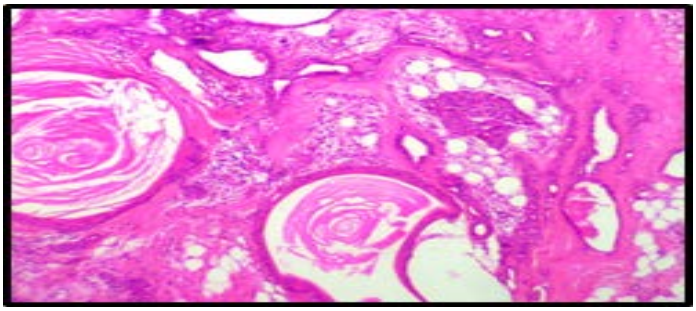

Figure 4: Photomicrograph showing intermediate and clear cells. (h and e, ×10)

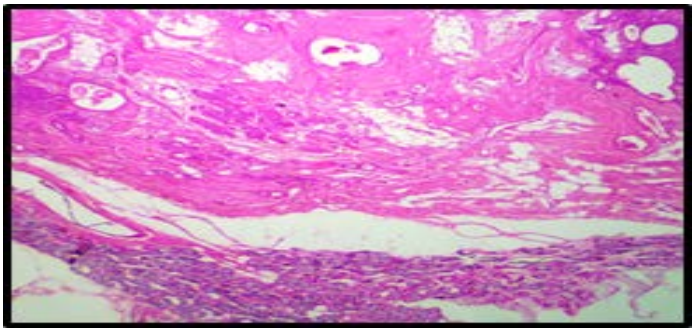

Figure 5: Photomicrograph showing submucousa with numerous mucous salivary gland acini (h and e, ×4)

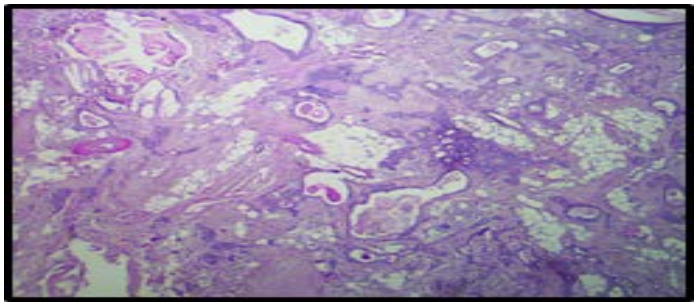

Figure 6: Photomicrograph showing pas positive mucus cells. (pas, ×4)

Discussion

MEC is a malignant epithelial tumor. MEC is composed of both mucus-secreting cells and epidermoid-type cells in varying proportions.[6] mucoepidermoid carcinoma represents 29–34% of malignant tumors originating in both major and minor salivary glands accounting for 5% of all salivary gland tumors.[6] parotid gland has the maximum site predilection for MEC. If seen in the oral cavity, it is found mainly in the palate as seen in our case. Buccal mucosa, upper and lower lips, and the retromolar region are few other sites which have a site correspondence for MEC.[7]

It is seen in a wider ager group ranging from the third to sixth decade of life. It occurs more in females as compared to males. MEC is usually asymptomatic presenting mainly as a painless swelling. Pain or facial nerve palsy may develop, usually in association with high-grade tumors.[1] MEC of the hard palate presents as a slow-growing, persistent, painless swelling which is soft in consistency. However, pain and pus discharge may be seen in lesion with secondary infection.[8] late diagnosis causes extensive spread, with possibility of perforation of the hard palate and invasion into maxillary antrum or nasal cavity.[9]

Histopathologically, the MEC is composed of mucous cells, epidermoid cells and intermediate cells. The mucous cells contain abundant, pale, foamy cytoplasm that stains positively for mucin stains. The epidermoid cells are

polygonal in shape with intercellular bridges resembling a squamous cell. A population of basaloid cells referred to as the intermediate cells are seen which are larger than basal cells and smaller than the squamous cells.[6] these intermediate cells are supposed to be the progenitor of epidermoid and mucus cells.[6] sometimes clear cells can be seen in clusters which are free of glycogen or mucin.

Traditionally, mucoepidermoid carcinomas have been categorized into one of three histopathologic grades based on the following: amount of cyst formation, degree of cytologic atypia and relative numbers of mucous, epidermoid, and intermediate cells.[1] brandwein et al gave a grading system and categorized into low, intermediate and high-grade malignancies.

Histological feature	*Score*	
	AFIP (Goode et al, 1998)	*Brandwein et al (2001)*
Cystic component <25%	2	2
Neural invasion	3	3
Necrosis	3	3
Mitoses >4/10 hpf	3	3
Anaplasia (nuclear atypia)	4	2
Invasion in small nests and islands	NI	2
Lymphatic or vascular invasion	NI	3
Bone invasion	NI	3
Grade I (low grade)	0–4	0
Grade II (intermediate grade)	5–6	2–3
Grade III (high grade)	7–14	4 or more

NI – features not included in the AFIP scheme.

