Mucinous Adenocarcinoma of Lung Presenting as Oral Metastases: A Case Report and Literature Review

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Abstract

Background: Metastasis of a malignant tumor to the oral cavity is rare and can indicate an unknown primary tumor. **Methods:** Described is a case of metastatic tumor in the right jaw. The patient was a 50-year-old woman who consulted her dentist with complaints of tooth pain and an abscess. The clinical examination showed an abscess around the mandibular right first molar and second premolar tooth. Teeth were extracted and two periapical, nontypical cystic lesions were excised. **Results:** The histopathological analysis revealed mucinous malignant cells embedded in an inflammatory infiltration and fibrinous tissue. The diagnosis was metastatic mucinous adenocarcinoma. The lesion at the apex of teeth was the initial presenting site of the patient's lung cancer. There was no other site of metastasis. **Conclusions:** There are typical dental apical cysts that do not usually require a histopathological examination, but mucinous and nontypical cysts must be sent for a histopathological examination. The case emphasizes the important role of dentists in diagnosing metastatic oral lesions and shows that even apparently benign atypical lesions in healthy patients need to be examined histopathogically. *(J Endod 2011;37:110–113)*

Key Words

Mucinous adenocarcinoma, oral cavity, periodontium, positron emission tomography

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Metastases of malignant tumors to oral regions are far less common than primary lesions. Only 1% of oral tumors are metastatic; the majority of these are jaw lesions. Metastasis to gingival and other soft tissues is very rare. However, a lesion in the oral cavity may be an initial indicator of a systemic malignancy.

We present a female patient who had an isolated metastatic lesion to the periapical region as a first evidence of her lung cancer. In the literature, lung cancer cases metastatic to the oral region are described mostly in male patients. Therefore, this case was rare both in that it concerned a female patient and in that it described mucinous oral metastases from an adenocarcinoma of the lung. To the best of our knowledge, this was the second such case (1).

Case Report

The case was a 50-year-old woman who had no habit of smoking and no history of medical problems. She complained of swelling and slight pain in the right lower mandible and consulted her dentist. An intraoral examination revealed previous root canal therapy at the right first molar and crown placement at the right first molar and the second premolar tooth. At clinical examination, there was a luxation of the whole bridge, especially at the first molar area, along with the abscess.

Radiographs showed a 12-mm bony defect on the mesial aspect of the mandibular first molar (Fig. 1) and bone resorbtion in the periapical regions of the second premolar and first molar extending to the buccal side (Figs. 1 and 2). After local anesthesia, the abscess was incised, and the apparent infection was drained. After antibiotic treatment for several days, the luxated crowns were removed. The first molar, which was endodontically treated years ago, and the second premolar tooth were extracted. The area was thoroughly curetted. Two white-gray–colored round, mucinous cysts, not typical radicular cysts, each close to 1 cm, were removed from the periapical region of the first molar tooth.

The histological examination showed epithelium at the surface. Under the epithelium, there was an irregular fibrinous component and heavy inflammatory infiltration consisting of lymphoplasmocytic cells. Within and adjacent to the fibrinous tissue, there was a tumor consisting of adenoid structures of columnar epithelial cells with prominent nuclei. Papillary structures and mucus were found within the lumen of the adenoid tissue (Fig. 3).

The patient was referred to an oncologist who requested a positron emission tomographic (PET) scan to study the whole body in one session, to search for the primary tumor, and to assess the extent of the disease. The PET scan showed a hypermetabolic 5-cm tumor mass and a 2-cm adjacent satellite lung lesion within the right upper lung. No additional lesions were seen throughout the whole body (Fig. 4). The patient underwent an upper lobectomy. A primary mucinous adenocancer was diagnosed on the histopathological examination. Subsequently, the patient underwent partial right mandibular resection and reconstruction with metallic plate. The patient died of metastases after 1 year.

Discussion

The early clinical manifestation of a metastatic lesion can resemble a hyperplastic, exophytic lesion such as pyogenic granuloma or epulis. Malignant cysyts can appear as infected benign cysts. It can be difficult to differentially diagnose benign and malignant lesions on a clinical basis, judging from symptoms and appearance. Sometimes,

