

Metastatic Cervical Carcinoma of Mandible Mimicking Residual Cyst– A Diagnostic Dilemma

¹Dr. M. Suresh Kumar, MDS, HOD, Department of Oral and Maxillofacial surgery, Meghna Institute of dental Sciences, Nizamabad.

²Dr. K. Amarnath, MDS, Professor, Department of Oral and Maxillofacial Surgery, Meghna Institute of Dental Sciences, Nizamabad.

³Dr. Mohd Moiz Ahmed, MDS, Post Graduate Trainee, Department of Oral and Maxillofacial Surgery, Meghna Institute Of Dental Sciences, Nizamabad.

⁴Dr. D. J. Vyavahare, BDS, Private Practitioner, Nizamabad.

Corresponding Author: Dr. Mohd Moiz Ahmed, MDS, Post Graduate Trainee, Department of Oral and Maxillofacial Surgery, Meghna Institute of Dental Sciences, Nizamabad.

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Abstract

Metastasis from distant sites to the jaws are unusual comprising approximately 1% of all oral cancers evidences suggests that almost any metastatic malignant tumor can potentially colonize to oral cavity .

A 45 years old female patient reported with chief complaint of painless swelling in relation to the lower left back tooth region from the past 4 months. Patient gives past medical history of cervical carcinoma 10 years back and has undergone radiotherapy for the same, histopathological findings revealed squamous cell carcinoma similar in pattern to that of cervical carcinoma.

The case reported here is a rare example of metastasis to the maxillofacial region from a cervical cancer with findings such as swelling, unilocular radiolucency in post-

extraction socket mimicking a residual cyst which could be easily misdiagnosed. This case report draws attention to the fact patients medical history is of esteem importance to the clinicians moreover dental practitioners should be well aware of the ability of metastasis and its disguised clinical features without any apparent cause and moreover should include metastatic carcinoma in differential diagnosis in unknown jaw lesions.

Keywords: Oral Cavity, Cervical Carcinoma, Metastasis

Introduction

Metastasis is the spread of cancer or disease from one organ or part to another not directly connected with it. The spread of metastasis may occur via the hematogenous or the lymphatic or through both routes. The metastases frequently occur in the lungs, liver, brain, and the bones.

The involvement of the oral and maxillofacial region in metastatic tumours is rare to occur and usually indicates widespread disease with a poor prognosis (Keller & Gunderson 1987, D'Silva et al. 2006, Lim et al. 2006, Hirshberg et al. 2008, Beena et al. 2011, Arias-Chamorro et al. 2012).

Metastases in the oral cavity are infrequent and comprise approximately 1% of all oral malignancies. In nearly 30% of cases, a metastatic lesion in the maxillofacial region is the first indication of underlying malignancy (Davidson & Moyo 1991, Hirshberg & Buchner 1995, Arias-Chamorro et al. 2012). Metastatic tumors are most often located in jaw bones (85%) within the oral cavity. The bone most commonly involved is the mandible (80-90%), mainly at molar or retromolar sites followed by maxilla and soft tissues.

Metastatic Tumors are of great clinical significance, as their appearance may be the first indication of an undiscovered malignancy at a distant primary site, or the first evidence of dissemination of a known tumor from its primary site.

Cancer is a complex disease characterized by various biological properties that develop through multistep processes, however, this process of metastasis results in morbidity and eventual mortality in most patients. Cervical cancer is one of the most common cancers in women and is a major primary site associated with oral metastases (Nishimura et al. 1982, Davidson & Moyo 1991, Hirshberg et al. 1993, 2008, Arias-Chamorro et al. 2012, Carvalho et al. 2012, Liu et al. 2013, Luciani et al. 2013). Thirteen percent of cervical cancer patients are diagnosed at advanced stages. The 5-year survival rate for metastatic cervical cancer is 16.5% compared to 91.5% for localized cervical cancer.

