

*Case Report***Mandibular Metastasis in Patients of Follicular Thyroid Carcinoma: A Rare Entity; Report of Two Cases**Channabasappa Kori<sup>1</sup>, Jeewan Ram Vishnoi<sup>1</sup>, Shiv Rajan<sup>1</sup>, Kiran Preet Malhotra<sup>2</sup>, Sameer Gupta<sup>1</sup>, Vijay Kumar<sup>1</sup><sup>1</sup>Department of Surgical Oncology, King George Medical University, Lucknow, Uttar Pradesh, India.<sup>2</sup>Department of Pathology, RML Institute of Medical Sciences, Lucknow, Uttar Pradesh, India.

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*Received: 15/07/2015**Revised: 22/08/2015**Accepted: 27/08/2015***ABSTRACT**

Mandibular metastasis due to thyroid carcinoma is extremely rare phenomena. Most of them were due to follicular carcinoma of thyroid because of its haematogenous spread. Thyroid carcinoma with isolated mandible metastasis accounts for 3.85% of all jaw metastasis. To the best of our knowledge, very few cases are noted in the literature. Here, we are presenting two cases, in which metastatic lesion of mandible due to follicular variant of thyroid carcinoma was detected before or with diagnosis of primary neoplasm.

**Keywords:** mandible, thyroid, follicular carcinoma.

**INTRODUCTION**

Metastatic tumors of oral cavity are very uncommon accounting for one percent of all oral malignancies. [1,2] Most commonly primary is from breast, lung, kidney, prostate and gastrointestinal tract. Metastatic lesions most commonly involve jaw bones compared buccal mucosa with premolar-molar region of mandible being the most frequent site. [3,4] Patients are usually asymptomatic, with pain, swelling, loosening of tooth and or paraesthesia being common clinical presentation. [5]

Thyroid carcinoma with isolated mandible metastasis is very rare accounting for 3.85% of all jaw metastasis. [6] Here we describe two cases of metastatic follicular thyroid carcinoma to the mandible, their clinical presentation and management.

**Case: 1:** A 50 year old female patient, chronic tobacco chewer presented with growth over left lower alveolus since 3 months, associated with pain and bleeding on and off. No other significant history noted.

Oral examination revealed ulcero-proliferative growth over left alveolus around 4x5cm, extending premolar to molar region and bleeds on touch. External examination showed the presence of swelling in the left mandibular region [Fig 1]. No obvious cervical adenopathy.

Orthopantograph [OPG] revealed osteolytic lesion in the body and ramus of mandible.

Punch biopsy showed metastatic follicular thyroid carcinoma where tumor cells were positive for thyroglobulin, pancytokeratin and negative for CD 34.



Fig 1: Clinical photograph showing diffuse swelling in left mandibular region.

Computed Tomography [CT scan] of face and neck showed ill defined heterogeneously enhancing soft tissue attenuation is seen involving body of mandible on left side causing destruction and has ill-defined interface with ipsilateral masseter and medial pterygoid muscle [Fig 2A]. It also showed heterogeneous enhancing lesion in left lobe of thyroid [Fig 2B].

Fine needle aspiration cytology [FNAC] of the thyroid lesion showed follicular neoplasm. Thyroid profile was normal. Bone scan revealed large photopenic area with mild tracer uptake in

the region of body of left mandible and no other obvious skeletal metastasis. Chest radiography was within normal limit.

Patient underwent total thyroidectomy with central compartment clearance and left segmental mandibulectomy. On gross examination of specimen of thyroid showed nodule involving isthmus and left lobe measuring 3x2.5x 1.5cm. Left segmental mandibulectomy specimen showed ulceroinfiltrative growth involving buccal mucosa, gingivobuccal sulcus and alveolus [Fig 3].

Histopathological examination of thyroid was reported as follicular carcinoma of thyroid without nodal metastasis and of segmental mandibulectomy as metastasis from follicular carcinoma with negative margins [Fig 4A]. Tumor cells stained positive for thyroglobulin [Fig 4B]. Postoperative course was uneventful. Patient was on thyroxin supplementation. Patient received radio-iodine ablation and is disease free on 1 year of regular follow up.

**Case: 2:** A 40 year old female patient, complained of painless anterior neck swelling since 35 years and swelling over left lower jaw since 2 years, associated with pain. No other significant history noted.



Fig 2: CECT scan showed ill defined heterogeneously lesion is seen involving body of mandible on left side [fig 2A] and heterogeneous enhancing lesion in left lobe of thyroid [fig 2B].



Fig-3: Specimen photograph showing tumor resected by left segmental hemimandibulectomy and total thyroidectomy.

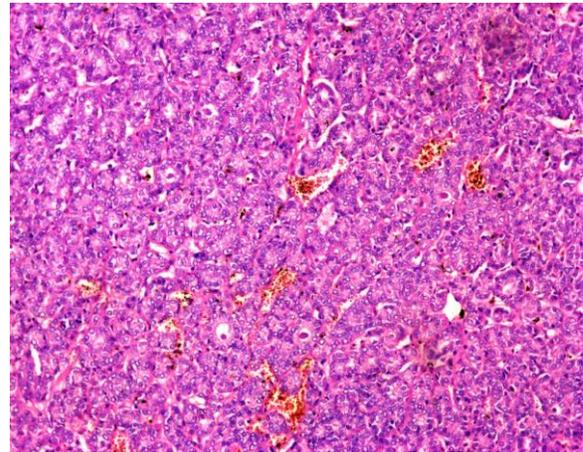


Fig 4B: Immunohistochemistry showed tumor cells positive for thyroglobulin.

