

BRONCHOGENIC CARCINOMA METASTATIC TO THE MANDIBLE — REPORT OF A CASE

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A 49-year-old woman complaining of painful swelling of the right submandibular area and diplopia was referred to the dental clinic of Kaohsiung Medical College Hospital. A well-defined radiolucent lesion was noted at the ramus of the right mandible. This lesion was diagnosed histopathologically as a metastatic papillary adenocarcinoma of the lung to the mandible. The clinical symptoms and signs emphasized the possibility of a metastatic tumor to the jaw bone which might be the initial manifestation of a distant primary malignancy.

Key words: bronchogenic carcinoma, metastasis, jaw-bone

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Malignant tumors metastatic to the jaws and the oral cavity are quite uncommon⁽¹⁾. Because jaws and oral tissues are not routinely studied at biopsy, conceivably such malignancies are more common than statistics indicate⁽²⁾, which is approximately 1 percent of all malignant tumors of the oral cavity. If the primary malignant tumors are in readily diagnosed by a competent dentist or physician. However, if primary lesions are located in inaccessible regions, it would be a real challenge to a clinician. Clausen and Poulsen⁽³⁾ described acceptable criteria for a metastatic tumors to the jaw bone as follows: 1) a provided primary tumor with histopathologic confirmation and roentgenographic evidence; 2) maxillary, mandibular or mucosal metastasis with histopathologic confirmation and roentgenographic evidence; 3) histopathologic correlation of metastatic lesion; 4) in the event of a primary lesion anatomically near the metastasis, direct extension must be ruled out by a wide, clear margin around the primary site, with no tumor tissue present between the two foci.

In the paper, we report a case of bronchogenic carcinoma of the lung with a metastatic

tumor in the mandible as the initial manifestation of the disease. This report will also provide additional information which justifies a thorough search of possible primary tumors in oral carcinoma patients.

CASE PRESENTATION

A 49-year-old woman came to our dental clinic on July 12, 1985, complaining of painful swelling of the right submandibular area, diplopia and headach in the temporal region for two months. According to her statement, she had previously consulted her local physician. He had prescribed antibiotic therapy, and the symptoms and signs had subsided; however, a painful swelling of the right submandibular area, diplopia and blurred vision suddenly developed 4 days prior to her visit to our ophthalmic department. The ophthalmic department made an impression of a maxillary sinus polyp, and referred the patient to our dental clinic for further evaluation. Oral examination revealed swelling at the right submandibular area. The consistence of the swelling was firm and it measured about 3.0 × 3.0 cm in diameter. Panoramic (Fig. 1) and P.A. roentgraphs of the skull (Fig. 2) revealed a monocular radiolucency with an irregular border at the ramus of the

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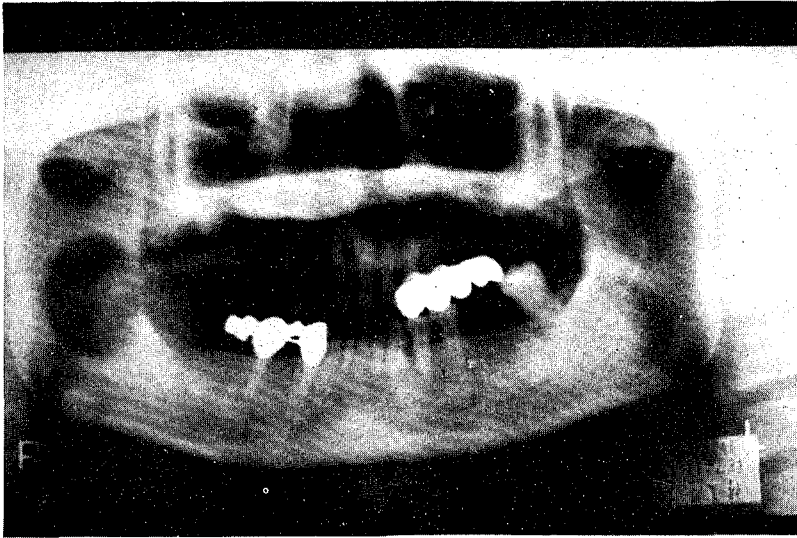


Fig. 1. Panoramic radiograph revealed a monolocular radiolucency with irregular border at the ramus of the right mandible.