Early detection of metastasis is very important, especially in oral metastasis where prognosis is usually poor; most

patients die within 1 year of diagnosis of oral metastasis, while the 4-year survival rate is estimated to be 10%. Sometimes these lesions might be mistaken with inflammatory or infectious diseases of the jaws and adjacent structures as a result of clinical and radiographic similarities. Therefore, early diagnosis requires a high degree of astuteness and histopathologic evaluation. Despite of their rarity, metastatic diseases of the jaw must be considered in the differential diagnosis of unknown jaw lesions especially in patients with a history of malignancy elsewhere in the body.

Case Report

A 45 year old female patient reported to the department of oral and maxillofacial surgery with a chief complaint of painless swelling in the lower left back tooth region since 4 months. Patient reveals past medical history of undergoing chemotherapy 10 years back as she was diagnosed with cervical cancer. Patient gives history of undergoing multiple extractions in relation to 16,35,36,38,46 which was uneventful. Patient has fixed partial denture in relation to 34,35,36,37. No extra-oral swelling was appreciated in the involved region. On intra-oral examination a single oval shaped well circumscribed swelling measuring approximately about 3x2 cm in size was present in lower left buccal vestibule extending anteroposteriorly from 35 to 37 region, surface epithelium of swelling was intact with no ulceration. Mild tenderness was noticed on palpation over the swelling and it was fluctuant, soft in consistency, non-compressible, there was buccal vestibular obliteration extending from 34 to 37. A fine needle aspiration cytology was performed as the swelling resembled features of a cyst -FNAC revealed Dark blood coloured fluid on aspiration which was not refilling.



Fig. 1 : Intraoral Swelling



Fig. 2: FNAC

Radiographic Investigations Were Done Orthopantomogram(Opg) Revealed Well Defined Unilocular Radiolucency With Irregular Margin Measuring About 2x2cm In Extraction Socket Of 36. Cone Beam Computed Tomography(Cbct) Revealed A Destructive Lesion With Perforation Of Both Buccal And Lingual Cortical Plates In Relation To The Extraction Socket Of 36 Mass Tissues Lesion Was Infiltrating The Bony Cortex Of The Mandible.