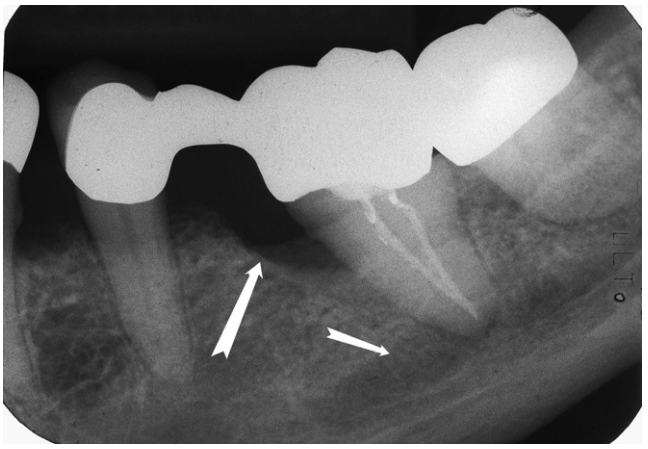

Figure 1. A radiograph revealing the endodontically treated right lower first molar tooth. A 12-mm bone defect on the mesial aspect of the first molar (arrow) and bone resorbtion were noted (small arrow).

aggressive and malignant tumors (carcinomas and sarcomas) are hidden beneath lesions that seem benign. Given this, a routine histopathologic examination of all tissues is important.

Our case is unusual in a number of aspects. First, the patient consulted her dentist for jaw pain and did not complain of other medical or pulmonary symptoms. Second, there was swelling on the right lower jaw, with a smooth surface resembling an abscess on the initial consultation. There was pus following the small incision of the gingival surface

Figure 2. After the curettage, an X-ray view shows the appearance of the mandible. Bone resorbtion extended to the buccal side.

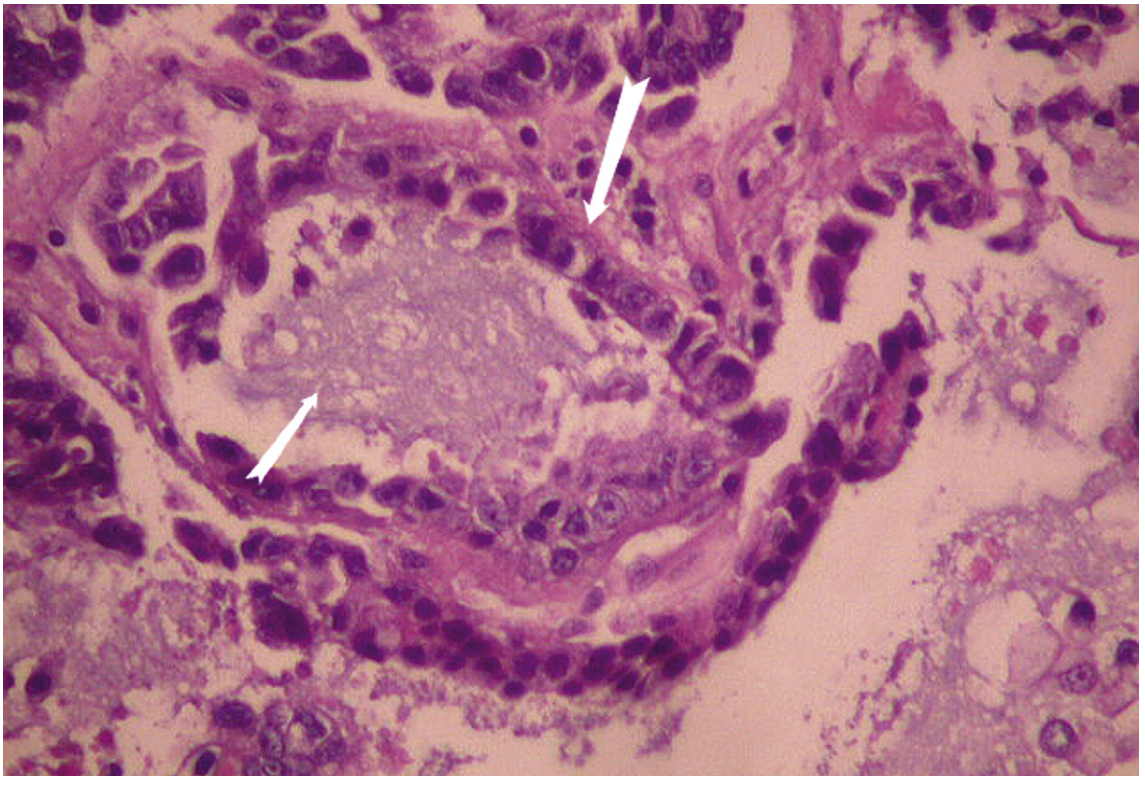

Figure 3. A photomicrograph of the lesion shows a tumor consisting of adenoid structures with columnar epithelial cells with prominent nuclei (arrow). Within the lumen of adenoid tissue, mucus was present (hematoxylin-eosin stain, original magnification $\times 300$).

