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Metastatic Carcinoma of the Jaws: Report of a Case

Jack L. Clark, DDS, MD*

Primary malignant tumors of the mouth and jaws usually do not present a diagnostic challenge to oral surgeons or otolaryngologists. However, recognition of metastatic tumors in the mouth and jaws is much more difficult. A case is presented of metastatic carcinoma from the lung to the soft tissue of the oral cavity. Histopathology of the lesions in the lung and oral cavity as well as the chest x-ray and the Panorex x-ray are presented. The patient refused palliative treatment, became malnourished, and died. A review of the pertinent literature is also presented. (Henry Ford Hosp Med J 1990;38:36-8)

Only in the last few decades have tumors metastatic to the mouth or jaws been emphasized in the differential diagnosis of oral lesions. Because life expectancy is longer each year, an increase in the incidence of cancer along with an increase in the incidence of oral metastases must be anticipated.

Metastases to the bones of the mandible or maxilla are reported from time to time, but metastatic foci localized in the oral soft tissues are unusual. Carcinoma of the lung was the second most common primary site of metastases to the jaw reported in the large study of Clausen and Poulsen (1).

Case Report

A 68-year-old black male was evaluated in 1981 for complaints of weight loss, fatigue, and malaise. The illness began two months previously with weakness and weight loss despite a normal appetite. Significant historical factors included heavy alcohol consumption and 90 packs/years of smoking. He acknowledged a chronic, productive cough.

The patient was cachectic but vital signs were normal. Auscultation of the lungs disclosed bibasilar rales and rhonchi predominantly in the right lower lobe. Chest x-ray revealed an infiltrate in the posterior basal segment of the right lower lobe as well as a suspected mass in the right upper lung field (Fig 1). A 1.5 cm coin lesion was seen overlying the right lower lobe. Tomograms of this area revealed a large, right, mediastinal mass pressing on the right main bronchus medially. In addition a 1.3 X 1.2 cm density was revealed near the area of scarring over the right apical region (Fig 2). At bronchoscopy an irregular, white, friable mass was seen obstructing the right intermediate bronchus. Biopsy confirmed the diagnosis of squamous cell carcinoma (Figs 3 and 4). Liver/spleen, brain, and bone scans revealed no evidence of metastatic disease. However, a friable lesion was found at the right retromolar trigone. Panorex x-ray showed no bony lesions (Fig 5), but biopsy confirmed this lesion also to be squamous cell carcinoma (Figs 6 and 7). The patient refused all treatment and was discharged home in the care of his family.

The patient was readmitted in less than a month with increasing dyspnea. Progressive deterioration in renal function and mental status led to his death in kidney failure.

Discussion

A 1954 review included a total of only 176 reported examples of metastasis to the jaws (2). Subsequently, 37 additional instances were reported over a period of about four years. Interest in and awareness of the conditions has clearly increased.

In a review of 20 cases of metastatic lesions to the jaws, the primary sources were as follows: five each from the kidney and the lower lip, two each from the breast and sigmoid colon, and one each from the colon, prostate, and rectum (3). Others have reported similar findings (4). Metastasis from cancer in almost every organ of the body may be seen in the oral regions, although spread to other areas of the skeleton is much more common (5,6).

Histologically, adenocarcinoma is the most common malignancy metastatic to the jaws (7-10). Meyer and Shklar (7) recommended that in cases in which the primary lesion is not known, the examination should concentrate on the breast in the female patient, the prostate in the male patient, and the gastrointestinal tract, thyroid, and parotid gland in both sexes.

Signs and symptoms of metastatic tumors to the mouth and jaw include pain, swelling, numbness of the affected jaw, and loosening of teeth. Unusual loosening of teeth in a mouth not significantly involved by periodontitis is an important clue to the diagnosis (7). Local swelling occurs in every patient but varies from minor gingival enlargement to massive swelling with distortion of normal facial contours. Pain is not a constant finding, but varying degrees of numbness occur in most patients (3). In our case, the only symptom was a tingling sensation of the right tongue and lip region. The symptom was consistent with a lesion located in the area of the mental and the inferior alveolar nerves.

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Fig 1—Chest x-ray reveals a coin lesion in the right upper lung field (arrow).

Fig 2—Lung tomograms. The mass lesion in the upper lung field proved to be squamous cell carcinoma on biopsy.

Fig 3—Transbronchial biopsy of the large, bulky tumor obstructing the right intermediate bronchus. Dense inflammatory reaction is associated with a nest of infiltrating tumor cells (hematoxylin-eosin stain, X40).

Fig 4—High-power view showing invasive keratinizing squamous cell carcinoma (hematoxylin-eosin stain, X200).

Invasion of the nerve sheaths would produce paresthesias of the tongue and lip.

Dissemination of tumors to the oral regions from a distant point occurs only as blood-borne or lymph-borne emboli. Metastasis by means of the lymphatic system is probably the most common method of dissemination of malignant disease. Some investigators believe that tumor cells traverse the lymphatic vessels by means of their own ameboid movement, whereas others consider the slow, suction-like action of the lymph current to be the chief means of movement. Tumor cells may be carried from regional nodes to the thoracic duct and subsequently into the lungs and the systemic circulation. Once malignant cells are in the systemic circulation, they can be carried to almost any part of the body.

Although numerous malignant cells may be present in the blood, only certain sites are commonly involved with secondary malignant growth. The distribution of blood-borne metastases is determined in part by chance, by the physical characteristics of the circulation, and by the characteristics of various tissues. Perhaps the reason the jaws are rarely affected by metastases is that they contain less red marrow and are less vascular than some of the skeleton. In the age range of most cancer patients, red bone marrow is virtually absent in the jaws.

To evaluate a patient with possible metastatic disease to the jaw, a Panorex film should be obtained in addition to skull x-rays. Posteroanterior or lateral views of the jaws may be required to determine the location and full extent of a lesion. Metastatic tumors in bone may be either osteoblastic or osteolytic. The
most common osteoblastic lesions originate from primary lesions in the prostate. Metastases from the breast may be either osteolytic or osteoblastic. In young adults, osseous lesions are likely to be either primary tumors or other conditions; in patients more than 30 years of age, metastatic tumors must be considered likely.

The margins of radiolucent lesions may present irregular scalloped patterns. In cases of involvement around the teeth, radiographic findings simulate periapical lesions.

In our case, there was no x-ray evidence of a bony lesion (Fig 5). However, the soft tissue of the isthmus falcis and the oropharynx were involved with squamous cell carcinoma.

Treatment of malignant tumors metastatic to the mouth and jaws may include surgery, radiation, chemotherapy, and hormone therapy. If the primary lesion appears to be controlled and other metastatic foci are not apparent, surgical resection of a solitary mandibular metastasis can be performed. For palliation, radiation is used more frequently than is surgery. Best results are obtained in cases of metastases from breast cancer, when hormone therapy can be combined with radiation. This combination is also effective in the treatment of metastatic prostatic cancer (11,12). Chemotherapy has not been adequately evaluated in the management of metastases to the mouth and jaws, but preliminary studies are not encouraging.

The prognosis is very grave for patients with metastases to the oral cavity and jaws. Frequently, other metastases are present or develop soon in the lymph nodes, other bones, lungs, liver, spleen, or kidneys. In one series (3), eight of the 13 treated patients died of their malignant disease, although the lives of two were probably prolonged. When the primary site of the tumor can be treated, management of the metastatic lesion in the jaw or adjacent soft tissues can at least prolong life. Hemimandibulectomy and radiation either singly or in combination can be palliative and may even effect a cure. Resection can be considered only for the relief of pain.

References