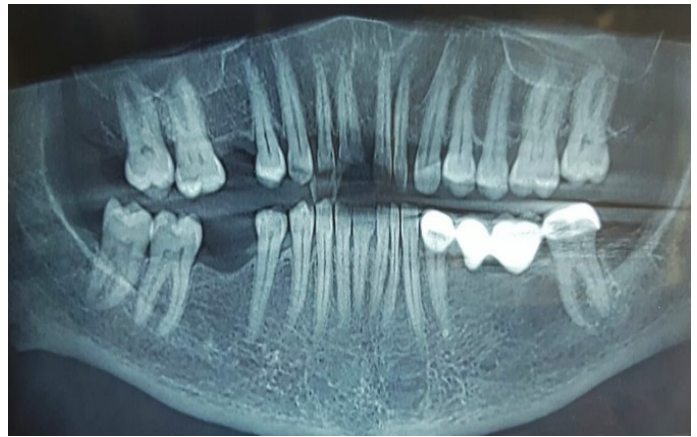


Fig. 3: Orthopantomogramm

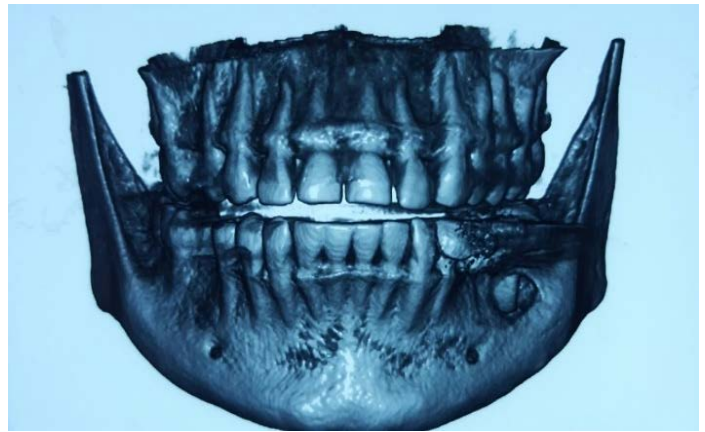


Fig. 4: CBCT

As the lesion was small an excisional biopsy was planned and performed from the involved site and was sent for histopathological examination which revealed few epithelial islands and focal areas of ductal proliferation showing cellular atypia resembling squamous cell carcinoma similar in morphological pattern to cervical carcinoma and a diagnosis of cervical metastatic carcinoma of mandible was confirmed considering the past medical history, histomorphologic, radiographic and clinical features of the lesion.



Fig. 5: Intra-OP



Fig. 6: Excisional Biopsy

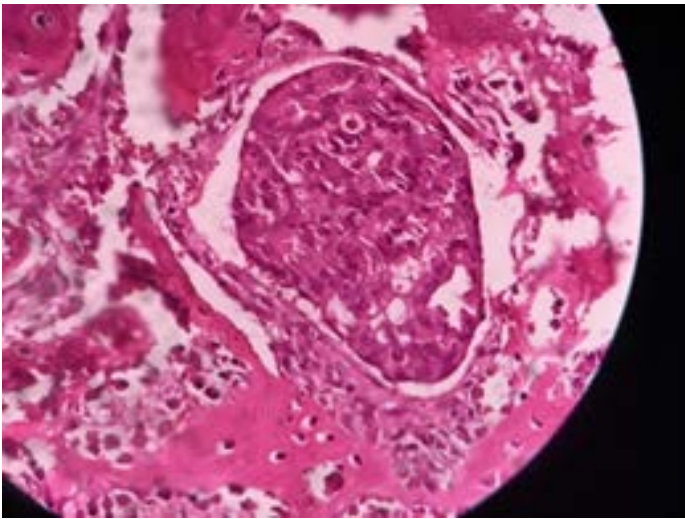


Fig. 7: Histopathology

As the prognosis of patients after development of metastasis is usually grave with an average survival rate of

7 months. Treatment options include surgical resection sometimes combined with radiotherapy or chemotherapy . As most of the patients with oral metastasis already have metastasis spread elsewhere treatment options are limited to palliative care aimed to preserve the quality of life. In this case as the diagnosis was confirmed to be secondary extension of cervical carcinoma in the mandible and the patient was referred to higher centers for undergoing further treatment .

Discussion

Cervical cancer is considered to be the second most important cancer amongst women, with a considerable potential for metastasis. For oral metastases, this corresponds to 7.7%(Hirshberg et al. 2008, Ferlay et al. 2010)[2]. Tumor progression is fundamentally dependent on the formation of new blood vessels and apoptosis. A study was conducted on 324 cases in 169 cases the metastatic tumour was found before the primary origin was diagnosed, while in 155 cases oral metastasis was the first sign of the metastatic disease. The average time between the diagnosis of the primary tumour and the detection of oral metastases is approximately

40 months[1]. This is an important time-point related to an advanced disease and a worse prognosis for the affected patient, with high mortality rates (Davidson & Moyo 1991)[2]. The median duration from treatment of primary to the development of metastasis ranges from 2 to 13 years. In our case oral metastasis was reported 10yrs post treatment for the primary tumor.

Oral metastases can develop at any age, although most researchers agree that the greatest prevalence is observed between the fifth and sixth decades of life. According to Hirshberg et al, the mean age is 51.5 years in men versus 47.1 years in women.

The jawbones are twice as common for metastatic colonization as the oral mucosa. Metastatic lesions can be found anywhere in the oral cavity, however, in the jawbones, the mandible was more frequently involved than the maxilla, with the molar area being the most frequent site. The accurate incidence of metastasis to the jawbones is difficult to access and is probably far more common than is noted. In the mandible, microscopic deposits of metastatic tumour cells which were not identified in routine radiographic examination were found in 16% of autopsied carcinoma cases.

