

Case Profile

Mucoepidermoid carcinoma of retromolar region –A clinico-pathological study

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Abstract

Mucoepidermoid carcinoma (MEC) is the most common malignant tumour of the salivary glands. These tumours account for 5% of all salivary gland tumours commonly arise within the parotid gland and most common site within oral cavity is hard palate and rarely in retromolar trigon with firm consistency. We reported the case of 35 years old lady with mucoepidermoid carcinoma of retromolar trigon with cystic appearance. Clinical findings, computed tomography (CT Scan), and histopathological examination revealed low grade mucoepidermoid carcinoma with soft cystic swelling without lymphadenopathy and bony erosion. This patient was treated by surgical excision with reconstruction of the defect by masseter flap. Outcome of 6 months follow up also satisfactory according to rapid healing and has no recurrence including acceptable cosmesis, Good functional activity with normal intra incisal opening (IIO).

Keywords: Mucoepidermoid Carcinoma; low-grade; high grade; meseteric flap.

Introduction

Among all craniofacial malignancy prevalence of salivary gland tumor is 3-5% including both major and minor salivary gland (14-22%), remarkably most of the minor salivary gland tumors appear malignant in nature [5,7]. Mucoepidermoid carcinoma (MEC) is the most frequent malignant tumor occurring in the salivary glands, usually drawn the researcher's attention for its exceptional biologic features [10]. It is a distinctive type of malignant glandular epithelial neoplasm was first diagnosed by Masson and Berger in 1924 [11]. This tumor is originated from pluripotent cells of the excretory ducts of glandular structures [4] which is comprised of three cells in variably - squamous cells, mucus-secreting cells, and intermediate cells, with columnar, clear cell or oncocytoid structures [2].

According to researchers this tumor is predominate among women than men (3:2 in ratio with mean age is in the 5th decade of life). Rarely tumor is also seen in child (average age 11-15 years) [11]. Mucoepidermoid Carcinoma basically occur both in major and minor salivary glands, mostly appear as painless swelling with or without facial nerve involvement [11]. The asymptomatic swelling can be variably fixed, rubbery or soft mass presents pressure and discomfort [2]. In case of maior salivary gland - parotid gland 40%, submandibular gland 7% and sublingual gland 3% can be affected besides in case of minor salivary gland this tumor is more frequent on hard palate >retromolar trigone>floor of mouth>buccal mucosa>lip> tongue [8]. Histologically this tumor is differentiated into low, intermediate, and high-grade. High-grade tumors are comprised of squamous epithelial and intermediate cells and poorly differentiated aggressive in nature. High-grade MEC may induce pain, ulceration or facial paralysis, local destruction and metastasis to regional lymph nodes and distant metastasis to the lung, bone and to the brain in later stages [11]. Low-grade tumors are well differentiated, slow growing and consists of mucus-secreting and squamous epithelial cells with good prognosis [11]. Moreover, intermediate grade has clinical features between low and high grade [6]. Interestingly intraoral mucoepidermoid carcinoma may cause cystic degeneration into minor glands of the palate, buccal mucosa, tongue and retromolar areas thus representing like a mucocele clinically, which can be confirmed by biopsy only. This frequent tumor rarely can occur intraosseously within the jaw bones specially in the mandible with similar features of extraosseous variety [10].

Case Profile

A 35-year-old muslim female patient from Namuja, Bogura Sadar, Bogura reported to the Department of Oral and Maxillofacial Surgery of TMSS Medical College & Rafatullah Community Hospital, Bogura with the complaint of swelling in lower right posterior region of tooth

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Citation: Parometa Barma. Mucoepidermoid carcinoma of retromolar region –A clinico-pathological study. Int Clin Img and Med Rew. 2022; 1(1): 1024.