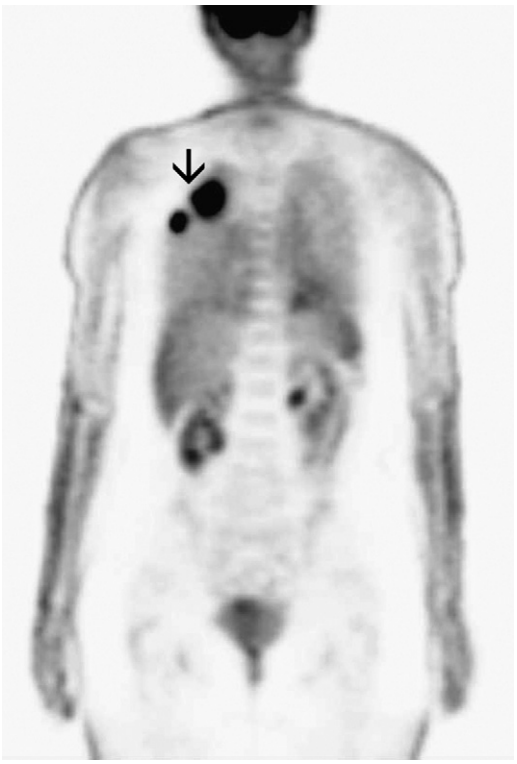

Figure 4. A whole body FDG-PET scan (Siemens Ecat-Exact HR, Siemens USA, Washington DC) shows a markedly hypermetabolic, 5-cm tumor mass and an adjacent 3-cm satellite tumor mass in the right upper lung parenchyma, which was confirmed to be a primary lung cancer after lobectomy (arrows).

indicating periodontal infection. After antibiotic treatment, pain and swelling reduced minimally. Luxated crowns were then removed. Unusual but benign-looking mucinous cysts were curetted and proven to harbor metastasis. Third, in the cases discussed in the literature, there were multiple metastatic sites throughout the body in addition to oral cavity metastases and primary tumor. In our case, the metastasis to the tooth root was the only metastatic site. Fourth, most of the previous cases described as metastases to the oral region from a lung carcinoma consisted of male patients.

Metastasis around dental implants has been reported before (2). Local factors have an influence on the growth of metastasis; trauma has been observed to facilitate the growth of blood-borne metastasis. Teeth with chronic inflammation or prior surgeries could be a factor associated with the spread of tumors (3, 4).

After a thorough literature search, we encountered one case previously reported with a mucinous adenocarcinoma metastatic to the oral cavity. The patient was a 75-year-old man who had a history of smoking. Metastases to gingiva followed the diagnosis of the primary cancer (1).

A review of literature included cases reported between 1926 and 1992 (4). Of 55 patients, the most common primary tumor sites were the lung, breast, and colon. Breast cancer in females and lung cancer in males are the most common malignant tumors metastasizing to the oral mucosa. Other sites, which rarely metastasize to the oral cavity, include primary female genitals, bone, skin, esophagus, eye, thyroid, liver, kidney, prostate, bladder, testes, and stomach (4–9). Metastatic lesion was the first sign of the systemic malignant disease in 35% of patients. In 65% of cases, the metastasis was diagnosed in the presence of a known cancer. Most patients complained of swelling and pain, and some complained of lower-lip numbness. Radiographic findings were evident in most cases. In 91% of cases, the tumors were epithelial; the remaining 9% were mesenchymal in origin. Case reports and reviews on metastatic lesions in the oral cavity have been reported since 1993 (10–35).

In the majority of cases in the literature, metastases to the oral cavity occurred after the patients' diagnosis with primary cancer. On the contrary, our patient initially presented with tooth pain and was diagnosed with an isolated metastatic mucinous adenocarcinoma in the periapical region. She had no known primary cancer and was asymptomatic at the time of presentation. The PET scan showed primary lung cancer and no additional metastasis (36–40). Subsequently, the patient had surgery followed by systemic chemotherapy and died a year later. The prognosis of patients with malignant metastatic tumors in the oral cavity is poor, with the mean time from diagnosis to death being short.

Conclusions

Benign-looking cysts can be an indication of metastases from other parts of the body.

In our case, the primary lung cancer would have been missed in this otherwise asymptomatic patient if the dentist had not submitted the tissues to a histopathologic examination. This clinical case shows us the importance of the dentist and his/her investigation. After the examination, dentists usually perform the scratch, and, subsequently, all infected tissues and cysts are usually thrown away. However, if some atypical changes in the oral cavity are present, it is important to do further tests and examinations.

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