

Case Report

Mandibular Metastasis from Follicular Thyroid Carcinoma: A Rare Case after Twelve Years

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Abstract

Metastatic tumor of the mandible is a rare lesion and differentiated carcinomas of the thyroid as the primary site of origin are even more uncommon. A case of late metastasis of follicular thyroid carcinoma (FTC) to the mandible is presented here. The metastasis arose 12 years after thyroidectomy. Although relatively rare, thyroid tumors metastases to the mandible should be born in mind, as in rare cases this metastasis may be the only presentation of the original malignancy.

Keywords: Distant metastasis, follicular carcinoma, jaw bone, thyroid gland

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Introduction

Metastatic carcinomas of the oral cavity are very rare and represent approximately 1 % – 2 % of all oral malignancies. This is probably due to the paucity of red marrow in the mature jaw.¹ The most common tumors of origin are breast, lung, adrenal, kidney, gastrointestinal tract, and prostate, respectively.^{2,3} On the other hand, distant metastasis of thyroid carcinoma is also rare (about 1 % – 2 % of the well-differentiated types) and occurs most frequently in the lung and bone (vertebrae, pelvis, and the ribs).^{4,5} One of the uncommon sources of metastatic cancers of the oral cavity is thyroid carcinoma. Some researchers reported the prevalence of thyroid carcinoma about 6.1 % of all jaw metastasis.⁶ But the true incidence is unknown because the jaw bones rarely included in radiographic skeletal survey which can detect the bone metastasis.^{4,7} In this study, we are presenting a case of mandibular metastasis with a history of follicular thyroid carcinoma (FTC) twelve years earlier.

Case Report

A 58-year-old woman was referred to the otorhinolaryngology clinic with a complaint of swelling in the right side of her face over the angle of mandible (Figure 1). She reported extraction of the first molar tooth two months earlier because of tooth mobility and pain. After the tooth extraction, she noticed the swelling which was gradually increasing in size. She had no complaints of pain or discharge from the mentioned mass. Reviewing her medical records, twelve years ago, she had undergone total thyroidectomy due to FTC. But there was no history of radioiodine therapy,

external radiotherapy, or a watchful follow-up.

On physical examination, a firm to stony mass was palpated in the right angle of the mandible extending to the ramus on the right side. It was about 2 × 3 cm and had intact mucosa. No effect on the teeth and occlusion was seen except for the first molar tooth which was extracted earlier. The scar of thyroidectomy could be seen on her neck. No lymphadenopathy or thyroid mass could be palpated in the neck. Radiographic and CT scan images revealed a solid osteolytic lesion (mass) in the right mandibular angle with cortical expansion (Figure 2).

An incisional biopsy was performed intraorally. The histopathologic study revealed neoplastic cellular proliferation with round monomorphic nuclei in a follicular pattern with colloid. These findings were consistent with metastatic FTC (Figure 3). No other metastatic lesions were detected in whole body scan. For this reason and to improve the patient's quality of life, surgery was planned. The mandibular mass was removed by segmental mandibulectomy through a midline labiotomy incision and the bone defect was reconstructed with a 2.7 mm titanium reconstructive plate (Figure 4).

Discussion

Although the true incidence of metastatic tumors to the jaw bones is unknown, these metastatic lesions make up around 1 % of all oral malignancies. Mandible is the most common location and the molar area is the most frequent site of involvement.^{1,4,7} This may be due to greater hematopoietic tissue in the mandible than the other jaw bones. However, the overall incidence of the jaw bones metastasis is less than other bones in the body which is probably because of gradual replacement of red marrow with yellow or fatty marrow.⁷

As mentioned before, metastasis to the mandible is rare and among them, the thyroid origin is extremely rare. The primary sites of metastatic lesion to the jaw bones are different between genders. The most common site is breast in female and lung in male.² The symptoms of a metastatic tumor in the mandible include pain, swelling, loosening of teeth, paresthesia, cervical lymphadenopathies,^{3,8} and rarely pathologic fracture.^{7,9} In some cases these symptoms or signs may be the only manifestation of

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Figure 1. A swelling over the right angle of the mandible on observation.



Figure 2. Cortical expansion by the metastatic follicular thyroid carcinoma.

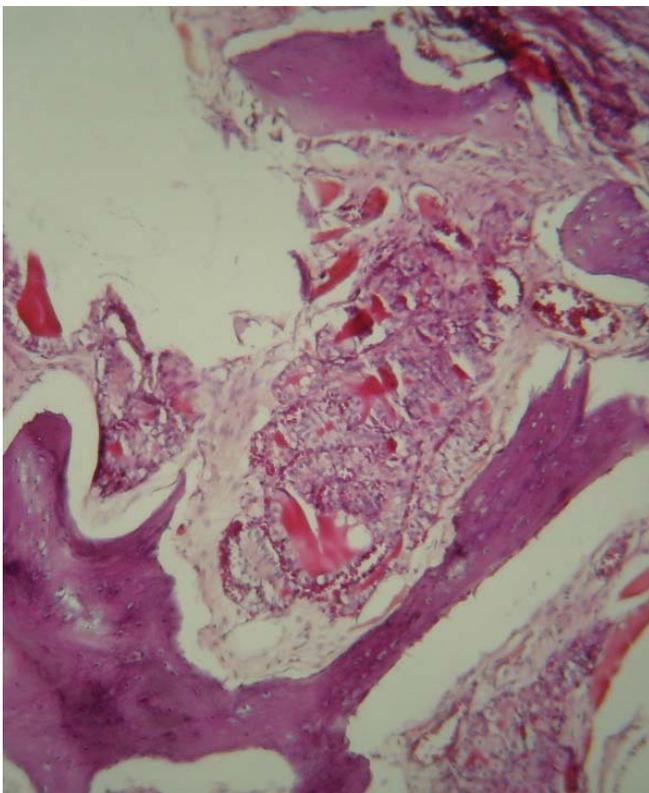


Figure 3. Clusters of colloid-filled neoplastic follicles surrounded with mature bone trabeculae (H&E, x 100).



Figure 4. Mandibular involvement by the follicular thyroid carcinoma.

an undiscovered disseminated malignancy.¹⁰

Symptoms of metastasis may present before the diagnosis of the primary tumor or after surgical removal of the primary tumor.^{3,4,11} But late emergence of metastatic FTC twelve years after thyroidectomy is so rare. The similar cases in the literature include a 61-year-old woman reported by Anil, et al. with the history of thyroidectomy eight years earlier,⁴ and another one reported by Colella, et al. with mandibular involvement five years after a right thyroid lobectomy and isthmectomy (for papillary carcinoma).¹²

FTC is the second most common well-differentiated cancer of the thyroid.¹³ It accounts for 10% of all thyroid malignancies. The mean age of presentation is about 50 years.¹⁴ Distant metastases

have been reported in 10% to 15% of patients with differentiated thyroid carcinomas. Bone metastasis is the second most common site after lungs.^{4,5,10} Bone metastases are found in 1% – 3% of well-differentiated thyroid carcinomas, occurring more often in follicular carcinoma due to greater hematogenous spread and in patients more than 40 years of age.^{5,12} Orita, et al. reported a worse prognosis among patients with differentiated thyroid and meta-chronous bone metastasis. The type of cancer, either papillary or follicular carcinoma did not have any prognostic value in their study.¹⁵ However, distant metastasis of FTC reduces the 10-year survival by 50%.¹⁶

Although relatively rare, metastatic lesion should be considered

in the differential diagnosis of radiolucent jaw lesions. Long term survival may be achieved with early diagnosis and treatment.

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