Metastatic Carcinoma of Gingiva Mimicking Pyogenic Granuloma

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Abstract A case of metastasis of lung carcinoma to mandibular gingiva in 46 year old man has been presented here. The patient suffered discomfort due to growth in the lower left molar region with occasional hemorrhage and increased mobility of his lower left molars. 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 the need to recognize that the gingival masses similar to benign or inflammatory lesions may represent an initial sign of underlying distant malignant tumors.

Keywords Pyogenic granuloma · Metastatic carcinoma · Distant metastasis

Introduction

About 1% of all oral cancers account for metastasis of primary tumors located elsewhere in the body [1]. They may manifest intraosseously or extraosseously. Metastatic tumors in the oral region mainly originate from the breast followed by lungs, kidney, thyroid gland, intestine, prostate gland, stomach, testis and bladder [1]. The histopathological picture of the oral tumor may not be identifiable as a primary oral cancer, until the primary tumor is eventually detected. Most patients with a metastatic tumor in the oral cavity have also developed metastasis at other

sites, often leaving no other option than palliation and have a poor prognosis [2]. Most patients die within 1 year of diagnosis while 4 year survival rate is estimated to be 10% [1]. In this report we describe a metastatic gingival lesion which was the first sign of adeno-squamous carcinoma of lung.

Case Report

A 46 year old male was admitted to V.S.P.M's Dental college and research center in Jan 2009 for evaluation of gingival mass in the left side of lower jaw. He noticed a small growth 1 month back and reported rapid growth of the lesion 15 days prior to his visit. Moreover the patient complained of halitosis and occasional spontaneous bleeding from the growth. He had a history of convulsions 10 days back for which he was taking antiepileptic. He was a chronic alcoholic and had ascitis and was an operated case of hernia. An exophytic mass $4 \times 2 \times 2$ cm, extending from lower left second premolar to retromolar area was seen (Fig. 1). It was pedunculated arising from interdental papilla in between lower left second and third molar. Growth was firm in consistency with irregular surface. Bleeding on provocation was present. Lower left second and third molars were grade III mobile. No paresthesia or submandibular lymphadenopathy was evident. A Panoramic radiograph revealed alveolar bone loss in left mandibular molar region (Fig. 2). Ultra-sonography (USG) Abdomen revealed liver parenchymal disease and ascitis. Clinically the differential diagnosis were pyogenic granuloma and malignant tumor. Extraction of the loose teeth, excision of lesion and local curettage was done considering it to be a pyogenic granuloma. Healing period was uneventful. Histopathologic analysis of gingival lesion

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Fig. 1 Clinical picture

Fig. 2 Preoperative OPG

Fig. 3 Histopathologic picture (H&E stain; ×40)

disclosed poorly differentiated adeno-squamous carcinoma, consistent with primary origin in the lungs (Fig. 3). Fifteen day after the procedure patient was readmitted for recurrent seizures.

Brain computer tomography (CT) Scan revealed multiple hyperdense lesions in the brain parenchyma with extensive perilesional edema predominantly in white matter. There is mass effect by the lesion and edema causing

Fig. 4 CT brain

Fig. 5 PA chest

effacement of the lateral ventricle adjacent gyri and sulcal spaces. These findings were suggestive of brain metastasis (Fig. 4). The postero-anterior (PA) Chest radiograph showed a well defined radiopacity in the right upper zone suggestive of mediastinal mass (Fig. 5). CT guided fine needle aspiration cytology (FNAC) was performed. Histopathology examination revealed epithelial cell carcinoma of lung. Biopsy could not be performed as condition of patient deteriorated. Intraoral lesion recurred and patient died one and half month after the diagnosis.

Discussion

Metastasis is an inherent potential of a malignant tumor. In the development of any metastatic lesion the tumor cell must penetrate a number of barriers. Cells detach from the

primary tumor and travel in the lymphatic or blood vessel circulation to invade and proliferate within the target recipient tissue [2]. The main mechanism proposed for metastatic spread to the oral region is backflow through the venous system. Batson accounted for the head and neck distribution of tumor cells by the valveless paravertebral venous plexus [3].

Metastasis involve the regional lymph nodes rather than distant organs. Tumors metastasizing from distant location to oral region are rather rare. A review of the pertinent literature reveals that skeletal metastasis is detected in 70–85% of patients who die of malignant disease, especially of breast, lung or prostate cancer, with only 1% of these involving the jaws [4].

Bone metastasis is more common than oral mucosal metastatic lesions. Eighty percent of the metastasis to the jaws involve the mandible and the most common location for oral metastasis is the molar and premolar regions of the mandibular bone. Remnants of active hematopoietic marrow in the posterior mandible may attract tumor cells and account for the unequal distribution of oral metastatic disease. A reduced flow of blood in the mandible could help the cells become deposited here [5]. Despite a common blood supply; the site of malignant origin influences the location of metastasis. Breast is the primary site for the carcinoma. There can be metastasis from lung kidney and jaws bones to the oral mucosa [6]. In oral cavity gingival margin of the anterior portion of the lower jaw is commonly affected.

The clinical presentation of metastatic gingival lesions differs from primary gingival cancer. Symptoms such as painful swelling, bleeding, increasing tooth mobility, delayed healing of extraction socket, pathological fracture, masticatory difficulties, trismus, dysphagia and dyspnoea, are indications of malignancy. However, the metastatic lesion resembles benign inflammatory lesions such as hyperplasia, pyogenic granuloma, hemangioma, giant cell granuloma, peripheral fibroma or fibrous epulis [1]. Metastatic lesions cause pain, easy bleeding, halitosis and interference with oral feeding. Therefore, palliative treatment for the relief of these symptoms is necessary. Variable signs and symptoms led to an erroneous diagnosis of pyogenic granuloma in this case.

It is reported that in 26.8% cases, oral metastasis are discovered before the detection of the primary tumour [1]. Although gingival metastasis occurs rarely, they may be the first sign of an aggressive underlying distant malignancy. Metastasis to the gingiva is a sign of widely disseminated disease with a poor prognosis [7]. The main treatment modalities include radiation therapy or chemotherapy. Surgical treatments are generally reserved for oral metastatic tumor that interferes with jaw function or have potential for obstructing the airway [6].

Conclusion

Metastasis from internal neoplasms should be considered among other differential diagnosis in evaluation of gingival and mandibular tumors. Oral examination including systemic evaluation is essential in malignant cases and all positive treatment modalities should be done to relieve complication in the mouth even if the prognosis of the primary tumor remains unfavorable.

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