

Metastatic Hepatocellular Carcinoma Presenting in the Mandible

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Abstract:

Hepatocellular carcinoma is a primary malignant tumor of the liver and the most common liver malignancy usually arising in the setting of liver cirrhosis. Metastatic spread of the tumor is through vascular channels mainly to the lung (58%) but lymphatic spread is also present with lymph node metastasis the second most common site (10-42%). Metastasis to bone has incidence ranging from 3% to 20%. Oral metastasis has been reported in literature to be <1% with a worse outcome. Here we present a case of metastatic hepatocellular carcinoma to the posterior mandible and mucosa in a 58 year old female presenting as an ulcerated mass after tooth extraction. The patient had no known co-morbid and had no clinical cervical lymphadenopathy. She was started on chemotherapy but succumbed to the disease a couple of weeks later. The case reveals possibility of other tumors presenting in the oral cavity as ulcerative lesions other than oral squamous cell carcinoma in high prevalence areas of oral squamous cell carcinoma.

Introduction

Hepatocellular carcinoma is a primary malignant tumor of the liver and the most common liver malignancy usually arising in the setting of liver cirrhosis.¹ It has highest incidence in regions with a high prevalence of chronic viral hepatitis especially Hepatitis B.² It has a very poor prognosis and stated as the fifth most common cause of cancer death in males and ninth most common cause of death in females in 2008 in the United States.³ The incidence of hepatocellular carcinoma is alarming with rates as high as 32/100000 in countries such as China.⁴ The reported incidence in Pakistan was 3.0 and 1.8/100000 in Pakistan in 1997.⁵ As reported in 2002,

these rates have climbed to 5.4 and 3.7/100000 respectively.⁶

Hepatocellular carcinoma is vascular and likewise the metastatic spread of the tumor is through vascular channels mainly to the lung (58%) but lymphatic spread is also present with lymph node metastasis the second most common site (10-42%). Metastasis to bone has incidence ranging from 3% to 20%.⁷

Case report

A female patient of 58 years presented us with a 2-month ulcerative expansion of the right lower posterior alveolus and body. It caused patient eating difficulties, and sometimes became painful. The patient stated that, when she experienced swelling and ulceration, she had painful broken-down teeth that were removed and healed without complication in the same region 3 months earlier and that she was wearing a denture over the area. The patient did not have any past medical history.

Examination was carried out and an ulcerated mass was found on the alveolus extending down to the vestibule, effectively obliterating it and extending from the 2nd molar posteriorly to the canine anteriorly. The intervening teeth were missing. The lesion was firm on palpation and bled on manipulation. An examination of the neck was unremarkable. No obvious abdominal findings were noticed, there was neither oedema nor jaundice.

A preliminary CT scan with contrast that showed a lytic mass in the right mandible perforating both cortices and extending buccally. Bilaterally submandibular glands were enlarged but lymph nodes were not significant (<1cm). For better hemostatic control, an incisional biopsy was performed

under GA and yielded a poorly differentiated tumor.

Immunohistochemical analysis was performed for tumor markers, with positive results for HepPar-1 and negative results for CD-10 and Cytokeratin-5/6. A diagnosis of metastatic, hepatocellular carcinoma was made. AntiHCV antibody serum test was performed and yielded positive results. The patient was referred to a medical oncologist where she received chemotherapy. After two weeks the patient succumbed to the disease.

Discussion

Hepatocellular carcinoma is a malignant tumor of the liver with a strong association with chronic viral hepatitis.^{1,2} Statistics show that the incidence of HCC is highest in East Asian populations.⁸ HCC is more common in males and the aged at diagnosis is reported to be > 65years.⁹ twenty five percent of HCC patients develop extrahepatic metastasis with lung, lymph nodes and bone the preferred sites of metastasis in descending order.^{7,10} Metastasis to oral cavity and jaw is uncommon and the reported incidence is around 1%.¹¹ Oral metastasis of HCC can be found on gingiva, in the mandible, maxilla as well as maxillary antrum.¹² Mandibular metastasis is twice as common as metastasis to soft tissues of the oral cavity.^{13,14} The most common site for soft tissue spread is gingiva.¹⁵ In a review out of 96 Facial metastasis, 68 cases were metastasis to the mandible.¹² The first reported case of metastasis to mandible was reported by Dick et al in 1957.¹⁶ It is reported than 50-66% of all oral metastasis from HCC were discovered before the primary.^{12,14} Gingival lesions usually appear as pyogenic granulomas while mandibular lesions are mostly lytic lesions in radiographs.¹² Marker in 1991 reported a patient who developed ulceration in the wisdom tooth area that progressed to an exophytic mass similar to the case we presented.¹³ Due to the vascular nature of HCC severe bleeding has also been reported during the initial biopsy as well as spontaneously.^{17,18} HCC localized to the liver can be treated with radiofrequency ablation, surgical resection or liver transplant.^{19–22}

Chemoembolization is also an alternative option for unresectable HCC.²³ Due to metastatic nature of the disease locoregional therapies were not advised by the medical oncologist.

Food and Drug Administration currently only allow sorafenib as a systemic chemotherapeutic agent for HCC, which approximately extend median survival rate in patients with advanced HCC by 3 months in phase III randomized clinical trials.²⁴

Sorafenib interacts with multiple intracellular and receptor tyrosine kinases, thus inhibiting proliferation

of tumor cells and angiogenesis.¹² Multiple reported cases of HCC metastasis to the mandible, have

shown radiographic signs suspicious of tumor, such as formation of tumor mass in the bone osteolytic lesions and ill-defined borders.^{16,17,25–30} Another case reports a lesion in which the margins of the lesion were clearly defined.

This case report demonstrates that a lesion in the orofacial region might not always be a primary lesion but can be a metastatic tumor from some distant primary site. Metastasis of HCC in the orofacial region is rare, but the clinician should always consider its possibility specially if there are known risk factors for HCC in the patient. Oral and maxillofacial surgeons can play a very important role in the early diagnosis and treatment of metastatic tumors in the oral cavity because of their surgical expertise and coordination with other doctors of their respective field. Careful and detailed clinical, radiographic and histological examination are the most important factors involved in the diagnosis and subsequent treatment of such lesions.

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