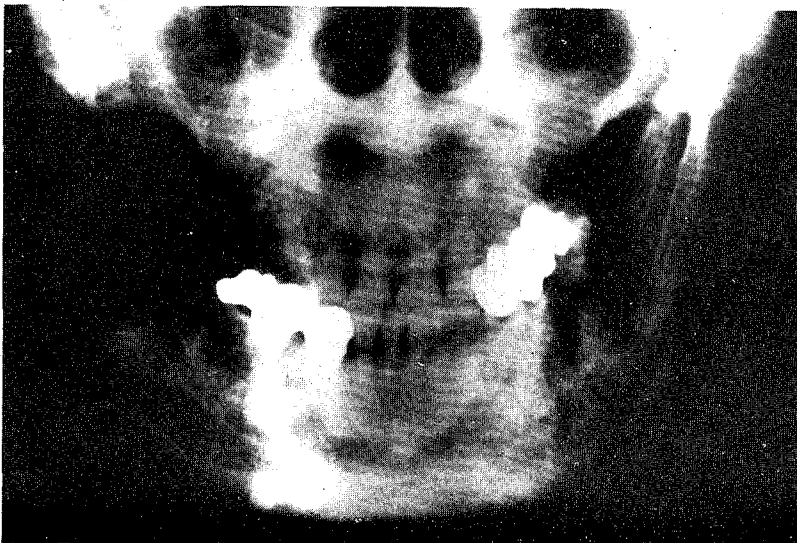


Fig. 2. Posteroanterior radiograph showing osseous destruction of ramus of the right mandible.

right mandible. The histopathologic findings of an incisional biopsy specimen from the radiolucent area showed scattered clusters of pleomorphic epithelial cells with large hyperchromatic nuclei in acini-like glandular pat-

terns (Figs. 3–4). A diagnosis of metastatic adenocarcinoma was made and the patient was referred to our internal medicine department for further investigation.

On August 12, 1985, a chest roentgeno-

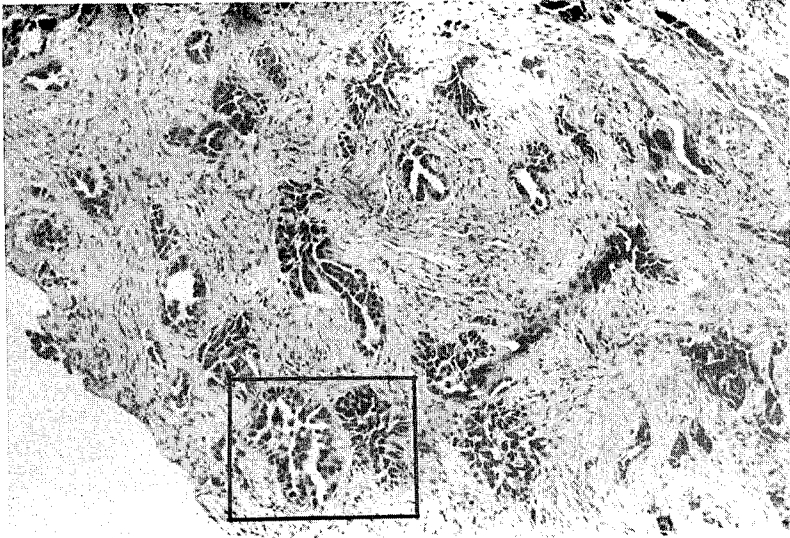


Fig. 3. Low-power view of the biopsy specimen from the radiolucent area (Fig. 1). Numerous cords and glandular structure are apparent ($\times 100$)

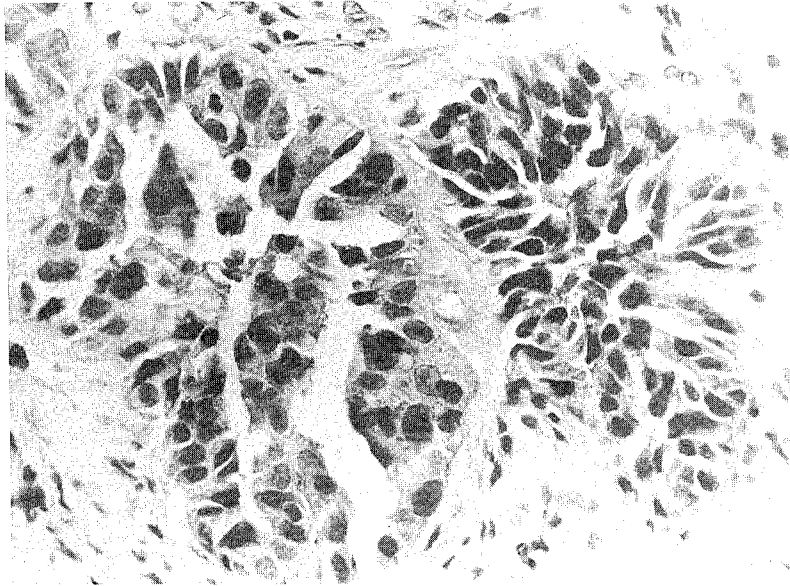


Fig. 4. High-power view of the outlined area in Fig. 3 showing clusters of pleomorphic epithelial cells with large, hyperchromatic nuclei. ($\times 400$)

