Metastatic adenocarcinoma of the mandible—a rare entity

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ABSTRACT

Metastasis of the liver and lung malignancies to the jaw bones is very rare and the mandible is the commonest site of involvement. The frequent primary sites for metastasis to jaw bones are breast in females and lungs in males. This is a case report of the metastatic adenocarcinoma of the mandible which originated from liver or lung. Diagnosis of such metastatic lesions is difficult and challenging to identify the primary site.

Keywords: Jaw tumors, malignant lesions of liver/lung, metastatic adenocarcinoma.

INTRODUCTION

Metastatic tumors of the maxillofacial region are very rare and represent only 1% of all orofacial tumors.^{1,2} Such tumors do not have specific clinical characteristics, but cause difficulties in the diagnosis of the disease, and histopathology is the only way out for confirmatory diagnosis. Usually, the metastases involve the bone, especially the mandible, particularly the angle, and the frequent primary sites are the breast, lung, kidney, colon, prostate and thyroid.³

Adenocarcinoma, primary or metastatic, of the mandible may be difficult to diagnose clinically but the real difficulty arises in identifying the primary site accurately. Whenever malignant tumor is encountered in the maxillofacial region, metastasis must be considered in the differential diagnosis.⁴

Here, we present a rare case of adenocarcinoma of the mandible to emphasize the significance of the histopathological investigations. A delay in diagnosis in such cases may lead to increased morbidity and poor prognosis.

CASE REPORT

A 50-year-old male patient attended the department with a chief complaint of swelling and intermittent pain in the left side of the mandible for the past 3 months and numbness of the lower lip for the past 1 month.

Extra-oral examination revealed a smooth swelling in the mandibular molar area, measuring 4.5×2.5 cm, hard,

fixed to the bone, and was tender. The cortical plates were expanded and the molars in the left side were mobile but vital. Submandibular lymph nodes on the affected side were just palpable.

Orthopantomogram revealed an ill-defined radiolucent lesion with small areas of radio-opacity in the left body of the mandible (Figure 1). Computed tomography (CT) scan of the abdomen demonstrated the primary site as lytic and local spread of the lesion (Figure 2).

A differential diagnosis of the lesion was made as chronic osteomyelitis, primary intraosseous malignant tumor or metastatic lesion.

Figure 1 Orthopantomogram showing osteolytic lesion in the mandible.

Figure 2 Computed tomography scan of abdomen showing malignant areas in the liver and adjoining structures.

Figure 3 Hematoxylin and eosin stain showing the presence of small gland formation (4×).

CYTOLOGY AND HISTOPATHOLOGY

Fine needle aspiration cytology from the left mandibular mass revealed the formation of acinar structures composed of round cells and abundant cytoplasm. Nuclei were eccentrically placed and showed pleomorphism, hyperchromasia and prominent nucleoli—features consistent with adenocarcinoma (Figures 3 and 4).

Histopathological examination revealed extensive fibrosis along with the formation of glandular structure which is composed of irregularly shaped small and large dilated glands, lined by neoplastic cuboidal epithelial cells with hyperchromatic nuclei, infiltrating the lamina propria and osseous tissue, focally stratified squamous epithelium of the oral cavity. Thus, the histopathological examination of the jaw tissue confirmed the lesion to be a metastatic adenocarcinoma.

A contrast-enhanced CT scan of the thorax was done to explore the primary site which revealed patchy areas in the liver and lung suggestive of malignancy. It could not be confirmed which was the primary site as both these organs were involved. To confirm this aspect, the patient was advised for lung and liver biopsy which he refused.

Figure 4 Hematoxylin and eosin stain showing the formation of the glandular structure lined by cuboidal epithelium along with some fibrosis in stroma (40×).

DISCUSSION

Metastatic jaw tumors are uncommon. The mandible is more frequent site of the secondary tumor than the maxilla and the third molar region is the most often involved area in the metastatic spread.^{4,5} In the oral cavity, metastatic tumors often do not have specific clinical characteristics. Metastasis to the jaw bones does not produce any pathognomonic characteristic. Usually, swelling, pain and/or paresthesia, loose teeth are the only notable symptoms.

Radiographical findings in bone metastasis are the characteristic. They usually appear as a lucent lesion without new bone formation within the lesion or the adjacent bone with an appearance mimicking osteomyelitis. However, the metastatic lesions of the prostate or the breast are osteoblastic; thus the tumor demonstrates a radio-opaque area.⁶

The microscopic structure of the metastatic tumor may vary greatly from that of the parent tumor, or both tumors may have an identical microstructure. In addition, a secondary tumor may appear to be more or less malignant than the primary tumor.⁷

Difficulty in recognizing metastatic tumors in jawbones arises due to similarity in the radiographical presentations with certain cystic, inflammatory and neoplastic lesions.² Very few subjective symptoms are present at the initial stage and they appear at very late stage.³ Radiographical findings are non-specific.⁸ Thus, biopsy is mandatory in such lesions.

The malignant tumors that commonly metastasize to jaw bones in women are those from the breast, adrenal gland, colorectal area, genital organs and thyroid gland.⁹ In men, most common examples are from the lung, prostate, kidney, bone and adrenal gland.¹⁰ The routes of the spread

of metastases from the primary site to the distant oral region are unclear. However, in majority of cases, it is seen that the spread takes place via the lymphatic channels but the possibility of a hematogenous spread cannot be ruled out.

The clinician must keep in mind that a malignant lesion may represent a metastasis and must ensure that the primary site of the tumor is accurately determined.

CONCLUSION

Metastatic jaw tumors are rare and without specific clinical characteristics. Any malignant lesion of the jaw should be thoroughly evaluated for its primary or secondary origin.

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