Received: Dec 18, 2021 Accepted: Jan 16, 2022 Published: Jan 22, 2022

since 1 year. According to statement of our patient, revealed that she was seemingly asymptomatic about 1 year back then she experienced swelling in the right sided posterior mandibular region. Primarily, the swelling was smaller in size but gradually, it was turns into the existing size. Patient also gave history of mild pain for 1 month which was continuous in nature and feeling discomfort when tongue contact with the swelling. Patient was normotensive, nondiabetic, non icteric with non contributory medical and dental history. On clinical examination intraorally a soft cystic swelling was identified in the right retromolar trigon, which was 2x2 cm in diameter, soft in consistency, overlying mucosa is reddish in color and mild tenderness present on pressure. There was no positive neck node. Clinical staging of tumor was CT-1N0M0. Patient's oral hygiene was moderate (OHI 2), no tooth decay was present (Figure1).



Figure 1: Pre-operative intraoral photograph showing soft cystic swelling (after rupture) at right retromolar region.

Patient's incisional biopsy was revealed that low grade mucoepidermoid carcinoma and Computed tomography scan (CT Scan) of Maxillofacial region was also reported that there was soft tissue expansile mass (24mmx11mmx23mm) at right retromolar trigone extending upwards into posteror aspect of maxillary alveolar process, downwards into mandibular alveolar process, lateral infiltration into buccal mucosa,medial infiltration into mucosa along hard palate which involving mucosa of medial pterygoid muscle without lymphadenopathy and bony erosion (Figure 2).

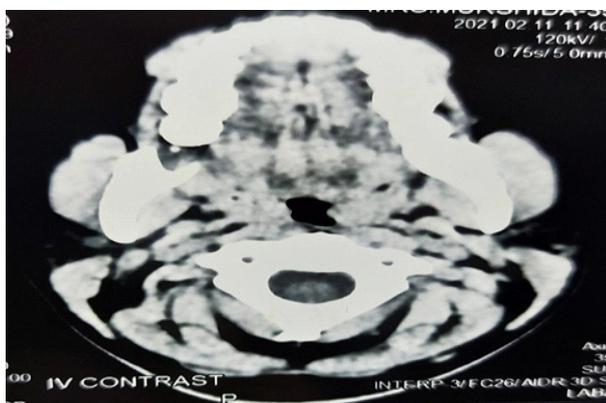


Figure 2: Computed tomography (CT) Scan showing soft tissue expansile mass on right retromolar trigone. Minor Salivary gland tumor, mucocele and Myxoma was thought to be as differential diagnosis.

Histopathology:

Histopathologically, the tissue specimen of retromolar region of discussed case collected before surgery (incisional biopsy) was revealed a malignant tumor composed of sheets and cluster of squamous cells, mucin cells and clear cells, occasional mitosis and mucin lakes are seen but lympho vascular metastasis were not evident, so histologically the reported case was low grade mucoepidermoid carcinoma (Figure 3- A, B, C, D).

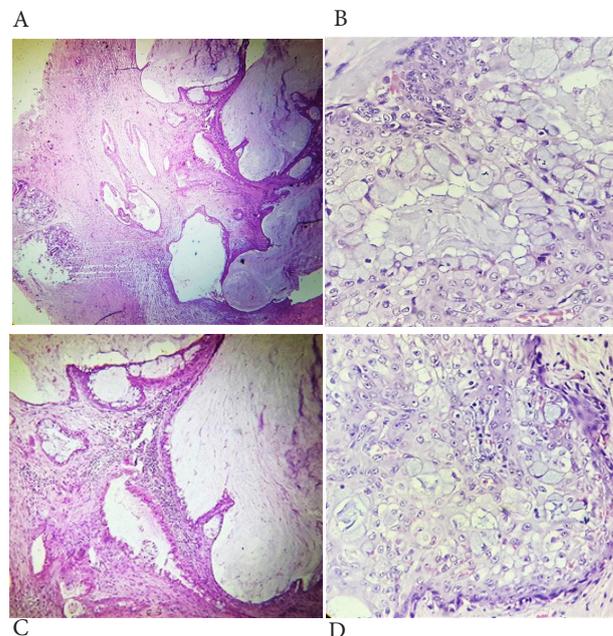


Figure 3 (A, B, C, D): Histopathological pattern of Low grade Mucoepidermoid Carcinoma.

