Treatment of Low grade Mucoepidermoid carcinoma of hard palate: A conservative approach

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Abstract

Mucoepidermoid carcinoma of the minor salivary glands though malignant, often displays clinical characteristics similar to benign tumors. Although it is the most common of all malignancies of salivary glands, and the palate is reported to be a frequently affected site, the incidence of palatal mucoepidermoid carcinoma is still quite rare. Proper guidelines regarding treatment of such low grade tumors have not been defined. The aim of this article is to present a case of low grade mucoepidermoid carcinoma of the palate and discuss the possibility of conservative approach for treatment.

Keywords: Mucoepidermoid carcinoma, Salivary gland tumor, Low grade tumor

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Introduction

Malignancy of the salivary glands is rare and comprises less than 3% of head and neck cancers.[1] Mucoepidermoid carcinoma (MEC) is the most common, accounting for almost 10% of all salivary gland tumors. Two thirds of MEC arise from the parotid gland, while 1/3rd arise from the minor salivary glands with the palate being frequently affected. MEC develops commonly in the third to sixth decade of life and shows a female predilection (3:2).[2] The etiology of these tumors is obscure but a number of risk factors have been keyed out including radiation exposure, tobacco use, genetic predisposition, viruses and environmental chemicals.[3] MEC while presenting with diverse histological features, also has a varying potential for aggressive behaviour dependent on its biological presentation and anatomic site. Due to the scarcity of the reported cases and variable histological and biological presentation of MEC; prognostic factors are difficult to determine and a treatment protocol has not been established. According to literature several treatment options exist which include radical neck dissection, wide local dissection with postoperative radiotherapy or excision down to the periosteum. The purpose of presenting this case is to discuss the importance of a conservative approach in selective cases of low grade MEC instead of radical treatment.

Case presentation

A 32-year-old female patient reported at our centre with a chief complaint of slowly increasing mass on palate since 6 months due to which she had difficulty in chewing and swallowing. Extraoral examination did not show any sign of facial asymmetry. On intra oral examination a swelling of approximately 2x2 cm in size with smooth, intact and a faintly blue translucent mucosa was seen. The swelling was in the right side of the palate extending posteriorly from first molar to the posterior palatal seal area and medially till the median palatal raphe. On palpation the swelling was non tender, firm to soft in consistency and slightly compressible.(Fig. 1)

Computed tomography (CT scan) revealed a well circumscribed lesion in the right palatal region without any bony infiltration. Fine-needle aspiration cytology was performed and a stringy mucoid material was aspirated which was sent for examination. Microscopic examination revealed mucinous background with cells resembling squamous epithelium, mucous producing cells and, clear cells. A tentative diagnosis of MEC was made, with differential diagnosis of pleomorphic adenoma and adenoid cystic carcinoma.

Wide local excision with 1 cm tumor free margins of soft tissue, down to the periosteum was performed while sparing the palatal bone; as the lesion appeared encapsulated and no neural or bony involvement was apparent.(Fig. 2) The H & E stained section showed sheets, islands and nests of epithelial cell intermixed with intermediate type and clear cells in collagenous background. Few microcyts were seen lined by mucous appearing cells. Epithelial cells are hyperchromatic but no abnormal mitosis were found, also the lesion was encapsulated. No infiltrative islands at the tumor borders were visible. The microscopic features, along with the clinical and radiological presentation confirmed the diagnosis of low grade mucoepidermoid

carcinoma.(Fig. 3) Lymph node aspiration was negative for any metastasis. The postoperative course was uneventful and follow-up for two years did not show any recurrence.

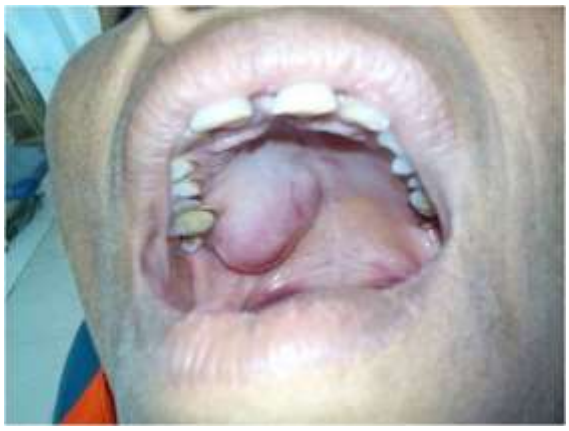

Fig. 1: Intraoral clinical photograph showing tumor growth in the right posterior palatal region

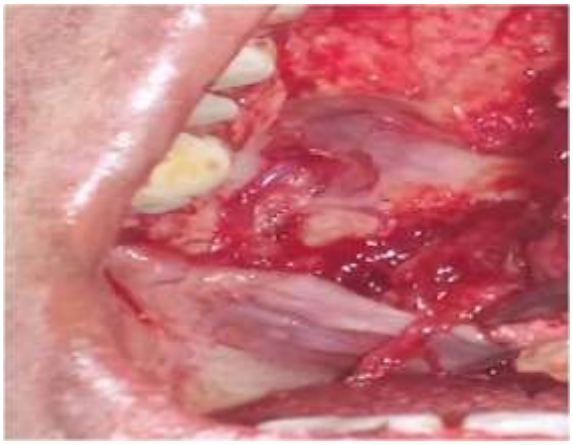

Fig. 2: Intraoperative photograph showing intact palatal bone after excision of tumor mass

