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Follicular variant papillary thyroid carcinoma with a twist

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ABSTRACT

BACKGROUND: We report an adnexal lesion, which turned out to be a metastasis to the scalp from a left sided follicular variant papillary thyroid cancer. The patient has had history of right multi-nodular goiter 10 years prior to presentation.
CASE PRESENTATION: A 75-year old lady presented with a cutaneous lesion about 1 year post left total thyroidectomy for FVPTC. She underwent surgical excision of the lesion and histology revealed it to be metastases from a thyroid carcinoma.
DISCUSSION: Cutaneous metastases from thyroid carcinomas are relatively uncommon in clinical practice. A worldwide literature review reveals that follicular carcinoma has a greater preponderance than papillary carcinoma for cutaneous metastasis and that the majority of skin metastases from either papillary or follicular thyroid cancer are localized to the head and neck, with the scalp as the commonest site.
CONCLUSION: Skin metastasis from papillary and follicular thyroid carcinoma is an uncommon occurrence and these lesions should be differentiated from primary skin tumors. They are very important to recognize as early recognition can lead to accurate and prompt diagnosis leading to timely treatment. The scalp has been found to be the commonest site of cutaneous metastasis that may appear benign.

1. Introduction

Papillary thyroid cancer (PTC) and follicular thyroid cancer (FTC) are follicular cell-derived carcinomas. Both are differentiated forms of thyroid carcinoma; characterized by slow growth and an indolent biological behavior. Differentiated thyroid cancers, which ordinarily behave in an indolent manner, can have unusual metastatic presentations and patterns [1]. Follicular variant papillary thyroid cancer (FVPTC) has a follicular architectural pattern but the nuclear features are that of the conventional PTC. It has also been hypothesized that FVPTC behaves in a similar way, clinically, to conventional papillary thyroid carcinoma [2]. However, on clinico-pathological features, FVPTC has been shown to have a lower rate of lymph node metastases, are more often encapsulated and shows extra-thyroidal invasion less often than PTC [2]. PTC is the most frequent type of thyroid malignancy, and the usual metastasis sites include the loco-regional lymph nodes. Distant metastasis is rare and usually involves the lungs, liver, bones and brain [3]. Spread through lymphatic route is common in papillary thyroid carcinoma but haematogenous dissemination leading to cutaneous metastases is rare. A solitary cutaneous lesion may be the first evidence of disseminated malignancy in a patient with occult papillary thyroid carcinoma [4]. Cutaneous metastases from thyroid carcinoma are relatively uncommon in clinical practice, but they are very important to recognize. Early recognition can lead to accurate, prompt diagnosis and timely treatment [5].

2. Case history

A 75 year-old woman presented in the medical outpatient with flu-like symptoms and cough for greater than a week. CXR (Fig. 4) showed multiple pulmonary nodules in both lung fields, more in lower zones. CT-Scan of Neck, Thorax and Abdomen and pelvis with contrast was performed. It revealed similar pulmonary findings but with a large-sized attenuation nodule in the left lobe of the thyroid and absent right thyroid lobe. There was also suspicious metastasis to the right lobe of the Liver. She underwent a CT-guided lung biopsy that showed features consistent with metastatic follicular carcinoma. Complete left thyroidectomy was performed. Histology confirmed a 25 mm sized FVPTC $pT_2N_0M_1$ tumor (Fig. 2). Post surgery patient was ablated with high dose I^{131} therapy. The patient was started on levothyroxine. Her thyroglobulin levels were >1000 μg/L pre and one month post surgery. It was monitored closely during subsequent follow-up.

Abbreviations: WBI, whole body scan; PTC, papillary thyroid carcinoma; FVPTC, follicular variant papillary thyroid carcinoma.

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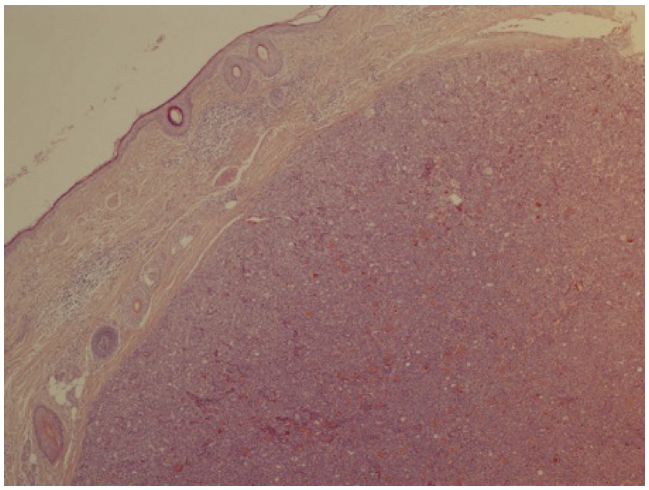

Fig. 1. Metastatic papillary carcinoma of the thyroid in the dermis and subcutaneous tissue of the scalp (H&E, 4x).

