

Case Report (IV)

Metastasis to Oral Cavity-A Report of Two Cases and Review of Literature

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ABSTRACT

Metastatic tumours to oral region are uncommon and may occur in the oral soft tissues or jaw bones. Because of their rarity, metastasis to oral cavity are challenging to diagnose and treat. Oral metastasis is associated with poor prognosis.

INTRODUCTION

The oral region is not a preferred site for metastatic colonisation.¹ They should be considered in the differential diagnosis of reactive and inflammatory lesions that commonly arise in this area. Oral metastasis produces distressing symptoms that are difficult to palliate. The treatment outcomes are poor and time from appearance of metastasis to death is a few months. We report 2 cases with metastasis to the oral cavity.

Case 1: Palatal metastasis from Retroperitoneal Leiomyosarcoma

A 59-year-old male presented with 3-month history of constipation, hesitancy in micturition, dysuria and weight-loss. There was no history of vomiting, abdominal pain or bleeding per rectum. Physical examination revealed a 1x1 cm nodule in the hard palate adjacent to the right upper second incisor tooth. Additionally, there

was a 3x3 cm subcutaneous nodule over the medial end of the lower border of the left scapula. He also had a nodular, hard hepatomegaly extending 6 cm below the right costal margin and an 8x8 cm hard fixed mass arising out of the pelvis. Per rectal exam was suggestive of an extrinsic compression.

A CT (computed tomography) scan of the abdomen and pelvis showed a large heterogeneously enhancing pelvic mass lesion in relation to the prostate. There was compression and displacement of the rectum to the left. The perilesional planes of cleavage with right lateral pelvic wall and bladder were obliterated. There was no evidence of bone involvement. There was no evidence of adenopathy. The liver showed multiple non-enhancing hypodense lesions involving both lobes, suggestive of metastases. A chest radiograph was normal.

A punch biopsy from the palatal nodule showed a cellular spindle cell lesion composed of cells with elongated oval-shaped nucleus, having blunt ends abutting normal stratified squamous epithelium. Occasional giant cells with prominent eosinophilic nucleoli were seen. On immunohistochemistry, the tumour cells were positive for Smooth Muscle Antigen (SMA), Vimentin and Neuron Specific Enolase (NSE), but negative for Epithelial Membrane Antigen (EMA), HMB 45 and CD 68. This was consistent with a metastatic leiomyosarcoma.

The patient was treated with 3 cycles of palliative chemotherapy with doxorubicin, ifosfamide and dacarbazine. Progressive disease was documented in the abdomen after 3 cycles

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of chemotherapy. The palatal lesion also continued to increase in size. The patient was enrolled on to a Phase I clinical trial. He died within 15 weeks of the appearance of palatal swelling.

Case 2: Gingival Metastasis from Non Small Cell Lung Cancer

A 40-year-old man presented with complaints of an exertional dyspnoea and non-productive cough of 1-month duration. There was no history of fever, chest pain or discomfort, hemoptysis, change in voice or dysphagia. There was a history of significant loss of appetite and weight. He was a chronic smoker. On examination, he had a 1x1 cm, red, non-ulcerated nodule over the lower gingiva adjacent to the left incisor tooth. A chest examination showed decreased breath sounds on the right interscapular and infrascapular areas.

The chest radiograph showed an irregular non-homogenous opacity in the right mid and lower zones with minimal pleural effusion. The CT scan of the thorax with contrast showed a large, heterogeneously enhancing mass lesion, involving the middle and lower lobe of the right lung with extension and invasion of the mediastinal vascular structures and pleural thickening. There were enlarged right pretracheal and prevascular lymph nodes. FNABC (fine needle aspiration biopsy cytology) of the gingival nodule showed morphologic features consistent with a poorly differentiated carcinoma, probably a squamous cell carcinoma.

He was started on palliative chemotherapy with paclitaxel and carboplatin. The gingival nodule increased in size at the end of the first cycle of chemotherapy. Hence, he received local radiotherapy. The lesion continued to increase while on radiotherapy. He succumbed to the disease within eight week of diagnosis.