Surgical Procedure:

On the basis of grading, location and the clinical presentation of lesion, treatment plan has been decided by surgeons. Wide excision of lesion followed by reconstruction of defect with masseteric flap was chosen as treatment option for this case. Whole surgical procedure was carried out with aseptic precaution under general anesthesia, excised the tissue with 1 cm margin all around and then intraoral defect was reconstructed by masseteric flap. After evaluation of excisional biopsy specimen it was revealed that low grade mucoepidermoid carcinoma with marginal clearance. [Figure 4 - a, b].



Figure 4: a. Per-operative intra-oral photograph, b. Tissue specimen from retromolar trigone.

Discussion

Human oral cavity contains abundant tissues which represents several oral lesions with divergence pathological and clinical presentation so that proper clinical diagnosis of oral lesions including salivary gland diseases is the main aim of our discussion. Among all salivary glands of oral cavity more than 800 are minor salivary glands with numerous small ducts which are scattered in groups in our oral cavity [10]. Among 10-15% of all salivary gland neoplasms are minor salivary gland origin apparently with the complaint of painless intraoral swelling in 60% cases for more than 12 months. More than 75% tumors are commonly seen on the palate > buccal mucosa > upper lip. Usually palatal minor salivary gland is commonly turns into neoplasia [7]. A clinical analytical study of 34 patients with MEC revealed that just 25% of the lesions affected mostly palatal minor salivary glands [5].

According to clinical presentation true diagnosis of MEC is difficult to clinician because this lesions sometimes appear as solid masses or as a soft tissue swelling with granular or papillary surfaces and ulcerated lesion. Occasionally swelling may appear as bluish or red-purple in colour, fluctuant and smooth in consistency which mirroring to mucocele [7]. MEC also misdiagnosed with pleomorphic adenoma or mucous retention cyst, hemangioma, pigmented nevus and cystic processes due to similar benign clinical features. MEC on retromolar trigone is mistaken with oral squamous cell carcinoma for its rare prevalence and the lesion sometimes also extended to tonsils, anterior pillar, and soft palate. So, incisional biopsy is necessary to differentiate the tumor [5].

According to literature evidence it has been reported that the survival rate for patients with low grade MEC is 92 to 100% where as 0-43% high grade as well as 62-92% intermediate grade patients could be survive for 5 years after surgery [11]. Low grade mucoepidermoid carcinoma contains well-circumscribed squamous nests with 2-4 cm in diameter comprising numerous clear cells, intracytoplasmic mucin [3] and solid gray-white or gray-pink areas are mixed with mucous-filled macro cysts, but intermediate grade has similar features except lack of macrocysts. High grade tumors may be similar in clinical presentation but are not well circumscribed and mucous infiltrated. Although features of cystic degeneration is apparent in high-grade tumor [7]. Surgical excision of MEC should be recommended and it is also mentioned that the excision should be more radical than for pleomorphic adenoma [11]. In reported case after excision of lesion intra-oral defect was reconstructed by masseteric flap because this flap is more viable, less donor sites morbidities, needs less surgical time and cost, technique of reconstruction is easy as well as less failure rates and good prognosis [6]. Masseteric flap design is mainly three types likely superiorly based from origin to zygomatic arch is preserved, inferiorly based from insertion to angle of mandible is preserved and the island flap from both origin and insertion preserved and is pivoted around the pedicle [6]. In reported case superiorly based masseter muscle flap was rotationally used to repair the intra-oral defect.

Post-surgical Outcome

After 6 months follow up, prognosis was first-rate. Patient was

living with acceptable cosmosis, good functional activities like speech, swallowing. Patient's intra-incisal opening (IIO) was not impaired, graft receipt and donor site was symptomless due to rapid healing. Fortunately there was no signs of recurrence (Figure 5).



Figure 5: Intra-oral photograph after 6 months of surgery.

Conclusion

The clinical course of minor salivary gland carcinomas is variable and often characterized by late relapse. The early diagnosis and treatment of minor salivary gland carcinoma leads to a better outcome and prognosis. The MEC sometimes mislead as a benign or inflammatory condition, hence clinicians must be aware of the differential diagnosis to be considered. Awareness of this entity in a mucocele like presentation is important for dental practitioners.

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