

A rare case of mandibular metastasis in adenocarcinoma of lung

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ABSTRACT

Mandibular metastasis may give an important clue to the diagnosis of an underlying occult malignancy. A 70-year-old female presented with painful swelling of right jaw for last 4 months and right-sided chest pain for last 1 month. CT scan thorax showed homogenous mass lesion in right lower lobe. FNAC from radiographically evident osteolytic lesion in mandible was suggestive of metastatic carcinoma. CT-guided trucut biopsy with immunohistochemistry from lung mass revealed primary adenocarcinoma of lung. Patient received palliative chemo-radiation for her advanced stage of cancer.

Key words: Adenocarcinoma lung, mandible, metastasis

INTRODUCTION

Metastasis to oral tissues are rare, which represent 1% of all oral malignancies.^[1] Most common sites of primary tumor metastasizing to mandible are breast, lung, adrenal, kidney, gastrointestinal tract, and prostate respectively. Most common site of metastasis in the oral cavity is the body of the mandible, especially the premolar-molar region.^[1] Mandibular metastasis may be the first presenting feature of underlying occult malignancy of another primary site, but it is rare. Here, we report a case of pulmonary adenocarcinoma who presented primarily with swelling of jaw.

CASE REPORT

A 70-year-old female presented with painful swelling in the right side of the jaw for last 2 months. She noticed the swelling 2 months back after right upper 2nd molar tooth extraction for pain and mobility. The swelling increased gradually to reach the present state. Patient also gave

history of right-sided chest pain for last 1 month. Chest pain was dull aching in nature without any aggravating and relieving factor. There was no history of smoking, betel nut chewing, and alcohol consumption. On examination, a firm diffuse swelling (4 cm × 3 cm) was noticed in the retromolar region extending to the ramus of the right side of the mandible. On palpation, bicortical expansion of the ramus of the mandible was noted. There was an erythematous change over the retromolar region and adjacent buccal mucosa in intraoral examination. X-ray OPG view showed an ill-defined osteolytic lesion in ramus of the mandible involving retromolar trigone along with involvement of coronoid process. X-ray chest PA view revealed homogenous opacity silhouetting the right heart border at cardiophrenic angle with upward concavity likely due to collapse of medial basal segment. Contrast-enhanced CT thorax showed homogenous mass lesion in right lower lobe. FNAC (Fine needle aspiration cytology) from mandibular osteolytic lesion showed plenty of epithelial cells in acinar pattern, suggestive of metastatic carcinoma [Figure 1a]. For evaluation of primary, patient was advised fiberoptic bronchoscopy. But, patient did not give consent to the procedure. CT-guided true cut biopsy from right lower lobar mass revealed highly cellular smear of atypical epithelial cells with mild to moderate pleomorphism and hyperchromatic nuclei in cluster and papillae, suggestive of poorly differentiated adenocarcinoma [Figure 1b]. The tumor cells stained positive for epithelial membrane antigen, pancytokeratin, thyroid transcription factor 1, and

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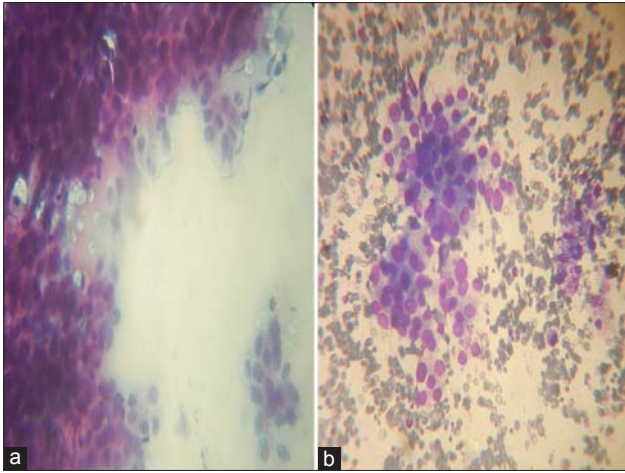


Figure 1: Fine needle aspiration cytology of jaw swelling (a) showing epithelial cells in acinar pattern, suggestive of metastatic carcinoma and trucut biopsy from right lung mass showing atypical epithelial cells with pleomorphism and hyperchromatic nuclei in cluster suggestive of poorly differentiated adenocarcinoma (x200, H and E)

cytokeratins 8 and 7 [Figure 2a and b]. Testing for epidermal growth factor receptor mutation and amplification was negative. These findings confirmed the diagnosis of a primary lung adenocarcinoma. Patient was considered to have an advanced stage of the disease, and cisplatin-based palliative chemotherapy with radiotherapy of the metastatic mandibular lesion was given.