graphy revealed a mass on the anterior segment of the left upper lobe of the lung (Fig. 5). A small tissue fragment was taken by bronchoscopic biopsy which revealed pleomorphic, hyperchromatic epithelial cells

similar to the picture of the tissue from the ramus of the right mandible (Figs. 6–7). The diagnosis was a papillary adenocarcinoma of the lung.

On August 14, a bone scanning revealed

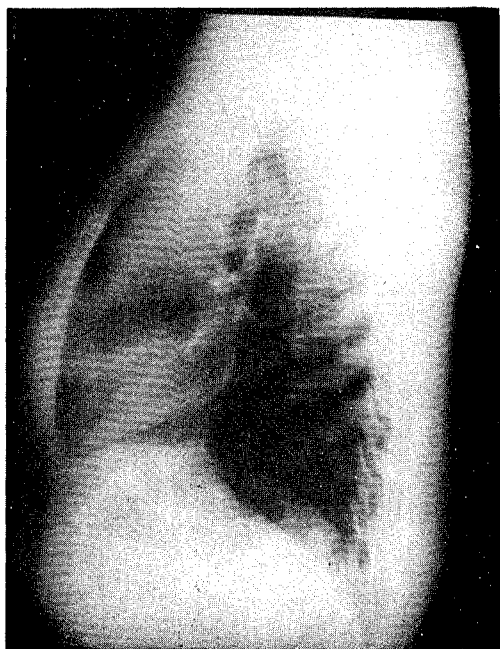


Fig. 5. Chest X-ray with appearance suggestive of a mass in the anterior segment of left upper lobe of the lung.

an abnormal uptake of radionuclides at the bony regions of the parietal area, posterior of the right maxilla and mandible, left upper aspect of sacrum and the 4th segment of lumbar vertebra (Fig. 8).

On August 21, CT scanning revealed a suspected lesion of tumor metastatic to the left thalamus and tumor emboli appeared in the parietal branch of the middle cerebral artery (Fig. 9).

On August 23, the patient received one course of systemic chemotherapy consisting of endoxan, adriamycin and cis-platinum.

On August 29, she began receiving radiotherapy on the cranium and the ramus of the mandible. The total dosage was 4,000 rads on the brain, 2,000 rads on the lung, and 4,800 rads on the mandible respectively.

The condition of the patient stabilized, and she was discharged on October 30, 1985, but is scheduled for intense follow-up.

DISCUSSION

Metastatic spread of malignant tumors to the oral mucosa, maxilla or mandible from

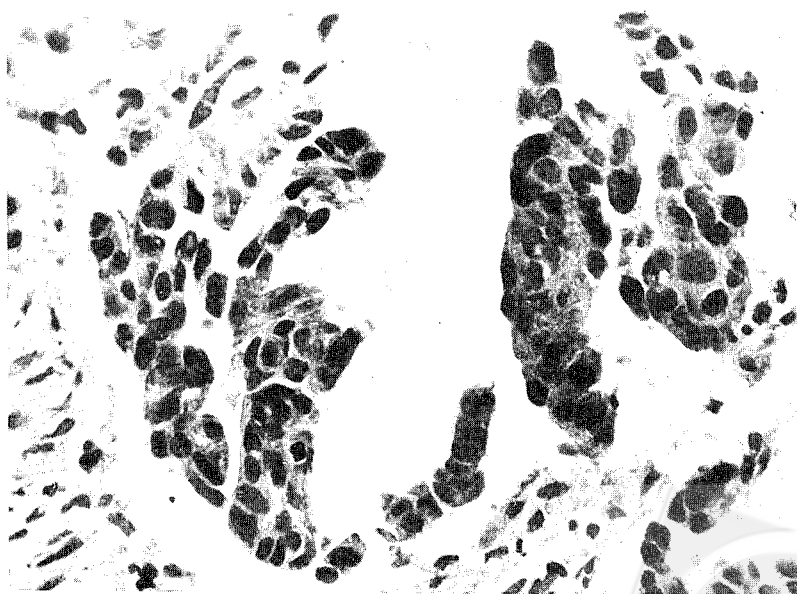


Fig. 6. Low-power view of bronchoscopic biopsy specimen showing linear cords and islands of primary bronchogenic adenocarcinoma. ($\times 100$)

