Unusual scalp metastasis from follicular thyroid carcinoma

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ABSTRACT

تظهر الأورام الانتقالية بتلف في النسيج الرخو وتعد من الحالات النادرة والمثيرة للشك في كلا من الفحص السريري والنسيجي. نعرض هنا حالة لإمرأة تبلغ من العمر 82 عام تعاني من انتفاخ غير مؤلم في المفصل الصدغي القذالي الأيمن لمدة 3 أشهر وانتقال نادر للخلايا السرطانية من سرطان الغدة الدرقية الجريبي. يعد الفحص النسيجي مهم في تحديد نوع الورم والوصول إلى التشخيص الدقيق والصحيح.

Metastatic tumors presenting as soft tissue lesions are relatively rare, and can be the source of diagnostic confusion both clinically and histopathologically. We present a case of an 82-year-old woman with complaints of painless swelling in the right temporo-occipital junction for 3 months, and with unusual scalp metastasis of thyroid follicular carcinoma. Use of histopathological examinations are significant for determining the tumor type, and arriving at the exact and correct diagnosis.

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Thyroid carcinoma accounts for 1% of all thyroid tumors.[1] Follicular carcinoma accounts for 10-20% of all thyroid malignancies, and it tends to occur more frequently in older patients over 40 years.[2] Follicular thyroid cancer (FTC) is however, distinct in that, it infrequently metastasis to lymph nodes, and more frequency represents with distant metastases.[3] Follicular thyroid carcinoma metastasis, which occurs in approximately 10-20% of cases, usually appear in the bones, liver, kidney, breast, and lungs.[4] Furthermore, metastases to soft tissue are so rare, and their prognosis and treatment are markedly different. In the literature, limited knowledge is available on this type of metastasis, and has been mostly presented as a few small series. Treatment of FTC is principally surgical with added chemotherapy, but the prognosis is still very poor indeed. A recent case series reported a 40% 5-year survival in cases with FTC metastasis.[1] We present a rare case of metastatic FTC in a patient who presented with scalp lesion on the right temporo-occipital junction to contribute to the literature, and increase awareness on the management of similar cases.

Case Report. An 82-year-old woman was referred to the Outpatient Neurosurgery Clinic of Afyon Kocatepe University Hospital in April 2008 with complaints of painless swelling in the right temporo-occipital junction for 3 months. On examination, discreet mass was palpable and non-tender with a lipoma-like consistency. Abdominal and pelvic examination, and by follow-up routine direct lung graph, abdominal ultrasound, and I131 bone scan were performed. A cutaneous lesion in the scalp was seen, but there was no bone invasion in our case. After local excision of the scalp lesion, the patient with histologically confirmed well-differentiated FTC was identified from a retrospectively maintained database. A minimum of 10 tissue blocks were examined 2 times by specialists. All specimens were evaluated using hematoxylin eosin staining under light microscopy. Histopathological examination of the specimen revealed scalp metastases from FTC (**Figure 1**). Initial full blood count, thyroid function tests, and electrolytes were normal. Thyroid USG demonstrated a 1x1 cm nodular lesion with both solid and cystic materials. The patient had initially undergone bilaterally total thyroidectomy. Intraoperative findings were approximately 15x14 mm in diameter, and 35 grams on the right thyroid mass (**Figure 2**).

The tumor was classified according to the World Health Organization classification.[5] It was defined as

tumor exhibiting no infiltration of adjacent thyroid tissue. The pathological examination revealed a well-differentiated FTC with a metastasis of the scalp, as well. The postoperative course was uneventful, and the case was discharged on the third postoperative day. The patient was replaced of thyroid hormone, and a whole body scan with iodine-131 was performed 6 months later. It was found normal. The patient is still living healthy with replaced thyroid hormone in November 2010.

Discussion. Metastatic tumors presenting as soft tissue lesions are relatively seldom, and may be the source of diagnostic confusion, both clinically and microscopically.[6] The FTC includes a spectrum of neoplasms with varying propensity for metastasis. Recent reports point out scalp metastasis of primary FTC rarity, and that the diagnosis can come as a surprise on histological examination. Bone metastasis takes place 10-40% with skull metastasis accounting for 2.5-5.8% of bone metastases.[1] Some authors claimed that patients usually have a long clinical course before the diagnosis of skull lesion, and presenting features of the metastases usually include a palpable scalp tumor, exophthalmos, disturbance of consciousness, hemiparesis, and headache.[1]

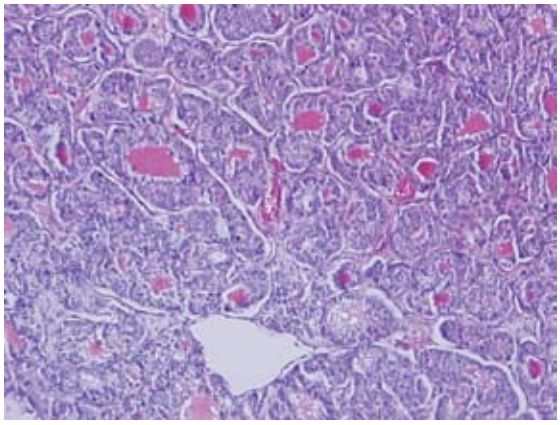

Figure 1 - Follicular apperance of the carcinoma as seen from the right occipital lesion biopsy specimen (Hematoxylin & Eosin x100).