DISCUSSION

Metastasis to the oral cavity is unusual and constitutes 1% of all oral malignant tumours.² In the absence of any other metastasis, isolated tumour seeding of oral soft tissues is extremely

rare and constitutes 0.1% of all oral malignancies.³ However, autopsies of patients with carcinoma reveal higher frequency of occult metastatic deposits in the oral region. The jaw bones are more commonly affected than the oral mucosa, in a ratio of 2.5:1.¹ The oral region is not a preferred site for metastasis. Oral metastasis arises as a result of secondary spread from other metastatic lesions, especially the lungs. In about 30% of oral metastasis, this is the first site of metastatic disease. In such cases, the tumour cells bypass filtration by the lungs. Any increase in the intra thoracic pressure directs blood flow into the valve-less vertebral venous plexus from the azygous and caval venous system. This accounts for the increased occurrence of metastasis in the axial skeleton and head-and-neck area.¹

Pathogenesis of metastasis to jaw bones is unclear. Jaw bones have very little red marrow and remnant hematopoietic tissue in the posterior areas may be the site for metastasis. In oral soft tissue, the rich capillary network of chronically inflamed mucosa, especially of the gingiva can trap malignant cells. These capillaries contain fragmented basement membrane through which tumour cells can easily penetrate.⁴ Both our patients had oral soft tissue metastasis, which is less common compared to metastasis to jaw bones. The patient with bronchogenic carcinoma had isolated gingival metastasis which is extremely rare.³

Metastases are more common from carcinomas (83%) compared to sarcomas (17%). Lung and breast carcinomas account for the majority that metastasize to the oral cavity, constituting 50-60% of all tumours.^{5,6}

In males, the tumours that metastasize to oral mucosa are lung (35%), kidney (16%) and skin (15%). In females, breast (24%), genital organs (17%), lung (12%), kidney and bone (10% each) are known to spread to oral mucosa.⁴ Inside the oral cavity, tumours commonly metastasize to the tongue (35%) and gingiva (35%) with the rest of the sub-sites constituting 30%.⁵ The presence of teeth seems to be an important determinant on oral site preference for metastasis. In the dentulous patient, 80% have metastasis in the gingiva while in the

edentulous, metastatic lesions are distributed between the tongue and alveolar mucosa. In its early manifestation, gingival metastasis may resemble hyperplastic or reactive lesions like a pyogenic granuloma or epulis.⁶

The diagnosis is based on biopsy from the oral region metastasis. In some cases when oral metastases are the first presentation, immunohistochemical stains may be necessary to characterize the primary tumour or confirm the metastasis. One of our patients had a biopsy with confirmation by immunohistochemistry while the other had an FNABC only. Jaw metastasis may be detected on radiographs, which can show an ill-defined lytic lesion. Computed tomography (CT) scan and magnetic resonance imaging (MRI) may be performed to define the extent of the lesion. Imaging of the oral lesions was not done in either of our patients.

Some intra oral malignancies, especially from salivary glands, have histologic features similar to that of tumours in distant organs^{1,4} eg: primary duct cell carcinoma of salivary gland and breast cancer, primary oral clear cell cancer and clear cell cancer from another site, primary oral melanoma and metastatic melanoma from skin.

Oral metastasis is considered a late complication and is commonly associated with multiple organ metastases. Oral metastasis can grow rapidly causing pain, difficulty in chewing, dysphagia, disfigurement and intermittent bleeding, leading to poor quality of life.^{2,3,7-10} In some cases, the metastasis is discovered after a recent dental extraction at the site.¹ Although the metastasis was asymptomatic in one of our patients, the one with bronchogenic carcinoma had pain, bleeding, difficulty in chewing and significant disfigurement. It is an ominous prognostic sign and is associated with poor prognosis with a median survival of 4 months.¹⁰⁻¹³ To our knowledge, only 12 cases of lung carcinoma with gingival metastasis have been reported in the literature.¹⁴

