

Papillary thyroid carcinoma presenting with mandibular metastasis: An unusual presentation

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ABSTRACT

Mandibular metastasis from papillary carcinoma of the thyroid is extremely rare. We report here a case of metastatic swelling on the mandible due to papillary carcinoma of the thyroid. The patient presented with jaw swelling and the thyroid lesion was an incidental finding on clinical examination. Computed tomogram scan revealed the presence of a contrast enhanced lesion in the thyroid and lytic expansile lesion in the body of the mandible. The diagnosis of papillary thyroid carcinoma (PTC) with mandibular metastasis was made after cytological examination of both the lesions. The patient was treated with surgery followed by radioiodine ablation. In conclusion, metastatic tumor to the jaw from a PTC is an extremely rare phenomenon and in the differential diagnosis of a metastatic jaw swelling small primary tumors of the thyroid should be excluded.

Key words: Mandible, metastasis, papillary carcinoma thyroid

INTRODUCTION

Papillary thyroid carcinoma (PTC) accounts for approximately 80% of all thyroid cancers.^[1] The most common presentation of carcinoma of the thyroid is a slow growing swelling in front of the neck, which is detected incidentally. PTC's are tumors with a relatively indolent behavior and favorable prognosis.^[2] Multiple bone metastases in PTCs is noted more often than single bone metastasis.^[3] Distant metastases of PTC to the lungs, bones, and brain occurs in 5-7% of all cases.^[4] In PTC mode of spread is usually lymphatic invasion and it frequently metastasizes to the regional lymph nodes, though solitary distant metastases is also seen rarely.^[5] Patients with differentiated thyroid carcinoma have a 10 year survival rate

of 80-95%. However, when distant metastases are present, the overall 10 year survival rate is below 40%. Mazzaferi had reported that, 25% of the metastases from thyroid cancers are to the bones, 49% to the lungs, 15% to the lungs and bone combined, and 10% to the other soft tissues.^[6] The common metastatic site at the mandible is the posterior body of the mandible (premolar-molar region).^[7,8] PTC presenting with metastasis to the mandible is rare and only a limited number of cases has been reported in the literature.

CASE REPORT

A 55-year-old female patient reported to the outpatient Department of Head and Neck Surgery at our institute with the chief complaint of swelling on the right side of the jaw, which was of 6 months duration. The swelling was gradual in its nature. There was no associated history of pain or intake of medications. On local examination, there was a hard 4.5 × 4.5 cm sized nontender swelling over the right side of the mandible, the skin overlying the swelling was normal, and the margins of the swelling were irregular. Examination of the neck revealed a firm 2 × 2 cm nontender mobile swelling on the right thyroid lobe which moves on deglutition. Computed tomogram scan

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of the oral cavity and neck showed a lytic expansile lesion involving right side of the mandible [Figure 1] and a solid nodular lesion in the right lobe of the thyroid, respectively. Thyroid function tests and other hematological parameters were normal.

Fine-needle aspiration cytology (FNAC) from the thyroid swelling showed features of papillary carcinoma of the thyroid and FNAC of the right mandibular swelling was metastatic papillary carcinoma. The diagnosis of PTC with mandibular metastasis was confirmed.

The patient underwent total thyroidectomy along with a right lateral segmental mandibulectomy, for the mandibular metastasis and extended supraomohyoid neck dissection was done for the lymphatic clearance. Postoperative histopathology report of the thyroid swelling showed follicular variant of papillary carcinoma thyroid with clear nuclear chromatin, nuclear groups, and intranuclear inclusions [Figure 2a] and the mandible showed metastatic papillary carcinoma [Figure 2b].

Postoperative iodine¹³¹ scan of the whole body showed residual functioning thyroid tissue in thyroid bed. Subsequently, the patient was further treated by radioiodine ablation (RIA) therapy (100 mCi). On followup after 2 year from treatment, imaging scan with positron emission tomogram (PET) was done, which revealed the patient was free from disease.