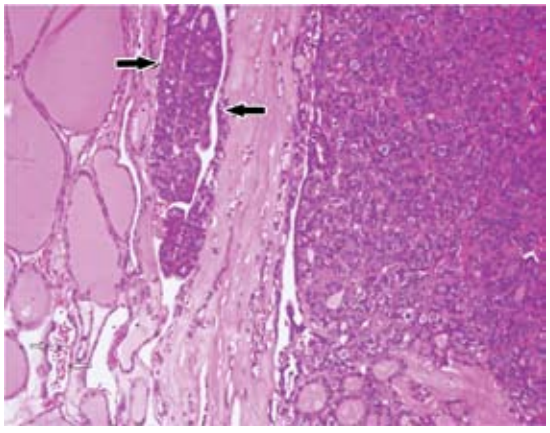

Figure 2 - Vascular invasion (arrows) of the follicular carcinoma as shown on the thyroidectomy material (Hematoxylin & Eosin x100).

Dermal lesion typically occur as slowly growing erythematous purple plaques or nodules usually in the scalp, face, or neck.[1] How the scalp comes to be involved is not known as yet.[1] Up until 2000, 41 patients of cutaneous metastasis from well-differentiated thyroid cancer have been reported.[4] In recent years, a few confirmed cases were declared.[7] Sevinc et al[7] reported a case of an asymptomatic 58-year-old woman with FTC who initially presented with a soft tissue mass on the right scapular region. An incisional biopsy specimen of the soft tissue metastasis showed thyroid follicular neoplasm. Rodrigues and Ghosh[8] in 2003 reported a case with soft tissue metastasis of FTC on the forearm, and synchronous metastasis to the bone.

A follicular type and female gender were considered to be characteristic of such occurrence, when compared with papillary carcinomas.[9] Shamim et al[10] reported 2 healthy cases with no prior history of thyroid cancer, and presented with a solitary scalp lump. According to their results, neuroimaging of both cases showed osteolytic lesions spreading into the cranium, in which total excision and cranioplasty was performed. A microscopic examination confirmed metastases from well-differentiated FTC. Subsequent workup confirmed occult primary carcinoma of the thyroid gland in both patients. Kelessis et al[4] declared a 72-year-old woman with painless mass in the right supraorbital region with underlying bone destruction that proved to be metastasis from a well-differentiated thyroid carcinoma. The metastatic workup disclosed a huge liver metastasis and additional metastasis in the left iliac fossa. Quinn et al[11] in 2005 confirmed 4 cases as sacral region, scalp, and post-thyroidectomy scar with cutaneous metastasis FTC. Ghfir et al[12] in 2005 also reported a FTC as a case, who had metastasis with unusual localization on the abdomen, back and front left thigh. Lu et al[5] also presented a case with recently diagnosed retroperitoneal diffuse large B-cell lymphoma, and a non-tender large scalp-based swelling endured by the patient for 8 years. In their study, the scalp mass was an osteolytic involving lesion on imaging and diagnosed as metastatic thyroid carcinoma of the skull. This metastatic carcinoma was also secondarily expanded with diffused large B-cell lymphoma. This case illustrates a unique and previously unreported example of tumor-to-tumor metastasis, in

which both malignancies occur as metastatic tumors to the skull with soft tissue extension presenting as a large scalp mass. In 2008, Cupisti et al[13] reported a 76-year-old female patient who had a primary diagnosis of FTC 18 years ago. She had total thyroidectomy with bilateral neck dissection, and multiple reoperations for tumor relapse. Due to an irresectable local recurrence with tracheal infiltration, a tracheotomy was performed 2 years ago for this patient. Consequently, 5 sets of internal radiation therapy had been performed one year ago, then she was admitted to the clinic due to multiple intensively vascularized huge scalp metastases of a FTC.

Metastases are not an infrequent finding in the soft tissue, and they might present the initial manifestation of the disorder. Use of histopathological examinations are of importance for determining the cell type and arriving at the exact and correct diagnosis. Similar to our case, surgeons should always consider thyroid malignancy when a cutaneous mass is situated in the scalp with a solid or rubber-like lesions. Our data suggests that resection of the scalp might have a role in the management of tumors of primary origin, and also offer a strong argument in favor of performing metastasectomy for tumors in the absence of an obvious distant metastasis.

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