Small Cell Carcinoma of the Lung with Mandible Metastasis

Mandibula Metastazlı Küçük Hücreli Akciğer Kasınomu

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ABSTRACT

A case of metastatic small cell lung carcinoma (SCLC) of the mandible in a 53-year-old man has been presented here. The patient suffered from increased mobility of his premolar teeth with painful swelling of the lower right mandible while staging procedures had been ongoing. After extraction of the teeth, curettage was performed and histopathological examination revealed similar findings to those found in the lung tumor. This case report emphasizes that the oral symptoms in a patient with lung cancer may point to a metastatic event even if it is very rare in SCLC.

Key words: Mandible, metastasis, small cell lung cancer

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CASE

A 53 year old man was admitted to pulmonology department with dyspnea on exercise, non-productive cough, and weight loss. He had a history of 50 pack-year of smoking. Physical examination revealed dullness on percussion and decreased respiratory sounds on auscultation over the lower part of the right hemithorax. Tubersulf on auscultation was heard over the mid part of the right anterior hemithorax. The laboratory profile was within normal limits except for elevated erythrocyte sedimentation rate (62 mm/h).

A CT scan of the chest confirmed a mass lesion in the right hilum surrounding right main pulmonary artery and obstructing right upper lobe bronchus, multiple mediastinal lymphadenopathy, and minimal pleural effusion at right hemithorax. Although CT scan of the cranium was in normal limits abdominal tomography documented multiple hyperdens hepatic intraparenchymal nodules and a few paraaortic lymphadenopathy. A ⁹⁹ᵐTc-MDP bone scan revealed abnormally high uptake in the right eighth rib. Histopathologic examination of bronchoscopic biopsies taken from the submucosal lesion infiltrating to the right upper lobe bronchus showed small cell lung carcinoma.
After admission, he consulted with the Department of Oral and Maxillofacial Surgery at our university, due to complaint of toothache with swelling of right mandibular gingiva and loosening of premolar teeth. The panoramic and periapical radiographies revealed a radiolucency area with 1x1.5 cm. involving radical apex of the teeth (Figure 1a - b).

The extraction of the teeth and local curettage was done due to periodontal and apical destruction on premolar teeth of the right side mandible. Healing period was uneventful. Histopathologically, the tumor was infiltrating the bone trabecules with extensive crush artifact (Figure 2a). The tumor cells were small with ill defined cell borders and irregular shaped hyperchromatic nuclei with inconspicuous nucleoli. Immunhistochemical analyses showed that the tumor cells were positive for synaptophysin (Figure 2b) and Pan CK, but negative for LCA, Desmin, CD3, and CD20. According to these findings the tumor was considered as metastasis from small cell carcinoma. The patient was considered to have advanced stage of the disease and cisplatin-based chemotherapy protocol as a palliative treatment was started. Although a partial regression of the both primary tumor and gingival metastasis was observed, the diseases relapsed and the patient died nine months after the diagnosis.

DISCUSSION
Metastasizing is a complex process that the tumor cells have to detach from the primary tumor, and then they must spread in the tissue, invade the blood or lymphatic vessels, and survive travel in the circulation. After this they have to settle in the microvasculature of the organ, extravasate through the vessel wall, invade the target organ, and proliferate within the target tissue [4].

Metastases of internal cancers to the oral cavity are unusual. Meyer and Shklar reviewed 2400 oral malignancies during a 12 year period and found only 25 metastatic tumors; this figure represents 1% of oral malignancies [5].

In most cases, oral metastases involve maxilla and mandible rather than soft tissues, and according to Lim et al the most frequently metastasized site in jawbones was the molar area of the mandible, followed by the ramus, mandibular angle, retromolar trigone and condyle. In oral soft tissues, gingiva, especially in the lower anterior region, is the most affected site [6].

The lower incidence of jaw metastasis is thought to be because the jaw has less cancellous bone than do other bones [7,8]. The mechanism of spread to the jaws is usually hematogenous from the primary visceral neoplasm. The premolar-molar region is the most common localization, due to a predominance of red bone marrow and the slowing-down of the circulation in this area [9].

In a review of the literature primary carcinomas reported to metastasize to the jaws include those of the breast, lung, liver, colon, and prostate [10,11]. The primary site is different between the genders: for women, breast followed by the adrenal, colo-rectum, female genital organs and thyroid; for men, the lung, followed by the prostate, kidney, bone and adrenal [12]. A retrospective analysis of 41 Korean patients reported by Lim et al showed more frequent jawbone metastases (23 cases) than metastases in oral soft tissues (18 cases). Eight out of 9 lung tumors metastasized to the jaws, the lung being the most common primary site for jawbone metastases, followed by the liver (6 cases) and thyroid (4 cases) [6].

The signs and symptoms of jaw metastases are non-specific. Slightly discomfort or pain, swelling, numb chin syndrome, bone swelling, gingival mass, even though a pathologic fracture may be clinically evident. Metastatic lesions are generally determined after the detection of primary tumor; they may be the first symptom of generalized malignant disease in approximately 30% of cases [13]. In our case primary lesion and mandibular metastasis were detected simultaneously, and mandibular metastasis probably grew up from the periapical region, resorbed the alveolar bone and then infiltrated to the gingival soft tissue around right premolar teeth.

There is no patognomonic features of mandibular metastases, most of them may be osteolytic and appear as radiolucencies, like in our case; less frequently, they can be osteoblastic and appear radiopaque. One of the series showed radiolucent defect on conventional X-ray in only two of the nine patients [14]. Although, whole body bone scintigraphy usually shows an increased tracer uptake in the affected area and can detect widespread disease, we couldn’t demonstrate increased tracer accumulation at the mandible with this procedure.

Metastasis from internal neoplasms should be considered among other differential diagnoses in the evaluation of gingival and mandibular tumors as well as the periapical radiolucencies. In the present case, onset of oral lesion was concurrent with the detection of the primary lung tumor. As these types of lesions may be the first sign of the malign diseases, dental practionars should be aware of the condition and histopathological examination must be performed especially in periapical radiolucencies with ill-defined borders. Systemic evaluation including oral examination is essential in malignant cases and all positive treatment modalities should be done to relieve complications in the mouth, even if the prognosis of the primary tumors remains unfavorable.
REFERENCES