

CASE REPORT

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Numb chin in thyroid carcinoma: A rare clinical presentation

Jitendra V Kalburge, Yogesh K Kini, Vaishali J Kalburge

ABSTRACT

Introduction: Metastasis to the oral region from a malignant tumor elsewhere in the body is an uncommon but clinically important finding, because it may be the first indication that the patient has a distant primary tumor. **Case report:** A 65-year-old female presented with numb chin secondary to metastasis from thyroid follicular carcinoma is discussed. The lesion was located in the mandible on the right side. The diagnosis was solely based on histopathological examination of the tissue taken from the lesion in the mandible. This was the first evidence of the metastatic tumor in the jaws from thyroid follicular carcinoma in this patient. **Conclusion:** Although metastatic lesions within the mandible can be asymptomatic, most patients experience some degree of discomfort or pain, which is often followed by loosening of teeth or unilateral paresthesia or anesthesia of the lower lip or chin. The development of these symptoms should alert the clinician to the potential presence of metastatic disease.

Keywords: Metastasis, Follicular carcinoma, Thyroid gland, Mandible

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INTRODUCTION

Cancer is a complex disease in which many basic processes, such as cell division, apoptosis, and cell migration are dysregulated. It is the process of metastasis that results in morbidity and eventual mortality [1]. Metastatic carcinoma is the most common form of cancer involving the bone. Metastasis to a jaw bone may arise from primary carcinomas of any anatomic site. Carcinomas of breast, lung, thyroid, prostate and kidney give rise to the majority of gnathic metastases [2]. Metastatic carcinoma to the jaws constitutes approximately 1% of all oral malignancies. These tumors are of great clinical significance since at times their appearance may be the only symptom of an undiscovered malignancy and may be the first evidence of dissemination of the known tumor from its primary site [3].

Metastatic involvement of the jaws exhibit a wide variety of symptoms such as pain, swelling, loosening of teeth, etc. Metastasis to the mandible with involvement of the inferior alveolar nerve occasionally produces a distinctive pattern of anesthesia termed numb chin syndrome, in which there is an unexplained loss of sensation in the lower lip and chin. These symptoms may also be associated with inflammatory or primary neoplastic diseases of the jaws [2].

Jitendra V Kalburge¹, Yogesh K Kini², Vaishali J Kalburge³
Affiliations: ¹Professor, Dept. of Oral & Maxillofacial Pathology, Rural Dental College, Pravara Institute of Medical Sciences, Loni; ²Professor, Dept. of Oral & Maxillofacial Surgery, Rural Dental College, Pravara Institute of Medical Sciences, Loni; ³Senior lecturer, Dept. of Conservative Dentistry & Endodontics, Rural Dental College, Pravara Institute of Medical Sciences, Loni.
Corresponding Author: Dr. Jitendra Kalburge, Professor and Head, Dept. of Oral & Maxillofacial Pathology, Govt. Dental College & Hospital, Jamnagar-361008, Gujarat; Ph: 9604173884; Email: jkalburge@gmail.com, oralpathology@pmtipms.org

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The objective of this case report is to discuss metastatic thyroid follicular carcinoma in the mandible with an initial clinical presentation of numb chin syndrome.

CASE REPORT

A 65-year-old female reported to the outpatient department, with a complaint of swelling in the right side of the lower jaw with loss of sensation in the lower lip and chin for three months. Patient also complained of difficulty in opening mouth and swallowing.

The patient was old and appeared to be emaciated. No relevant medical history or a family history indicating any underlying genetic mechanism was recorded. She had habit of cleaning teeth by using Maseri and chewing tobacco quid mixed with lime, three to four times a day since her young age.

Extraoral examination revealed a diffuse swelling which was soft to firm in consistency, slightly tender with a size of 3x2 cm involving body and angle of mandible over right side. The skin over the swelling appeared to be normal but fixed to the underlying tissues. Area of fixation could be appreciated clinically on inspection as well as on palpation (Figure 1). The patient was clinically tested for loss of sensation in lower lip by forceful pinching and needle piercing. It was found that she had developed paresthesia of lower lip.

Intraoral examination confirmed with extra oral findings on the extension of the lesion. There was a swelling in the region of angle and depression in the region of body of the mandible on edentulous alveolar ridge. The alveolar ridge appeared to be soft and fluctuating on palpation. Patient gave history of exfoliation of teeth in the same region because of mobility. Maxillary arch was edentulous (Figure 2).

After thorough clinical examination, an orthopantomogram (OPG) was recorded. OPG revealed a large radiolucent, destructive lesion in the body and angle of mandible region. At places there were some radiopaque foci (Figure 3).