DISCUSSION

Although many primary neoplasm commonly metastasize to bones, metastasis to jaw bones are fairly uncommon.^[2] 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.^[1] As they are rare, they are difficult to diagnose. Metastatic tumors to the oral region are common in patients aged 40 to 70 years.^[2] Amount of red bone marrow and blood vessels in the jaw bones tends to decrease with age due to the gradual replacement of red marrow with yellow or fatty marrow.^[3] This is why jaw metastasis is less common than other bones. Among jaw bones, metastasis to mandible is more common than maxilla; premolar-molar being involved predominantly.^[4] As the mode of metastasis is hematogenous, neoplastic cells gets deposited in rich vascular hematopoietic tissues of the region. A decreased flow of blood may contribute to deposition of neoplastic cells. The most common primary sites in order of frequency are the breast (21.8%) followed by lung (12.6%), adrenal (8.7%), kidney (7.9%), bone (7.4%), colo-rectum (6.6%), and prostate (5.6%).^[2] Symptoms of metastatic jaw tumors may give an important clue to of an underlying occult primary malignancy. Metastatic lesions are generally determined after the detection of primary

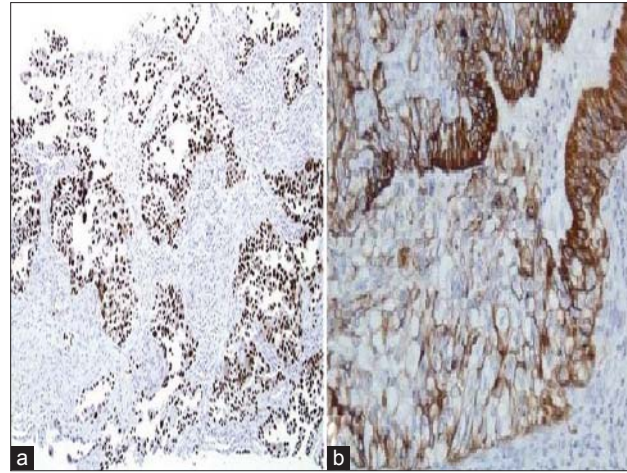


Figure 2: Immunohistochemistry staining of biopsy specimen from right lung mass showing positive staining for thyroid transcription factor 1 (a) and cytokeratin 7 (b)

tumor. In one third of patients of jaw metastasis, they are first symptom of an underlying malignancy from a primary site.^[5] Presenting features of metastatic jaw tumors are pain, swelling, mobility of teeth, delay in healing of extraction sockets, pathologic fractures or paresthesia.^[6] Pruckmayer *et al.*, evaluated 763 patients retrospectively who suffered from jaw pain as their initial presentation. Out of these, 9 patients (1.2%) was found to have metastatic disease to mandible.^[7] Radiologically, metastatic lesions are most often ill-defined and are usually osteolytic or radiolucent, although they may be osteoblastic, radiopaque mixed lesions. Possibility of a metastatic disease in the mandible should be kept in mind in patient complaining of numb chin or mental nerve neuropathy. In our patient, swelling got noticed following extraction of tooth. In a study conducted by Hirshberg, tooth extraction precede the metastasis in 55 out of the 390 cases.^[2] We should consider the differential diagnosis of metastasis from internal neoplasm in the evaluation of gingival and mandibular tumors as well as the periapical radiolucencies. There are a number of reasons behind difficulty in diagnosing metastatic tumors in jawbones such as central location of the tumor in the bone, absence of characteristic subjective symptoms, and non-specific radiological changes.^[8] As a result of which, metastatic tumors has been erroneously diagnosed as cystic lesions, benign tumors or lesions of infective and traumatic origin. A great amount of suspicion is required in elderly patients presenting with sudden onset of anesthesia or paresthesia of the lower lip. As these lesions may be the first clue of an underlying malignancy, dental practitioners should be aware of the condition, and it is necessary to perform histopathological examination, especially in periapical radiolucencies with ill-defined borders. Systemic examination including oral examination is essential in malignant cases, and best possible treatment modalities should be given to relieve complications in the mouth, even if the prognosis of the primary tumors remains

unfavorable.

We want to report the case as jaw metastasis is itself very rare. Moreover only a one third of the patients had jaw metastasis as their initial presentation. Our patient initially presented with jaw swelling, which was finally proved to be a case of pulmonary adenocarcinoma.

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