Thyroid Carcinoma metastasising in the Mandible: A Case Report.

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Abstract: *Metastatic lesions of primary tumours, which originate in different parts of the body, comprise almost 1% of oral cancers. They are highly significant because their appearance may be the only symptom of the underlying malignancy and/or the first evidence of dissemination from the primary site. These lesions can affect either bones or soft tissues in the maxillofacial region, the most common region being the molar region of the mandible. A case of metastatic tumour of the mandible from primary follicular carcinoma thyroid and its clinical, histopathological and immunohistochemical findings are discussed.*

INTRODUCTION

Metastases in the oral tissues are rare events that constitute approximately one percent of all oral malignancies. In the oral cavity, the most common site is the body of the mandible in the premolar-molar region. These tumours are of great clinical significance since at times, their appearance may be the only symptom of an undiscovered underlying malignancy and may be the first evidence of dissemination of the known tumour from its primary site[1]. The primary site differs among genders. Breast cancer is the most frequent metastatic oral cancer in females; lung cancer followed by prostate cancer is the most frequent metastatic tumour in males[2]. The lung is the most common source of metastases to the oral soft tissues, whereas the breast is the most common source of metastatic tumours to the jaw bones. Common oral sites other than the jawbones are gingival, buccal mucosa, soft palate and tongue. Most common presenting symptoms are pain, swelling, loosening of teeth and paraesthesia[3]. Sometimes, these lesions are asymptomatic, and may be overlooked. This is particularly true when the primary malignant tumour is far advanced and the patient has symptomatic metastatic deposits elsewhere.

Here, we present a rare case of metastatic thyroid carcinoma in the mandible, thus emphasizing that metastatic tumours should be included in the differential diagnoses of such lesions. Furthermore, it is suggested that thyroid should not be excluded as the primary source of metastatic jaw lesions.

Figure 1 : *Ulceroproliferative growth in the right alveolar region of the lower jaw*

CASE REPORT

The patient was a 55 year old female who reported to the institution with the complaint of pain and swelling in the right lower face for the last 1 month, which started after the mobile teeth in the same region exfoliated spontaneously. There was uncontrolled bleeding from these sockets but the patient did not consult a dentist until a growth developed at the site. Examination revealed soft spherical swellings, 2 in the scalp region and 1 in the supra-orbital region; there was localised elevation of temperature in the same. Intra-orally, an exuberant growth was noticed in the edentulous mandibular molar region on the right side; with well defined borders, soft consistency and continuous mild bleeding.

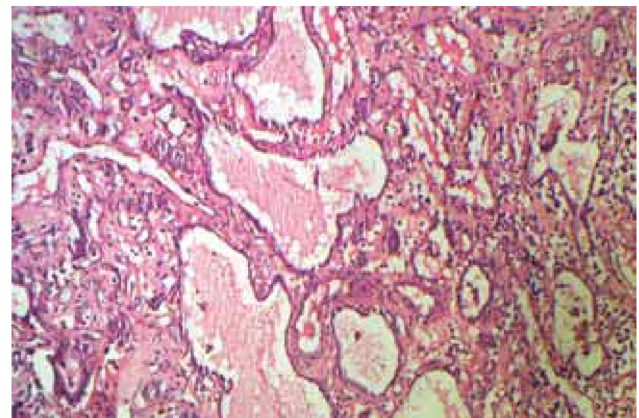

Figure 2: *H & E picture showing follicular arrangement of the malignant cells with eosinophilic secretory material (40X)*

Examination also revealed a solitary nodule in the left paramedian region in the neck; which moved on deglutition.

The patient had been diagnosed with Follicular Carcinoma Thyroid 2 years back, when she was admitted due to trauma. Investigations had revealed multiple lytic lesions in ileum, pelvis and vertebrae. Patient was advised radiotherapy, which she discontinued abruptly; had been on Morphine for the past one and a half years. Patient had also been under catheterisation for the same duration for urinary retention. Patient had been on a wheel-chair for the past 6 months.

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Radiographs revealed radiolucency in the right body and ramus of the mandible, with thinning of the lower border. Expansion and thinning of the buccal and lingual cortical plates was also evident; with intervening radiopaque septae in the radiolucency. There was radiographic evidence of osteolytic lesions in the skull, as well as mild osteoporotic changes in the long bones.

Serum acid phosphatase levels were mildly elevated (5.3 IU/L) and those of serum calcium were lower (7.2 mg/dl) than normal. Alkaline phosphatase levels were within normal range.

An incisional biopsy of the oral lesion was performed. The histopathological examination revealed cellular as well as sinusoidal like spaces which were typically lined by clear cells. Within follicle-like areas, secretory material was noticed. Most of the areas had papillae like appearance. Apart from this, connective tissue stroma showed mixture of homogenous areas, groups and nests of epithelial like cells which gave a malignant picture. The whole lesion was covered by atrophic epithelium, some of them even showed dysplastic cells but with intact basement membrane. Hence, based on the clinical features, erratic behaviour of the swelling, the histopathology is suggestive of metastatic thyroid carcinoma. Immunohistochemistry with Thyroglobulin showed the follicular cells taking up the stain, confirming the histopathological diagnosis.