Based on these clinical and radiographic findings, a provisional diagnosis of primary intraosseous carcinoma was made. In the differential diagnosis following pathologies like central giant cell granuloma, central salivary gland neoplasm, and osteomyelitis were considered.

After obtaining written consent from the patient routine blood investigations were carried out and an incisional biopsy was done under all aseptic conditions and local anaesthesia.

The tissue was processed by routine histologic method and the sections were stained with H&E stain. Histopathologically, the tissue showed follicles lined by cuboidal cells with eosinophilic material (colloid) in the lumen. The cells with hyperchromatic nuclei were also found to be in sheets and towards periphery of the lesional tissue, invading the surrounding tissue (Figure 4). These histopathologic features were suggestive of

metastatic deposits and were in favor of follicular carcinoma of thyroid gland. Thus a diagnosis of metastasis of thyroid follicular carcinoma to the mandible was made.

The patient was immediately called and examined for neck mass. A mild swelling could be appreciated in the middle of the neck. The swelling was inconspicuous, painless, soft in consistency and diffuse. Patient was then referred to oncology department for thorough examination of the primary tumor site, i.e. thyroid gland. The reports confirmed the tumor as follicular carcinoma of thyroid with secondary in the mandible. Thus a conclusion was made that the jaw metastasis was first evidence of the malignant tumor of thyroid gland in this patient and was the cause of numb chin syndrome.

Patient was referred to oncology unit for further management. She was treated by near-total



Figure 1: Extraoral photograph shows fixation of skin (arrow) to the underlying structures in lower half of the face on right side.

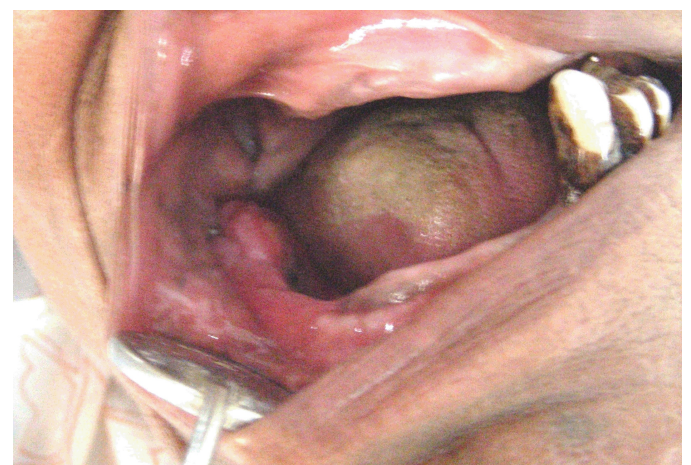


Figure 2: Intraoral photograph shows edentulous right alveolar ridge with swelling & depression in angle/body of the mandible.

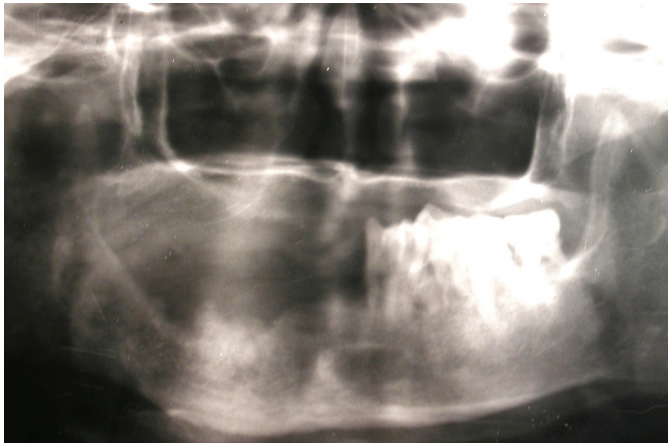


Figure 3: OPG showing a large radiolucent lesion with few radio-opaque foci in the body of the mandible on right side.

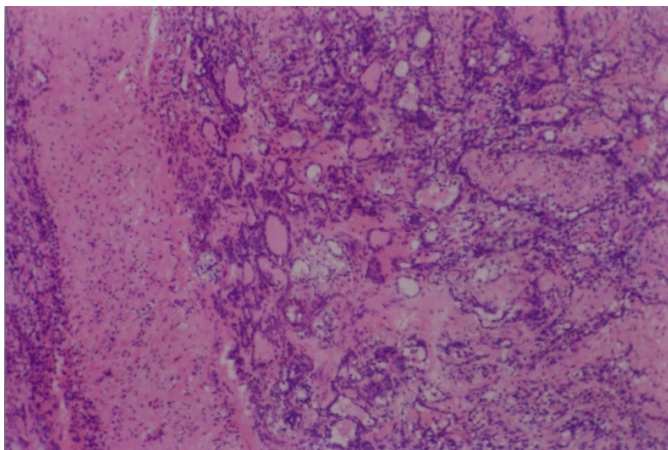


Figure 4: Photomicrograph shows follicles lined by hyperchromatic cuboid cells and containing colloid and sheets invading the surrounding tissues (20X, H&E stain)

thyroidectomy, resection of lesion in the mandible and radiotherapy. Follow-up revealed that the patient did not turn-up after second cycle of radiotherapy and died of the disease.