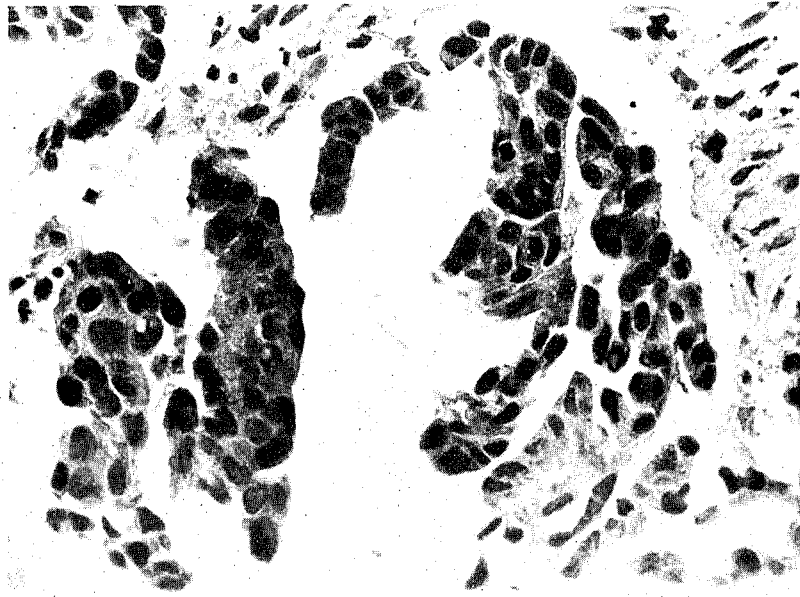


Fig. 7. High-power view of the outlined area in Fig. 6 showing similar pleomorphic epithelial cells with large, hyperchromatic nuclei as seen in Fig. 4. ($\times 400$)

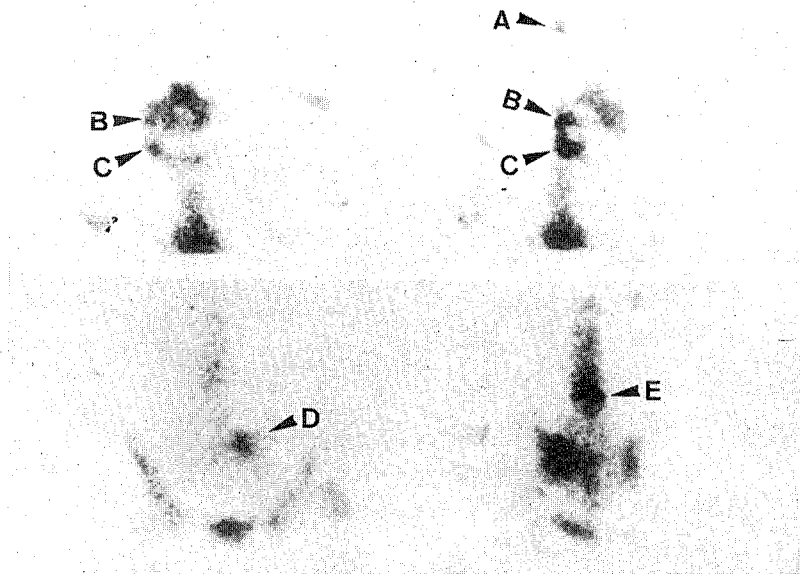


Fig. 8. Bone scanning showing increased uptake of radionuclide in bony regions of parietal area (A), posterior of the right maxilla (B) and mandible (C), left upper sacrum (D) and L4 (E).