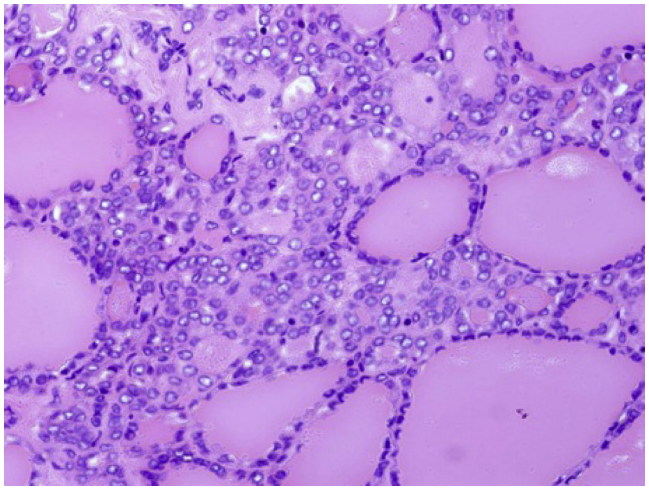

Fig. 2. Follicular variant papillary carcinoma of the thyroid. Follicles are of varying size and contain hyper-eosinophilic colloid. The classic nuclear morphology seen with this type is clear and enlarged, with margination of chromatin. (H&E, 20x)

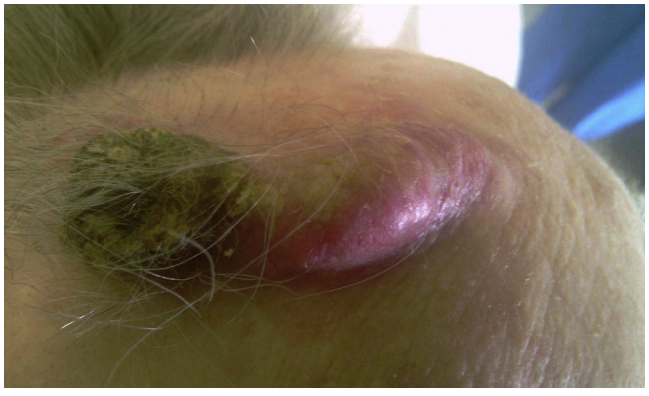

Fig. 3. Macroscopic picture of the Scalp metastases on the fronto-temporal aspect of the patient.

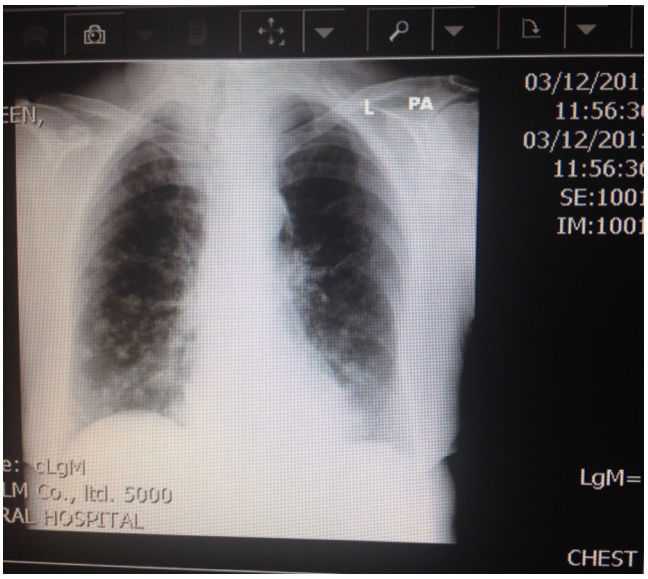

Fig. 4. Multiple pulmonary nodules in both lung fields, more in lower zones.

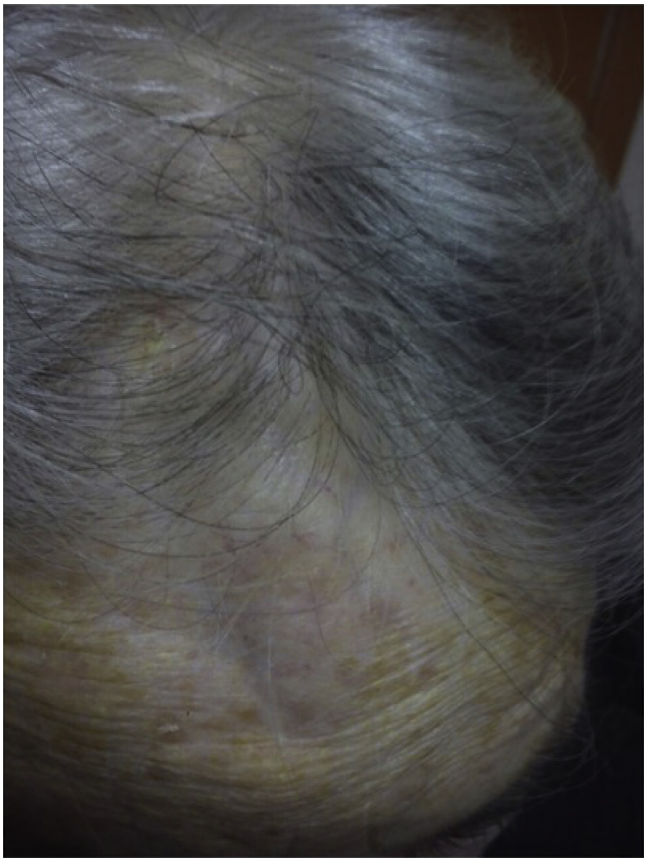

Fig. 5. Macroscopic picture of the healed scalp lesion at one year and 7 months (19 months).

About 1 year post left total thyroidectomy, patient presented in the surgical outpatient clinic with a hemangiomatous ridge-like lesion on the scalp (Fig. 3). The lesion was excised in toto and primary wound closure done. Histological evaluation showed a metastatic papillary thyroid carcinoma (Fig. 1). Patient has been continuously monitored in the radiotherapy and endocrine outpatients as well as in surgical outpatient. So far, a total of 4 doses of radioactive Iodine therapy for evaluation of response and progress have been instituted. The scalp wound has healed completely (Fig. 5). Her most recent NM WBI scans showed evidence of disease progression within the lungs. The disease progression is related to the recent rise in thyroglobulin assay of 9526.5 μg/L with normal