DISCUSSION

Papillary thyroid carcinoma metastasis to the jaw is extremely rare and it accounts for about 3.85% of all jaw metastases of all head and neck carcinoma,^[8] whereas bony metastasis of follicular carcinoma of the thyroid is relatively common. The metastasis in PTC commonly

occurs to regional nodes only. Bone metastases is rare in a patient with PTC and it is seen in older patients.^[5] In our case also the patient was relatively older. Spine is the most common site of bony metastasis from a differentiated thyroid cancer.^[3] Both the jaw and soft-tissues of the oral cavity may be affected by metastatic cancer with a predilection for the mandible and the gingiva.^[9] The vast majority of oral metastases from thyroid cancer were seen in the mandible.^[10] It has been suggested that the predilection of metastasis to the ramus and angle of mandible is due to the rich blood circulation in the medullary cavity of the region,^[7,8] and in the present case PTC metastasis occurred in the body of the mandible and adjacent to the ramus.

The treatment of metastatic thyroid carcinoma has varied extensively from palliative to various combinations of surgical resection, radio-iodine therapy, and radiotherapy. It has been recommended that surgical resection of the metastatic tumor in conjunction with total thyroidectomy, followed by RIA and/or external beam radiation (EBRT) may afford better survival.^[7,11-13] In our case, the patient was treated curatively with surgery followed by RIA, but the patient did not received EBRT. The patient was free from disease after treatment with surgery followed by RIA at the 2 year followup both clinically and radiologically on PET scan image (short term followup).

The extent of metastatic disease to bone in PTC and its response to radioactive iodine are predictors for better survival.^[14] Hence, early detection of the metastatic disease along with the primary improves the overall survival rate in patients with PTC. However, in our case the patient presented with metastasis and the primary lesion was an incidental finding.

CONCLUSION

Metastatic tumor to the jaw from a PTC is an extremely rare phenomenon and in the differential diagnosis of a metastatic jaw swelling small primary tumors of the thyroid should be excluded.

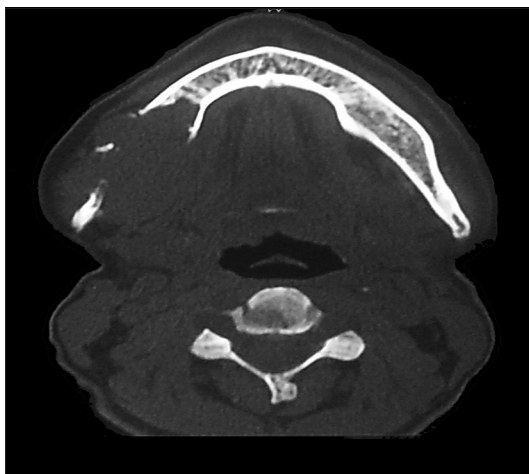


Figure 1: Axial bone window section on computed tomogram scan showed the expansile mass in the body of the mandible

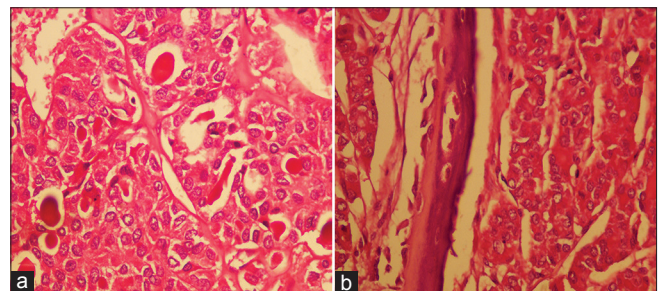


Figure 2: (a) Photomicrograph ($\times 40$) with H and E showing follicular variant of papillary thyroid carcinoma (PTC) with nuclear features, (b) photomicrograph ($\times 40$) showing metastatic thyroid carcinoma with nuclear features of PTC in bone

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