



## ONCOCYTIC (HURTHLE CELL) THYROID CARCINOMA METASTASIS TO MANDIBLE: A RARE CASE REPORT

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**ABSTRACT** **Introduction:** Follicular thyroid carcinoma (FTC) accounts for ~10% of thyroid malignancies. Of all the oral malignancies only about 1% are metastases to the oral cavity. Focal oncocytic trans-differentiation results in neoplasia consisting predominantly of hurthle cells that can represent benign Hurthle cell adenoma or malignant Hurthle cell carcinoma. **Case report:** A 60 year female with complaint of left mandibular swelling came to opd, on CT it reveals lytic hyperenhancing solid expansile soft tissue lesion is seen in posterior body and ramus of mandible on left side, measuring 3.2\*2.0\*2.5 cms. **Discussion:** In conclusion, facial skeleton metastasis of thyroid malignancy is very rare. Most advantageous option in regards to treatment is surgical resection followed by radio-iodine therapy.

**KEYWORDS :** Hurthle cell carcinoma, Follicular thyroid carcinoma, Facial skeleton metastasis, Mandibular Metastasis

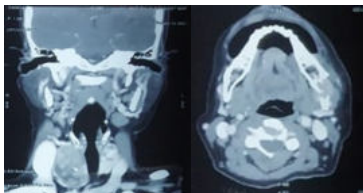
### INTRODUCTION

Follicular thyroid carcinoma (FTC) accounts for ~10% of thyroid malignancies. It is the second most common thyroid cancer. More common in women of age 40-60 years [1]. Of all the oral malignancies only about 1% are metastases to the oral cavity. Most of them are in jaw. Metastases to jaw are more common in older male patients [2]. Oral metastases are first sign of an occult malignant tumor elsewhere in body in nearly 23% of cases [3, 4]. Metastases can happen via bloodstream or lymphatic. Oral metastasis origin can be different based on gender [3]. In men cancer of the lungs, liver and prostate are main cause of jaw metastases, while in women breast, thyroid and lungs are main cause [2]. FTC is known to spread and metastasize hematogenously. Bone and lungs is more common site of distant metastases in FTC [5]. Metastases to facial bones are extremely rare in FTC.

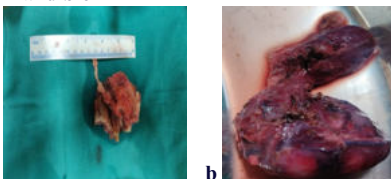
Facial bone metastases in FTC can be seen in jaw, paranasal sinuses or the orbit. Facial bone metastasis is rare and prognoses of such lesions are expected to be poor. In this report we present a case of FTC, metastasizing to the mandible.

### Case presentation

A 60 year female came to OPD department in SRJ CBCC hospital, Indore. Her presenting complaint was left mandibular swelling since 3 months. She had no other complaint. There was no history of any oral ulcer or pain. She had no prior significant medical or surgical history. There was no history of any addiction. On general examination she was average built. On local examination an oval shaped swelling is seen on left side of face of about 2\*3 cm over angle of mandible. It was nontender and had bony hard consistency. On examination of oral cavity no ulcer was detected. No gross lymphnode were palpable in neck



**Fig 1: CECT showing involvement of Right lobe of thyroid and Left side of mandible**



**Fig 2: a.Specimen of resected mandible; b.Specimen of resected thyroid showing both lobes.**

Patient was referred for FNAC of swelling and CECT face with neck. FNAC was suggestive for malignant salivary gland tumour or metastasis and advice for Immunohistochemistry (IHC). IHC revealed tissue was immunoreactive for CK7, CK19, PAX8, CD56, KI67, and TTF1. Features were suggestive for Metastatic Carcinoma of thyroid origin, possibility of medullary carcinoma may be considered. On CECT a lytic hyperenhancing solid expansile soft tissue lesion is seen in posterior body and ramus of mandible on left side, measuring 3.2\*2.0\*2.5 cms. A large heterogeneously hypodense multiseptated lesion measuring 5.2\*4.2\*3.3 cms is also seen in right lobe of thyroid gland. Preoperatively thyroid profile, calcitonin, and usg abdomen was done. All were within normal limits. Patient was admitted and total thyroidectomy with bilateral neck dissection with left segmental mandibulectomy was done. The defect created by mandibulectomy is repaired by free fibula repair. Postop histopathology reveals Oncocytic (Hurthle cell) carcinoma, widely invasive, tumor capsular invasion was identified, angioinvasion was present, and no lymphnodes were involved. Mandible section also shows infiltration shows infiltration by similar tumor. Final pathological staging was done for pT3a pN0 pM1. Patient was advised for further radioiodine therapy.

