

## Case Report

# Metastasis of Adenocarcinoma to the Gingiva: A Rare Case Report

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**Citation:** Gowda T, Raj R, Mehrotra K, Gayatri PD, Kulkarni V, et al. (2017) Metastasis of Adenocarcinoma to the Gingiva: A Rare Case Report. Dent Adv Res 2: 119. DOI: 10.29011/2574-7347.100019

**Received Date:** 21 February, 2017; **Accepted Date:** 15 March, 2017; **Published Date:** 20 March, 2017

### Abstract

Localized gingival enlargement is often associated with specific systemic medication, abscess formation, trauma or reactive lesions. Scant literature is available reporting exophytic lesion of gingiva due to the metastatic malignant tumours. Here we present case of a 60 year old male which highlights that metastases should influence the clinician's differential diagnosis of oral mucosal lesions. In about 31% of the cases, oral metastasis was found to be the first indication of an occult malignancy at a distant site. However its clinical presentation is variable which may create diagnostic dilemma or may lead to erroneous diagnosis. Furthermore, the gingiva, a tissue prone to inflammation may serve as a pre-metastatic niche for the attraction of circulating malignant cells. This infrequently occurring case report of well differentiated metastatic adenocarcinoma accentuates the need of good interdisciplinary teamwork between the clinician and the pathologist.

**Keywords:** Adenocarcinoma; Gingival Metastasis; Oral Mucosa

### Introduction

Malignant neoplasms have the ability to metastasize to the bone or soft tissues from a primary site. Metastatic lesions of the oral tissues are not very regular and account for 0.1% of all oral malignancies [1,2]. But in the meantime they can be the first clinical symptom of an undiscovered malignant lesion, so their diagnosis is highly momentous. Periodicals on metastatic oral malignancies over five decades revealed that the common sites of metastasis are the breast, lung and kidney [3,4]. Metastasis to the oral cavity is usually the first manifestation of lung cancer [5]. Its general unanimity that, the common location of metastatic lesions is the mandible, with the molar area being the most frequent involved site, followed by the premolar area [6].

Irrespective of the infrequency of such metastases, the importance of early detection makes basics about the demographic characteristics, clinical presentation, appropriate treatment plan, and typical disease course valuable.

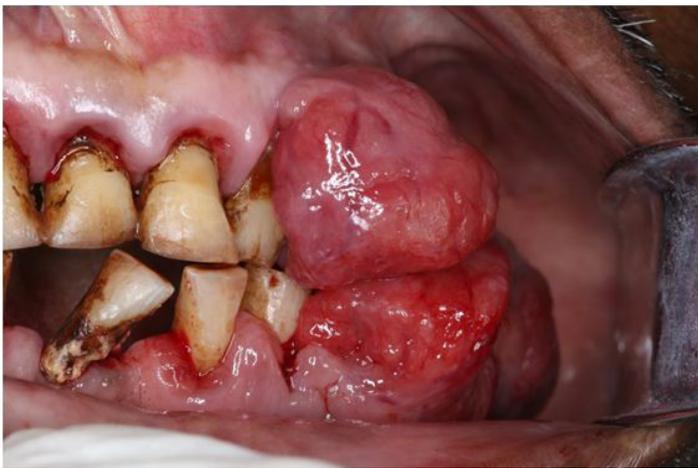
### Case Report

In September 2016, a 60-year-old male was referred to the Department of Periodontics, Bapuji Dental College & Hospital from a primary health care centre located in a remote area of Karnataka for evaluation and further treatment of an exophytic soft tissue lesion located in the left mandible & maxilla. The patient reported a vague 2-3 months history of growth in the left mandibular & maxillary gingiva which was causing extreme discomfort to the patient during mastication and speech. His medical history was not relevant except for cough and cold since 4-5 days and was on medication for same. Patient gave 15-years history of smoking 20 beedis (local form of smoking tobacco) daily. His family history was non contributory

### Clinical Presentation

The extra oral examination exhibited a discrete mandibular swelling on the left, with a non tender but palpable sub mandibular lymph node on the same side. No hypoesthesia or aesthesia was present in the area of the left inferior alveolar and mental nerve.

On intraoral examination, it was observed that patient's oral hygiene maintenance was very poor. Two exophytic pedunculated mass with well-defined margins were present, affecting the left mandibular and maxillary region measuring about 4 cm x 2 cm as depicted in Figure 1. The mass was painless and presented partial superficial ulcerations. All of the teeth in the left posterior quadrant of the mandible showed increased mobility with 36 exhibiting Grade III mobility. A panoramic radiograph demonstrated generalized severe bone loss as depicted in Figure 2. The bone structure in the region of soft tissue lesion was shaped regularly.