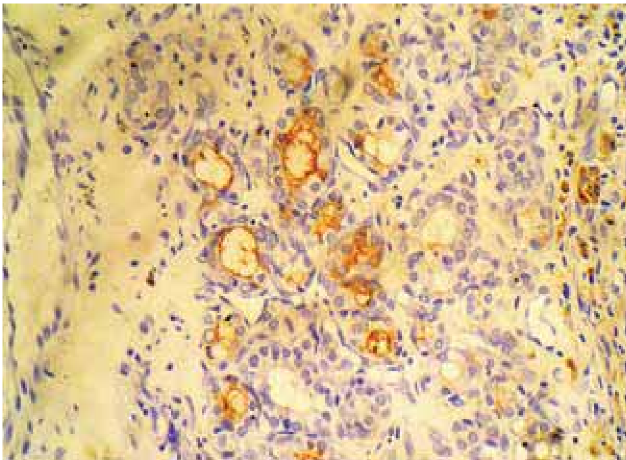

Figure 3 : Follicular cells showing positivity for Thyroglobulin (40X)

DISCUSSION

Metastatic tumours to the oral region are uncommon, comprising only 1%-3% of all malignant neoplasms[4]. Because of their rarity, they are generally overlooked in the diagnosis, because these malignant lesions have the same clinical features as that of Squamous Cell Carcinomas which are the most common malignant lesions in the jaw bones. But the apparent rarity may be partially due to failure to recognize metastatic tumours in the jaws. Further, the jaws are not routinely examined at autopsy, so it is possible that some lesions are missed. Hence the true frequency of metastatic tumours in the jaws may possibly be higher. The typical tumours that metastasize to the jaws in order of decreasing frequency are : breast, lung, adrenal, kidney, bone, colorectum, prostate and thyroid[3]. Most of the bony metastatic lesions are osteolytic and appear radiolucent on the radiograph; those of prostate and breast are osteoblastic and appear radio-opaque[5]. There are no characteristic type of radiolucent lesions; and in case of involvement of areas about the teeth, they might simulate periapical lesions or severe periodontal disease.

The most common clinical manifestations are swelling, pain/ paraesthesia and lymphadenopathy[2,3,6]. Less frequently, the lesion can present as pain in the temporomandibular joint region or as an osteomyelitis in the jaw, or as trigeminal neuralgia. The increase in volume of the bone with a metastatic lesion is often associated with dental mobility and/or trismus[2]. A peculiar site for metastasis is the post-extraction site, with the latency period usually of about 2 months. Metastatic tumours of the jaw are difficult to diagnose for a number of reasons [5]

1.) The lesions are centrally located within the bone
2.) There are a very few subjective symptoms, except at a very late stage
3.) Radiographs are usually non-specific

Thyroid carcinoma is the most frequently diagnosed endocrine carcinoma. Bone metastasis is found in 1-3% of well-differentiated thyroid carcinomas, occurring more often in follicular carcinoma and in patients more than 40 years of age. The presence of distant metastasis in an adult is associated with poor prognosis[1]. Follicular Thyroid carcinoma (FTC) is a well-differentiated tumour which originates in follicular cells and resembles the normal microscopic pattern of thyroid. It is the second most common cancer of thyroid after papillary carcinoma. It rarely gives rise to oral metastasis[3]. Immunohistochemical marker for FTC is thyroglobulin, which is present in more than 95% of FTC cases.

Pathogenesis of metastasis to jaw bones is unclear but possible predilection for mandible is due to large amount of red bone marrow and increased flow of circulating blood. Most of the red marrow in the jaws is found in the third molar region that is most often the metastatic site[5]. Others opine that the mode of metastasis is hematogenous, the neoplastic cells become deposited in the vascular haemopoietic tissue; a reduced flow of blood in the area could help the cell deposition[1,2]. When the metastasis is in the mandible, the primary tumour is frequently associated with a tendency to develop osseous metastasis. Most authors agree that in patients with multiple metastases, the prognosis is highly unfavourable, and palliative treatment may be the only option available to improve the immediate quality of life in such cases.

This case report adds to the growing list of rare metastasis to mandible from a distant primary, and highlights the need for alertness and awareness of the diagnostician when dealing with such cases.

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Errata

Article: ***"A Comparative Study to Evaluate the Anticardiolipin Antibody IgG in Pregnant and Non Pregnant Women with first Trimester recurrent Abortions"*** *by* ***Dr Sunita Kalra on page 57-58 JIMSA Issue Vol. 24, Issue 2, Apr-Jun 2011.*** *The designation of* ***Dr Sunita Kalra*** *should be read as* ***"Reader, Department of Anatomy, University College of Medical Sciences, New Delhi."***
The mistake was inadvertent and the error is regretted.

Editor, JIMSA