DISCUSSION

Metastatic jaw tumors originate from distant body sites and exclude lesions due to spread from adjacent sites or those due to local recurrence. Metastatic lesions are very significant as their appearance may be the only symptom of an underlying malignancy and/or the first evidence of dissemination from the primary site [4].

The exact incidence of secondary malignancies in the jaws is difficult to ascertain, as skeletal radiographic surveys are not routinely done. Even when such scans are performed, the jaws are usually excluded. In the opinion of several authors, only 1% of oral malignant neoplasms are metastatic in origin [4, 5]. Metastatic

tumors are most commonly encountered in the fifth to seventh decade of life. Controversy exists regarding sex predilection [6].

Literature indicates that metastases are more frequent in the mandible than in the maxilla due to paucity of active red marrow in the latter. Apart from the jaw bones, other oral sites of metastatic tumor are gingiva, buccal mucosa, soft palate and tongue [7]. In the oral soft tissues, the gingiva is the most common site for the metastatic colonization. Inflammation may play a role in the attraction of metastatic cells towards the gingiva [8].

Very few cases of metastatic thyroid follicular carcinoma to the jaws have been reported. In a recent analysis of 673 metastatic tumors to the oral cavity, Hirshberg et al. found 21 cases of thyroid malignancy metastasizing to the oral cavity, majority of them (19 cases) showed involvement of the jaws with female predominance (15 cases) [1]. A female predominance has been noticed among patients developing thyroid carcinoma in the adults, probably related to the expression of estrogen receptors on neoplastic thyroid epithelium. Follicular carcinomas are the second most common form of thyroid cancer (15%) and the neoplasm tend to metastasize through the blood stream to the lungs, bone and liver [9]. It shows higher prevalence of bone metastasis [10].

Soft tissue metastasis involving gingiva from a thyroid medullary carcinoma was reported by Piattelli et al. [10] while Hefer et al. [11] reported a case of maxillary metastasis. Kaveri et al. [6] reported a case of metastatic thyroid follicular carcinoma to the mandible.

Paresthesia of the lower lip and the chin should be considered an ominous sign for metastatic lesions of the mandible, as this signifies deep invasion of the tumor in to the bone and involvement of the inferior dental or mental nerves. The patient presented with initial complaint of swelling in the mandible and paresthesia of the lower lip on affected side. When seen in a patient with a known malignancy numb chin syndrome, in the absence of other causes, should be considered to be due to mandibular metastases until proven otherwise [12]. In 1987, a similar case of mental nerve anesthesia secondary to metastatic adenocarcinoma of breast was reported by Kalamchi [13].

This case is showed numb chin syndrome with involvement of mandible. A thorough evaluation of clinical condition and histopathological study of the incisional biopsy revealed the presence of metastatic pathology. Oral metastasis may present in various forms; as pain, swelling, tooth loosening, paresthesia, epistaxis and cervical lymphadenopathy or rarely as a pathological fracture or solitary radiolucency of the jaw bone. From the features of this case we suggest that metastatic tumor should always be included in the differential diagnosis of numb chin syndrome, along with odontogenic infections and other intraoral tumors.

Unlike the oral soft tissues, where a potentially metastatic lesion can be easily recognized, the presence of an early focus of tumor metastasis in the jaw bone may be overlooked. For many tumors the nearest

anatomic site encountered will be the most common site for metastatic colony formation [12]. Hanahan and Weinberg, have described the processes involved in the detachment of tumor cells from the primary cancer site, its transport through the lymphatics or blood stream and establishment of a metastatic tumor site [14].

CONCLUSION

Metastases to the oral cavity are quite uncommon. They may present with features similar to odontogenic infections and benign tumors. Most of the patients experience some degree of discomfort or pain, which is often followed by loosening of teeth or unilateral paresthesia or anesthesia of the lower lip or chin. The development of these symptoms should alert the clinician to the potential presence of metastatic disease. Careful clinical and histopathologic examination would facilitate selective investigations and multidisciplinary treatment.

Author Contributions

Jitendra V Kalburge – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Yogesh K Kini – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Vaishali J Kalburge – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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