Table 1: Difference in grading between AFIP and brandwein grading systems.[10]

Spiro et al. Also classified MEC as low, intermediate, or high grade, with 5-year survival rates of 92%, 83%, and 24%, respectively.[11]

When seen intraorally involving the palate, MEC can be misdiagnosed due to its clinical as well histopathological presentation. The differential diagnosis includes ductal papilloma, neurilemmoma, lipoma, polymorphous low-grade adenocarcinoma, adenoid cystic carcinoma, clear cell tumors, cystadenoma and intraosseous tumors and necrotizing sialometaplasia. The treatment of MEC varies according to the histopathologic grading, location and the clinical stage of the tumor. Low to intermediate-grade MECs originating from intraoral minor salivary glands can be managed by wide local surgical excision that ensures tumor-free surgical margins.[12] high-grade tumors require wide resection with the involvement of adjacent structures.[13] sometimes adjunctive radiation therapy is also used. Radical surgical resection offers a better chance for cure than do more conservative procedures, such as enucleation or curettage. [1] radiotherapy should be used only in selected cases because of long-term adverse effects.

Variants of mucoepidermoid carcinoma

Sclerosing mucoepidermoid carcinoma: SMEC was first reported in 1987 by chan and saw, who described a case of parotid involvement.[14] it can be differentiated from the usual MEC as there is extensive sclerosis present. Severe sclerosis associated with these tumors may even confuse experienced pathologists.[15] tumor infarction and mucin extravasation can be considered possible pathogenetic MEChanism for sclerosing MECs.[16] the mucin acts as a foreign material, resulting in fibrosis that forms as an attempt to wall-off the mucin.[17]

Intraosseous mucoepidermoid carcinoma : MEC is a malignancy which usually involves the salivary glands both major and minor. It sometimes may involve the bones. Involvement of the gnathic bones is extremely rare, with a higher incidence in the posterior mandible.[18] they have similar histopathologic features as that of the conventional MEC. The diagnosis of intraosseous MEC is confirmed based on positive staining for mucicarmine, alcian blue-pas and cytokeratins. Also, the presence of any metastatic tumors should be ruled out.

Conclusion

Dentists are health care specialists and no doctor apart from dentists could help better in diagnosing a palatal lesion. Even though low grade MECs are rare with very

low recurrence rate and good survival rate, these lesions need timely and precise diagnosis. Close clinical follow up should be made mandatory in such patients. Familiarity with clinical presentation and specific diagnostic features will lead to early detection, thereby reducing morbidity and improving the prognosis.

References

1. Neville. Textbook of oral and maxillofacial pathology. 3rd edition. Philadelphia: wb saunders company; 2002.
2. Seifert g, brocheriou c, cardesa a, eveson jw. Who international histological classification of tumours. Tentative histological classification of salivary gland tumours. Pathol res pract 1990; 186:555-81.
3. Ozawa h et al. Mucoepidermoid carcinoma of the head and neck: clinical analysis of 43 patients. Jpn j clin oncol 2008;38(6)414–418
4. Eversole lr. Mucoepidermoid carcinoma: review of 815 reported cases. J oral surg 1970; 28:490-4.
5. Boahene dk, olsen kd, lewis je, pinheiro ad, pankratz vs, bagniewski sm, et al. Mucoepidermoid carcinoma of the parotid gland: the mayo clinic experience. Arch otolaryngol head neck surg 2004; 130:849- 56.
6. R rajendran, shivapathasundaran. Shafer's textbook of oral pathology 6th edition. Philedelphia: elsevier; 2009.
7. Mishra s, mishra yc. Minor salivary gland tumors in the indian population: a series of cases over a ten-year period. J oral biol craniofac res 2014; 4:174-80.
8. Gill s, mohan a, aggarwal s, varshney a. Mucoepidermoid carcinoma of hard palate. Indian j pathol microbiol 2018; 61:397-8
9. Flaitz cm. Mucoepidermoid carcinoma of the palate in a child. Pediatr dent 2000; 22:292-3.
10. Speight pm, barrett aw. Salivary gland tumors. Oral diseases; 8(5): 229-40.
11. Spiro rh, huvos ag, berk r, strong ew. Mucoepidermoid carcinoma of salivary gland origin. A clinicopathologic study of 367 cases. Am j surg 1978; 136:461-8.
12. Moraes p, pereira c, almeida o, et al. Paediatric intraoral mucoepidermoid carcinoma mimicking a bone lesion. Int j paediatr dent 2007; 17:151-4.
13. Ali sa, memon as, shaik na, soomro ag. Mucoepidermoid carcinoma of parotid presenting as unilocular cyst. J ayub med coll abbottabad 2008; 20:141-2.
14. Chan jk, saw d. Sclerosing mucoepidermoid tumour of the parotid gland: report of a case. Histopathology. 1987; 11:203–7.
15. Bhat k, pandey b, shetty p, manohar v, shruthilaxmi mk, patidar m. Sclerosing mucoepidermoid carcinoma: a unique case. Sultan qaboos univ med j. 2014;14(2): e249–e252.
16. Fadare o, hileeto d, gruddin yl, mariappan mr. Sclerosing mucoepidermoid carcinoma of the parotid gland. Arch pathol lab med. 2004; 128:1046–9.
17. Bhat k, pandey b, shetty p, manohar v, shruthilaxmi mk, patidar m. Sclerosing mucoepidermoid carcinoma: a unique case. Sultan qaboos univ med j. 2014;14(2): e249–e252.
18. Bansal a, shetty dc, rai hc, et al. Primary intraosseous mucoepidermoid carcinoma of maxilla. E-j dentistry. 2011; 1: 14-7.