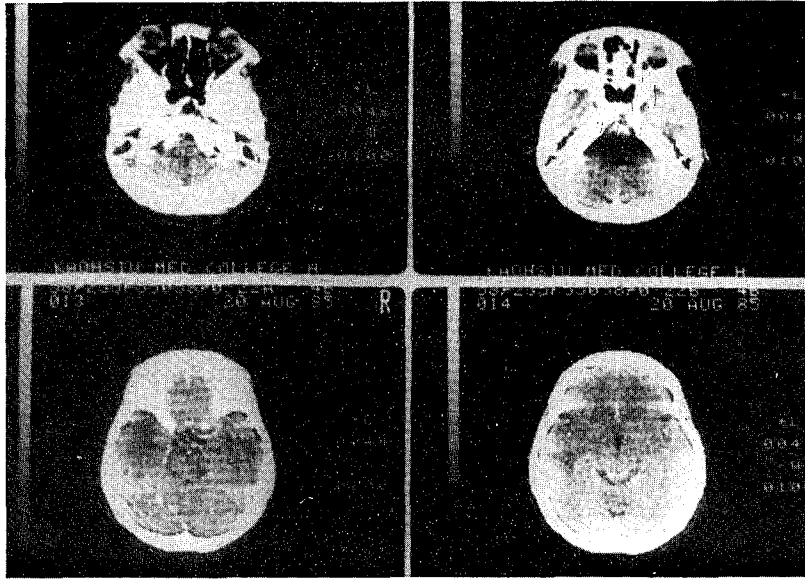


Fig. 9. Tumor metastatic to the left thalamus and tumor emboli in parietal branch of the middle cerebral artery.

distant primary lesion is rare^(1,4). Major sites of primary lesions are frequently the breast, lung, or kidney⁽³⁾. At some stage, malignant tumors will produce metastases. The two most common possible routes for secondary deposits from a primary growth to a distant organ are hematogenous and lymphatic. The process of metastasis or seeding is attributed largely to the dissemination of clumps of tumor cells or a thrombus containing viable tumor cells. Factors which contribute to metastatic deposition and viability of tumor emboli are 1) size of the tumor emboli, 2) vascular architecture, and 3) biochemical and other environmental factors in various tissues⁽⁵⁾. In the mouth and jaw-bone region, the body and ramus of the mandible are the preferential sites for metastasis, possibly because there is a greater arterial supply to these regions⁽⁶⁾.

The most common symptoms and signs caused by metastatic lesions of the mandible are paresthesia, rapid swelling, expansion of the jaw, pain, loosening of the teeth and numbness of the affected jaw^(3,7-9). However, our patient had only a rapid painful swelling of the right submandibular area, making it

more difficult and unlikely for a dentist to consider the possibility of a correctly diagnosing metastatic tumor of the jaw bone.

Correct diagnosis is further complicated because such osteolytic metastatic lesions of the mandible can mimic bone infections; granuloma of the bone, benign tumors, primary tumors with or without extension to the adjacent tissue, systemic disease involving the jaw bone (eg. Histiocytosis X) and jaw bone involvement in systemic malignancy (eg. multiple myeloma), fibro-osseous lesion and giant cell lesion^(6,7,10,11). The irregular border of osteolytic destruction may give some clues to the metastatic lesion. A bone scan in conjunction with abnormal uptake of radionuclide is very helpful in detecting the presence or absence of the other sites of bony involvement of the primary tumor. In this case, multiple lesions existed in the parietal bone, maxilla, mandible, upper left aspect of sacrum, and the 4th segment of lumbar vertebra. The prognosis and treatment vary with the nature of the primary lesion. A metastatic oral lesion is not of immediate concern unless the primary lesion can be controlled and diagnostic tests confirm that

the tumor in the mouth or jaw is the only metastasis. Appropriate local radiotherapy and systemic control with chemotherapy of the oral lesion may result in a better survival rate.

Unfortunately, bronchogenic carcinoma usually has no obvious pathognomonic symptoms or signs. Detection of neoplasm is frequently made during an investigation of a complaint which is unrelated to the respiratory system.

In most cases the patient's history is an important tool in establishing a tentative diagnosis. The confirmation of any suspected lesion can only be achieved by an appropriate biopsy.

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下顎骨轉移性支氣管源癌：病例報告

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惡性腫瘤轉移至顎骨或口腔組織為罕見的病例，其發生約為口腔區惡性腫瘤的百分之一。若是原發腫瘤發生於易察覺部位，診斷上不造成困擾，反之若是以在轉移區出現症狀，並且不具有與原發腫瘤相關之病徵，則對於醫師的正確診斷頗具挑戰性。本報告為一49歲女性患者，由於右側下顎區有一大小約為3.0 × 3.0

公分的疼痛腫脹，於民國七十四年七月，至高雄醫學院附設中和紀念醫院牙科求診，環口放射線檢查顯示右側下顎骨枝體有一邊緣不規則的單房性放射線透過性病灶，活體組織切片檢查，發現為原發性支氣管源癌，而以在下顎骨之轉移病灶出現臨床症狀，且已併發多重轉移至左側視丘、腰椎及髓骨。