**Figure 1:** Affecting the left mandibular and maxillary region measuring about 4 cm x 2 cm.



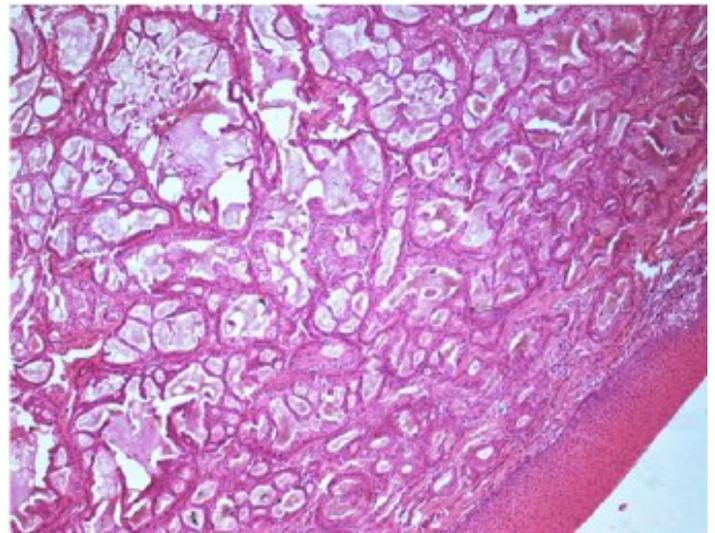
**Figure 2:** A panoramic radiograph demonstrated generalized severe bone loss.

Based on the clinical and radiologic findings, the most likely differential diagnosis included reactive lesions, such as a pyogenic granuloma or a peripheral giant cell granuloma. A malignant neoplasm of unknown origin was considered another possibility because of the rapid growth of the lesion. Thereafter, routine blood investigation was performed which exhibited all parameters within normal limit. Hence, punch biopsy was performed under local anaesthesia and the excised tissue was then fixed in a 4% buffered formalin solution, and submitted for histopathologic examination.

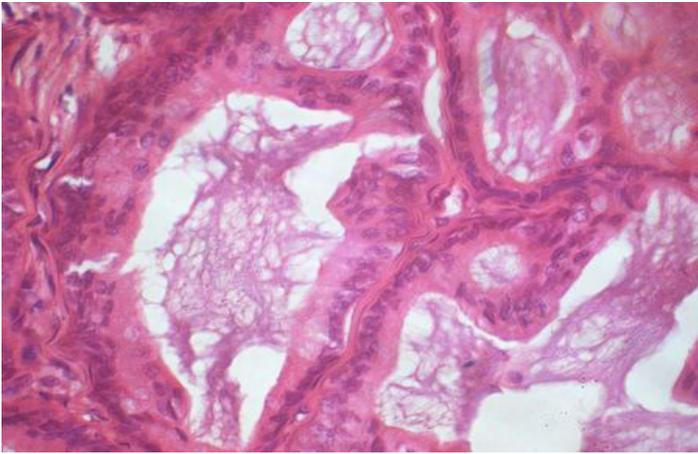
### **Histopathologic Evaluation :**

The histopathologic sections stained with haematoxylin and eosin gave the impression of a well differentiated metastatic adenocarcinoma.

Photomicrograph in Figure 3 shows non keratinized squamous epithelium with tumour tissue composed of completely glandular architecture (H&E, X40). Photomicrograph in Figure 4 shows a clearer view of the tumour tissue with the glandular structures lined by columnar epithelial cells showcasing vesicular overlapping nuclei and presence of abundant mucin secretions. The glands are arranged in a back to back fashion with lack of any stromal tissue (H&E, 100X).



**Figure 3:** Non keratinized squamous epithelium with tumour tissue composed of completely glandular architecture (H&E, X40).



**Figure 4:** Clearer view of the tumour tissue with the glandular structures lined by columnar epithelial cells.

### Further Referral

The discrepancy between the clinical course after the biopsy, with uneventful healing, and the histo pathologic results exhibiting clear signs of malignancy made it mandatory to check the patient's whole body for a possible primary malignant tumour. Therefore, the patient was immediately referred to an Advanced Oncology Centre (Mazumdar Shaw Cancer Centre, Bangalore) for further investigation, diagnosis and treatment.