Intra abdominal leiomyosarcomas commonly metastasize to the liver [65%], peritoneum [21%], lymph nodes and bone [6%

each] and lung [2%].¹⁵ Metastasis from leiomyosarcoma to the head-and-neck, and, to the palate in particular, is unusual.¹⁶

Oral metastasis indicates widespread disease. Treatment is aimed at palliation of symptoms. In some patients, surgery with or without local radiation therapy may improve the patient's quality of life. Oral metastases are usually resistant to chemotherapy. In both the patients, the lesions continued to progress while on chemotherapy. Oral mucosal metastasis is uncommon, associated with extremely poor outcomes and difficult to palliate.

REFERENCES :

- 1) *Hirshberg A, Buchner A. Metastatic neoplasms to the oral cavity. <http://www.emedicine.com/derm/topic673.htm>. Accessed Jan 31, 2004.*
- 2) *Zachariades N. Neoplasms metastatic to mouth, jaws and surrounding tissues. Journal of Craniomaxillofacial Surgery 1989;17:283-290.*
- 3) *Meyer I, Shelar G. Malignant tumours metastatic to mouth and jaws. Oral Surgery 1965;20:350-362.*
- 4) *Hirshberg A, Leibovich P, Buchner A. Metastasis to the oral mucosa: analysis of 157 cases. Pathol Med 1993 Oct; 22(9):385-90.*
- 5) *Connor K, Nadelhoffer E. Metastasis to Oral Cavity-Statistics, Clinical Description and Treatment, Slides 1-16. www.dental.mu.edu/oralpath/spresent/metastatic/sId001-htm-2k. Accessed January 31, 2004*
- 6) *Sterling JA, Tassman GC, Goldsmith R. Solitary metastatic lesions to gingiva masquerading as inflammation. Oral Surgery Oral Medicine Oral Pathology Oral Radiology Endodontics 1954;7:403-405.*
- 7) *Hatziotis JC, Constantinidon H, Papanayotou PH. Metastatic tumours of oral soft tissue. Oral Surgery 1973;36:544-556.*
- 8) *Cash CD, Royer RQ, Dahlin DC. Metastatic tumours of the jaws. Oral Surgery Oral Medicine Oral Pathology Oral Radiology Endodontics 1961;14:897-905.*
- 9) *Barr CE, Dym H, Weingarten LA. Metastatic mucous producing adenocarcinoma of the gingiva. Journal of Oral Surgery 1980; 101:53-54. Solomon MP, Rosen Y, Gormley M, et al. Metastatic lesions to Oral soft tissue. Jn Oral Surgery 1975;33:53-56.*
- 10) *Kadokura M, Yamamoto S, Kataoka D, et al. Pulmonary adenocarcinoma metastatic to the gingiva. Int Jn Clin Oncology 1999;4:253-255.*

- 11) *Donoff RB, Albert T, Olson DJ, et al: Metastatic bronchogenic carcinoma to mandible. Jn Oral Surgery 1976;34:1007-1011.*
- 12) *Sanner JR, Ramin JE, Yang CH. Carcinoma of the lung metastatic to gingiva-Review of literature and report of case. Jn of Oral Surgery 1979;37:103-106.*
- 13) *Hirshberg A, Buchner A. Metastatic tumours to the oral region. An overview. Eur J Cancer B Oral Oncol 1995 Nov; 31B(6):355-60.*
- 14) *Motoyuki T, Akio H, Hiroshi U, et al. Gingival metastasis in Lung cancer. Oncol Reports 2002;9:571-574.*
- 15) *Ronald P. DeMatteo, Jonathan J. Lewis, Denis Leuvy, et al. GIST-Recurrence patterns and Prognostic factors for survival. Ann Surgery 2000;231:151-58.*
- 16) *Schenberg ME, Slootweg PJ, Koole R, et al. Leiomyosarcomas of the Oral Cavity - Report of 4 cases and review of literature. Jn Craniomaxillofacial surgery 1993;21C:342-7.*



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