### DISCUSSION

In 2017 Varun V et al published a systematic review of follicular thyroid carcinoma metastasis to the facial skeleton. They identified 64 studies reporting 97 cases of thyroid cancer metastasis to the facial skeleton in the English literature [6]. Hurthle cells can be detected in both benign and malignant conditions of the thyroid gland. They are large, polygonal cells with marked eosinophilic, granular cytoplasm reflective of overly abundant mitochondria [7]. Due to various cellular stress responses, oncocytic metaplasia occurs in many organs of the body. In benign thyroid condition such as cell mediated autoimmune thyroiditis, humoral mediated hyperthyroidism and hyperplastic nodules in multinodular goiters oncocytic changes can be seen [8]. Focal oncocytic trans-differentiation results in neoplasia consisting predominantly of hurthle cells that can represent benign Hurthle cell adenoma or malignant Hurthle cell carcinoma. Like follicular lesions difference between adenoma and carcinoma can only be made on histologic examination of resection specimen, by determining presence or absence of capsular and/or vascular invasion.

Of all oral-maxillofacial malignancies only 1% is due to metastasis. Breast and lung carcinoma are main causes of metastasis to face. About 2% of facial skeleton metastasis is due to thyroid malignancy and 4.2-6.1% of all jaw metastasis [9]. Most of metastatic tumors to the mandible will present with a facial swelling and if tumor invades oral mucosa than granulation like mass may form. But in our case there was only mandibular swelling with no intraoral mass. Bone metastases can occur in the vertebral bodies, followed by pelvis, femur, skull and ribs [12, 13]. 41% of metastasis of facial skeleton from thyroid cancer occurs in mandible. About 41 cases have been reported as metastases to mandible due to thyroid cancer of which 21 were due to follicular

thyroid cancer [6]. Treatment in bone metastases in case of thyroid cancer often involves high dose radioiodine; but bony metastases are less likely to concentrate radioiodine, and thus, the efficacy is assessed at 55% [6]. Isolated metastases to facial skeleton may be treated with surgical resection, radioactive iodine, external beam radiation or combination of the three.

Varun et al [6] conducted a review of case reports available in English literature. They found treatment varied between studies and included: Surgery with or without preoperative embolization and radioactive iodine therapy, external beam radiation (primary or adjuvant treatment), and palliative chemotherapy. They found 22 patients were treated with surgery as initial treatment with or without postoperative radioactive iodine or external beam radiation. 11 patients were treated with external beam radiation as primary treatment. 14 reports did not specify treatment. 4 patients were treated with palliative care; 2 of these patients received palliative chemotherapy. Cases were grouped into: a surgical arm (those treated with surgery and RAI) and a non-surgical arm. Patients treated with surgery and RAI versus those treated by non-surgical means were compared. There was no statistical difference in overall survival ( $p = 0.27$ ) with the surgical group having 2 and 5 year overall survival of 100% and 71%, respectively and those in the non-surgical arm having rates of 92% and 46%. But Disease specific survival for all patients at 2 years was 96% and at 5 years was 72%. There was a statistically significant difference in disease specific survival (DSS) between patients treated with surgery and RAI versus those treated by non-surgical means ( $p = 0.03$ ). DSS for surgically treated patients at 2 and 5 years was 100% and for non-surgically treated patients was 92% and 46%, respectively.

In conclusion, facial skeleton metastasis of thyroid malignancy is very rare. Most advantageous option in regards to treatment is surgical resection followed by radio-iodine therapy.

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