### Discussion

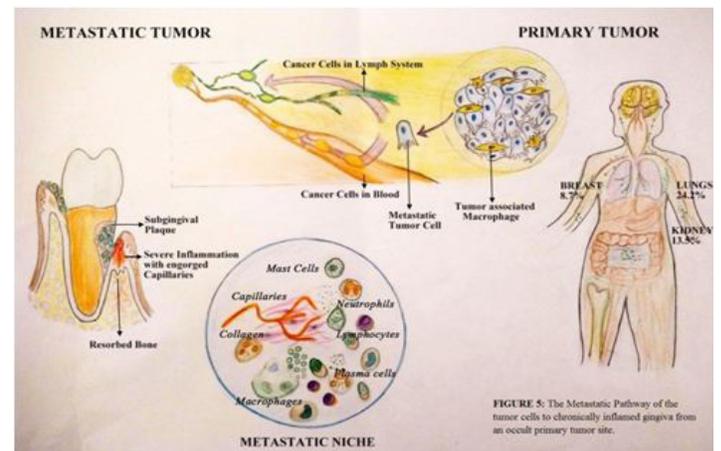
During our histopathologic examination it was revealed that the tumour configuration was compatible with poorly differentiated adenocarcinoma, but this morphology is not commonly seen in tumours of oral cavity, including salivary gland tumours, which are known for their diverse morphological and histological features. For this reason, it was thought that the tumour was primarily metastatic.

The metastases of gingiva are astonishingly rare and there are few documented cases of metastatic gingival tumours. Glickman [7] cited two metastatic gingival tumours from a primary chondrosarcoma of femur [8], one adenocarcinoma of colon [9], one carcinoma of lung [10], one hypernephroma which gave metastatic lesions to gingiva [11]. God by et al reported an interesting case of hypernephroma with metastasis of the mandibular gingiva. In a reviewed published in 2008, 673 cases of oral metastasis, out of which 112 cases were metastasized from the lung, of which 58 were noted in the jawbones and 54 in the oral mucosa were reported. The mean age of occurrence was 54 years (range of 9-88years) with slight male predilection. Primary tumours have been detected in most of the patients before the metastatic spread to the oral cavity.

However, in our case, the patient was asymptomatic and was not aware of any malignancy. Metastases to the soft tissues appear as dental or periodontal infection and they resemble reactive lesions or benign tumours such as pyogenic granuloma, epulis, peripheral giantcell granuloma, and odontogenic infection. The site of spread of metastasis to the oral cavity from distant organs is determined by the presence of teeth [12].

A literature analysis including 270 cases of metastatic lesions to the oral mucosa, gingiva was the most common site (60.4%), followed by tongue and tonsil. The most common primary sites were lung (24.2%), kidney (13.5%), skin (10.6%), and breast (8.7%). In 27%, the oral lesion was the rest sign of a malignant disease. In most cases, the lesion appeared as an exophytic mass (96%) diagnosed clinically as a reactive gingival lesion. The presence of teeth was significantly associated with the development of gingival metastases owing to the role of inflammation in the attraction of metastatic cells to chronically inflamed gingiva [13].

Although the jawbones and their adjacent gingiva share a common blood supply through the maxillary artery, there are two patterns in the metastasis to the gingiva: the localized metastasis or secondary invasion from the jawbone. The mechanism of localized gingival metastasis from lung cancer, such as this case, has yet to be elucidated. Hirshberg et al. proposed that circulating tumour cells may be entrapped in the rich capillary network of chronically inflamed attached gingiva once the cells have reached the oral region [14]. There may be some relationship between localization, chronic inflammation and blood supply as depicted in Figure 5.



**Figure 5:** Relationship between localization, chronic inflammation and blood supply.

A metastatic tumour in the gingiva is characteristically a rapidly growing proliferative tissue that tends to cause mechanical disturbances, pain and intermittent bleeding from a necrotic and

non-healing ulcer. Because the metastatic lesion resembles benign inflammatory lesions, such as hyperplasia, pyogenic granuloma and fibrous epulis, a detailed history and physical examination are crucial to detect the metastatic gingival tumour.

Treatment of gingival metastasis depends upon its presentation. It may present as either an initial lesion or late complication during the treatment of primary malignant lesion. Oral metastatic tumours are commonly associated with metastasis to the multiple organs and they are associated with poor outcome and difficult to palliate. Systemic chemotherapy, radiotherapy or surgical excision of the lesion under local anaesthesia is the treatment modalities. In our case, excision biopsy was selected as the treatment modality of choice owing to its contribution to arriving at a diagnosis and at the same time providing palliative treatment.

A general dentist or primary care physician may refer suspicious intraoral lesions to the periodontics for further evaluation. The periodontics may be in the unique position to be the 1st oral health care provider to evaluate and biopsy suspicious intraoral lesions. While rare, primary and metastatic lesions occur approximately 1-3% of the time it is very important that a thorough soft and hard tissue examination be performed as part of an initial periodontal evaluation. This emphasizes the importance of good interdisciplinary team work between the general physician, oral physician and the pathologist.

### Acknowledgment

The authors thank Department of Oral Pathology, Bapuji Dental College & Hospital, Davangere for guiding with regard to histopathological diagnosis. We would also like to thank Dr. Deepa V. for pictorial representation of metastatic pathway.

The authors report No Conflict of Interest related to this case report.

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