In a review of 114 cases of metastatic jaw tumors by D'Silva *et al.*, found that the most common jaw symptom was pain other signs and symptoms included swelling, presence of intraoral mass, loose or extruded teeth, cortical expansion, regional lymphadenopathy, gum irritation, ulceration, exophytic growth, halitosis, and trismus. Special attention should be given to patients with "numb chin syndrome" or mental nerve neuropathy, a symptom which should always raise the suspicion of a metastatic disease in the mandible. In the present case the patient complained only of a swelling on lower left back tooth region.

The classical radiographic appearance of metastatic disease in the jaws varies from well-circumscribed to poorly circumscribed radiolucency, often described as a "moth-eaten" appearance. Interestingly, in a study of 673 cases by Hirshberg *et al.*, in 2008 reported that approximately 5% of the cases did not show any radiographic changes. The type of interaction between the bone microenvironment and the tumour cells can potentially give rise to osteolytic (bone resorbing) or osteoblastic (bone forming) metastasis. Osteolytic bone metastases are characteristic for most malignancies, and indeed, over 90% of jawbone metastases presented as osteolytic lesion. In the present case the radiographic

findings were that of a destructive osteolytic lesion near the post extraction socket of 36.

A peculiar site for metastasis is the post-extraction site. Analysis of the literature revealed 56 cases in which tooth extraction preceded the discovery of the metastasis. In many of these cases the metastatic tumour was assumed to be present in the area before extraction. In some cases, the metastasis is discovered in a recent extraction site. A soft tissue mass extruding from a recent extraction wound accompanied by pain are the main symptoms. In some cases metastatic tumour is present in the area causing symptoms of pain, swelling and loosening of teeth which lead the clinician to extract the offending tooth. However, in other cases, metastasis probably develops after extraction. Tooth extraction can serve as a promoting factor in the metastatic process. In the present case a soft tissue mass and swelling in post-extraction socket of 36 were noted.

A study was done by Mehram *et al* where 6,199 patients were registered between January 2010 and December 2014 of whom patients with gynecological malignancy were 496, and those with carcinoma cervix were 306. The incidence of gynecological malignancies was 8 % and that of cervical cancer was 6 % at this center. Histologically, 92.5 % cervical cancers were Squamous cell carcinoma (SCC). In our case histopathological features resembled that of squamous cell carcinoma.

The jawbones, especially in the old age, are poor in active marrow, which is usually found in the posterior part of the mandible. However, remnants of haematopoietic marrow can be detected in edentulous mandibles, in cases of focal osteoporotic bone marrow defects.

Because of its rarity, the diagnosis of a metastatic lesion in the oral cavity is challenging, both to the clinician and to the pathologist, in recognizing that a lesion is metastatic and in determining the site of origin. The clinical and

radiographic presentation of a metastatic lesion in the oral cavity can often be deceiving, leading to a misdiagnosis of a benign or malignant process, therefore, in any case where the clinical presentation is unusual, especially in patients with history of a known malignant disease, biopsy is mandatory.

Currently, there is no specific widely accepted guideline for the treatment of patients with bone involvement. The prognosis of patients after development of metastasis is usually poor and Patients who do not receive therapy for bone metastasis survive for less than 6 months[7]. Usually most patients with oral metastases already have metastatic spread elsewhere in the body so palliative care is the only treatment option. In those cases in which the oral lesion is the only metastasis, its resection with or without radiotherapy may improve morbidity, although the benefits are usually only of a palliative nature.

Conclusion

Metastatic lesions of jaws and mouth are infrequent if present depict widespread disease. In these lesions clinical presentation is often deceiving leading to misdiagnosis so esteemed importance should be given to patient's medical history and biopsy should be done in known malignancy. Diagnosis of these lesions poses a challenge to both the clinician and histopathologist both in recognition of lesion and to detect site of origin. Metastatic lesions should be included in differential diagnosis of inflammatory and reactive lesions of the jaw regardless of its rarity.

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