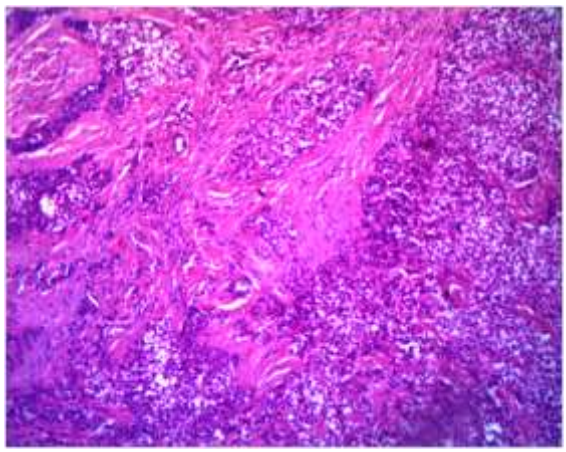

Fig. 3: The H & E stained section (at resolution of 4X) showing sheets, islands and nests of epithelial cell intermixed with intermediate type and clear cells in collagenous background with no abnormal mitosis

Discussion

Although MEC is the most common of all malignant salivary gland tumors, statistics show that malignancy of salivary glands is quite rare and intraoral involvement of minor salivary glands is even rarer.[4] Massao and Berger first described MEC in 1924.[5] In 1945 Stewart et al described MEC as a separate pathological entity.[6] Later in 1991 World Health Organization changed the name to mucoepidermoid carcinoma due to the metastatic nature of the tumor.[7] Mucoepidermoid carcinomas are tumors consisting of three distinct types of cellular elements: squamous cells, mucus-secreting cells and intermediate cells. Histologically this tumor shows a diverse nature and significant disparity exists among pathologists regarding grading.[8] The grading system by Armed Forces Institute of Pathology (AFIP) uses five histologic features, namely - mitotic activity, intracystic components, necrosis, neural invasion and anaplasia to distinguish between low and high grade MEC.[9] This descriptive two - tiered system has evolved over time to a three tiered system suggested in 2001 by Brandwein et al. which includes lymphovascular and bony invasion and also the pattern of tumor invasion in the form of small nests/islands.[8] These additional biological features enhance both predictability and reproducibility of the diagnosis and helps in treatment planning. These grading systems are also a reliable indicator of the prognosis. Although the treatment suggested for MEC is composite resection with or without postoperative radiotherapy, the specific treatment guidelines for low grade MEC's of palate are not very clearly defined which more often than not leads to overzealous resection. The approach to palatal MEC after diagnosis should be initiated with the application of the three-level grading system which considers the relative proportion of cell types (epidermoid, intermediate and mucinous cells), their respective degrees of atypia and growth patterns (cystic, solid, or infiltrative), and finally the neural and vascular invasion, grading it into low, intermediate or high category.[9] If the size of the histologic low grade tumor falls in T1 category and there is no evidence of any nodal metastasis, bony or vascular involvement, wide soft tissue excision along with adequate tumor-free margins should be the treatment protocol[10]. As a high percentage of intraoral MEC are low grade and usually small in size so adequate excision mostly suffices in such cases as documented by Ord RA, Salama AR in a study.[11] Whereas low grade tumors having a large size or bony erosion should be treated by partial maxillectomy or palatal fenestration. High grade tumors require more aggressive surgery with or without postoperative radiotherapy and chemotherapy.[12] This treatment protocol does not hold true for other types of tumors; as low grade malignancies other than MEC show recurrence if treated by soft tissue excision only and therefore require aggressive management.[11]

Although a single case report is not sufficient to establish a treatment protocol for low grade MEC of palate but similar evidence from recent studies regarding this lesion type supports the theory that a conservative surgical approach sparing the bone can be applied effectively.[4,11]

References

1. Drivas EI, Skoulakis CE, Symvoulakism EK, Bizaki AG, Lachanas VA, Bizakis JG. Pattern of parotid gland tumors on Crete, Greece: a retrospective study of 131 cases. Med Sci Monit. 2007;13(3):136-40.
2. Munhoz Ede A, Cardoso CL, Tjioe KC, Sant'ana E, Consolaro A, Damante JH, et al. Atypical clinical manifestation of mucoepidermoid carcinoma in the palate. Gen Dent. 2009; 57:e51-3.
3. Ellis GL, Auclair PL. Tumors of the salivary glands, Atlas of tumor pathology, 3rd Series, Fascicle 17. Washington DC: Armed Forces Institute of Pathology; 1966.
4. Eversole LR. Mucoepidermoid Carcinoma: Review of 815 reported cases. Oral Surg Oral Med Oral Pathol 1970;28:490-4952.
5. Masson P, Berger L. Epithéliomas à double métaplasie de la parotide. Bull Assoc Fr Etude Cancer 1924;13:366–373.
6. Stewart FW, Foote FW, Becker WF. Mucoepidermoid tumors of salivary glands. Ann Surg 1945;122:820.
7. Seifert G, Sobin LH. Histological Typing of Salivary Glands Tumors (International Histological Classification of Tumors). 2nd ed. Springer-Verlag, Berlin.1991.p20-21.
8. 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. Am J Surg Pathol 2001;25(7):835–45.
9. Qureshi SM, Janjua OS, Janjua SM. Mucoepidermoid carcinoma- A clinical-Pathological reviews of 75 cases. Int Journal of Oral and Maxillofacial Pathology. 2012;3(2):5-9.
10. Auclair PL, Ellis GL: Mucoepidermoid carcinoma. In Surgical Pathology of the Salivary Glands. Ellis GL, Auclair PL, Gnepp DR eds. Philadelphia: WB Saunders Co. 1991, pp 269-98.
11. Ord RA, Andrew R. Salama AR. Is it necessary to resect bone for lowgrademucoepidermoid carcinoma of the palate? British Journal of Oral and Maxillofacial Surgery. 2012;50:712–714.
12. Hicks J, Flaitz C: Mucoepidermoid carcinoma of salivary glands in children and adolescents: Assessment of proliferation markers. Eur J Cancer Oral Oncol, 2000;36(5):454-460.