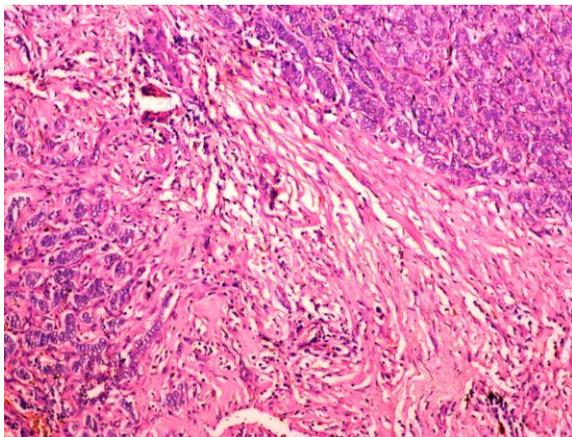


Fig 4A: Photomicrograph showing presence of well developed thyroid follicles with abundant colloid and marked cellular and nuclear pleomorphism with nuclear hyperchromatism.



Fig 5: Clinical photograph showing large swelling in submandibular region.



Fig 6a & 6b: CECT scan showed large expansile lytic lesion in left half of mandible involving body and ramus

On examination, there was 4x3cm right thyroid lobe swelling, firm in nature, moves well with swallowing. Oral

examination revealed ulceroproliferative growth over left buccal mucosa and lower gingivo-buccal sulcus around 3x5cm,

extending second premolar to second molar region which bleed on touch. External examination showed the presence of hard, tense swelling of around 15x 10cm involving left half of mandible [Fig 5]. No obvious cervical adenopathy.

Orthopantograph [OPG] revealed osteolytic lesion in the body and ramus of mandible.

Punch biopsy showed metastatic follicular thyroid carcinoma where tumor cells were positive for thyroglobulin, pancytokeratin and negative for CD 34. Computed tomography (CT scan) showed large expansile lytic lesion in left half of mandible involving body and ramus [Fig 6A & 6B]. It also showed grossly enlarged thyroid gland with heterogeneous enhancing lesion in right lobe of thyroid.

FNAC of the thyroid lesion showed follicular neoplasm. Punch biopsy of oral lesion revealed metastasis from follicular carcinoma where tumor cells were positive for thyroglobulin. Thyroid profile was normal. Bone scan revealed increased tracer uptake in the region of body and ramus of left mandible and maxilla with no other obvious skeletal metastasis. Chest radiography was within normal limit.

Patient underwent total thyroidectomy with central compartment clearance. Postoperative course was uneventful. Patient was on thyroxin supplementation.

Gross examination of thyroid specimen showed multinodular lesion in both lobe, largest measuring 5.5x4cm in right lobe. Final histology was consistent with follicular carcinoma. Patient was planned for adjuvant radioiodine ablation, but lost follow up.

## DISCUSSION

Metastases to the oral cavity are very rare that accounts for one percent of all oral malignancies. [1,2] Most common site

affected is the body of the mandible in the premolar-molar region. The propensity of posterior mandible involvement is due to its better vascularity and presence of hematopoietically active bone marrow cells that has affinity for tumor cells. Exact incidence of metastatic disease is not known. Primary tumors that metastasize to the jaws include breast, lung, adrenal, kidney, bone, colorectum, prostate and thyroid being the rare cause. [3,4] Breast cancer is the most frequent metastatic oral cancer in females; lung cancer followed by prostate cancer is the most frequent metastatic tumor in males. Lung is the most common cause of metastasis to the oral soft tissues, whereas the breast is the most common source of metastatic tumors to the jaw bones.

Gingival, buccal mucosa, soft palate, tongue, parotid gland and labial mucosa are other common sites affected in oral cavity. Most common presenting symptoms are pain, swelling, loosening of teeth and paraesthesia. [5] Most of the bony metastatic lesions are osteolytic and appear radiolucent on the radiograph while osseous lesions of prostate and breast are blastic and appear radio-opaque.

Thyroid carcinoma is the most commonly diagnosed endocrine carcinoma. Distant metastases occur in 10 to 15% of well differentiated thyroid carcinoma. [7] 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. [8] The presence of distant metastasis in an adult is associated with dismal prognosis with an overall mortality of 50 per cent. Follicular thyroid carcinoma (FTC) is a well-differentiated tumor which originates in follicular cells and resembles the normal microscopic pattern of thyroid. FTC rarely metastasizes to oral cavity. Immunohistochemical [IHC] marker for

FTC is thyroglobulin, which is present in more than 95% of FTC cases. [9]

In a study by Batsakis, thyroid carcinoma accounted for 6.1 % cases among 115 metastatic jaw tumors. [1] Treatment strategy for differentiated thyroid cancer includes thyroidectomy and radiotherapy. Early detection of metastatic disease and appropriate management improves the overall survival rate.

## CONCLUSION

Mandible metastasis due to thyroid carcinoma is uncommon entity and very few cases have been reported in the literature. Most of them were due to follicular carcinoma of thyroid because of its haematogenous spread. It might be the only evidence of distant spread of an unknown primary from its primary site. The present cases demonstrate the importance of considering metastasis in the differential diagnosis of mandible swelling, even though the patient had no history of any malignant disease.

**Consent:** Taken.

**Conflicts of interest:** No potential conflict of interest relevant to this article was reported.

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### Abbreviations:

FTC- follicular thyroid carcinoma, OPG- Orthopantograph, CT scan: computed tomography, IHC-immunohistochemistry,

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