

Case Study

Recurrent follicular thyroid carcinoma presenting as a cutaneous lesion. An unusual case of pigmented skin lesion.

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Keywords:

follicular thyroid carcinoma, metastasis, pigmented skin lesion, cutaneous lesion.

Key Learning Points

What's already known about this topic?

Metastasis to the skin is a rare manifestation of thyroid carcinoma. When reported it is most commonly in the context of diffuse metastatic disease and occurring on the scalp.

Cutaneous spread of papillary thyroid carcinoma has been reported in the anterior neck, but we believe cutaneous spread of follicular thyroid carcinoma has not been reported previously.

What does this study add?

We report a case of cutaneous recurrence of follicular thyroid cancer to the upper neck distant to the thyroid. BTA guidelines now advise that Thyroid cancer patients can be discharged after 5 years and so new metastasis can present to dermatology.

This highlights the importance of treating pigmented skin lesions of the neck in patients who have had thyroid cancer with a higher index of suspicion for disease recurrence.

Introduction

Thyroid cancer deriving from the thyroid follicular cells include papillary, follicular, and anaplastic carcinomas. The most common thyroid cancer is papillary thyroid cancer and metastasis to locoregional lymph nodes occur in approximately 3 in 4 patients¹. Follicular thyroid cancer is the second most common and metastasis can occur in approximately 1 in 5 patients² through vascular invasion which causes haematogenous spread to the lungs, bone, brain, and liver³. Metastasis may occur prior to initial diagnosis and extensive extrathyroidal spread is a poor prognostic factor⁴. Skin metastases rarely occur in thyroid carcinoma but when reported, are seen most commonly in the scalp⁵. We describe a case of follicular cell carcinoma presenting seven years after treatment with a cutaneous lesion in the upper neck distant to the thyroid.

Case report

A 70-year-old woman had previously undergone total thyroidectomy and a right neck dissection of levels 2-4 and 6 for T3N0M0 follicular thyroid cancer.

Histology showed an incompletely excised follicular thyroid carcinoma with vascular invasion, but all 16 lymph nodes were negative for carcinoma. There was no need for further surgical excision as the patient was undergoing radioactive iodine therapy to eliminate any remaining microscopic thyroid tissue. A post-therapy Iodine-131 (I-131) scan showed no evidence of residual

disease and the patient was considered to be 'cured and disease free'.

The patient continued to have regular Ear, Nose, Throat specialist (ENT) follow up and remained disease free for seven years. On routine thyroid clinic review, there were no signs of recurrence however she reported a 5mm firm, nodular cutaneous lesion in the right upper anterior neck, not associated with or located near the thyroidectomy scar.

It appeared to be a pigmented vascular malformation in the skin, and it was fully excised under local anaesthetic. The excision measured 18x9mm to a depth of 5mm, with the lesion measuring 6x6mm to a depth of 5mm. Sections of this specimen showed skin infiltrated by a malignant-looking tumour with the histological appearance of a non-small cell carcinoma. The tumour extended from the superficial dermis to the deep dermis, abutting the underlying tissue without its obvious involvement (Figure 1). The tumour consisted of rounded epithelioid cells forming follicles filled with eosinophilic material. Immunohistochemistry showed the cells to be positive for thyroid transcription factor 1 (TTF-1) and thyroglobulin, consistent with metastatic follicular thyroid carcinoma (Figures 2 and 3). Interestingly, serum thyroglobulin had slightly increased to 11.0ug/L on her last clinic review however a Positron Emission Tomography – Computed Tomography (PET-CT) scan did not detect any areas of concern and the plan was to do a repeat blood test. Due to the confirmed new skin metastasis, the decision was made not to discharge her and instead to continue

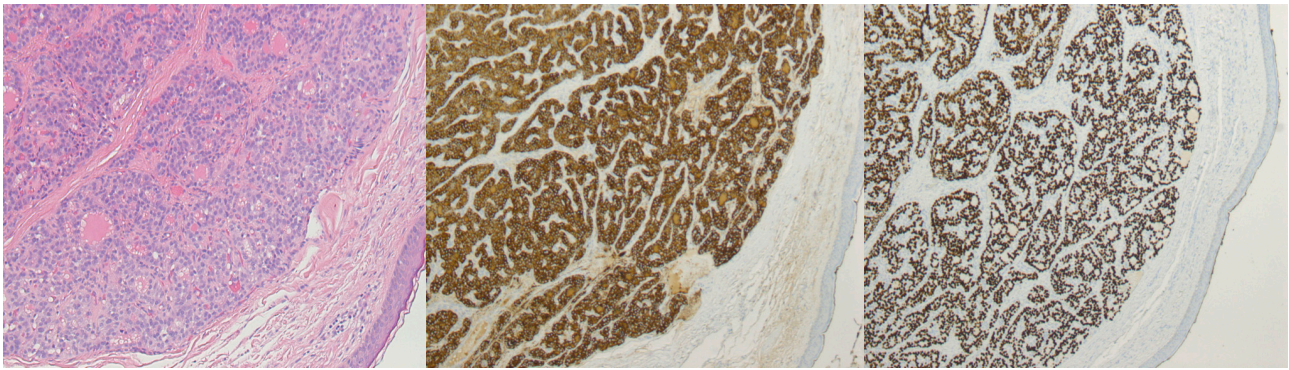


Figure 1: Intradermal deposit of tumour with follicular pattern. This tumour is not connected to the epidermis which raises a possibility of a metastasis.

Figure 2: The tumour shows strong positivity for Thyroglobulin, which indicates thyroid origin and, in combination with morphological findings, points towards metastatic follicular carcinoma.

Figure 3: The tumour shows strong positivity with TTF-1 indicating thyroid origin.

monitoring in regular Multi-Disciplinary Team (MDT) clinics with an annual thyroglobulin check and repeat PET-CT.

Nine months later, there has been no further evidence of disease recurrence and she is still under six monthly review.

Discussion

Cutaneous metastases are rare presentations of follicular thyroid carcinoma, but have been reported in patients with diffuse metastatic disease, most often in the scalp⁶. They are potentially associated with underlying lytic lesions of the cranial vault⁷ and cutaneous metastases as distant as the abdomen, back, and thighs have been reported⁸. Deposits in the facial skeleton and oral cavity occur, but are exceedingly rare⁹. Cutaneous deposits in the anterior neck have been reported in papillary thyroid carcinoma,¹⁰ but have not been reported previously in follicular thyroid carcinoma.

The proposed aetiology of this is haematological spread or implantation from needle biopsy, but the lesion site was distant from the thyroid bed implying this is unlikely to be needle implantation and more likely to be delayed or previously dormant haematological spread. The British Thyroid Association (BTA) guidelines are for patients to be discharged if disease-free at five years. However, we recognise that clinicians should be mindful that these lesions may present years later to specialists outside the thyroid MDT. Furthermore, such lesions may not have an overtly malignant appearance; the patient thought this lesion was non-worrying and was initially referred to a Dermatologist by her General Practitioner (GP) before being seen by an ENT subspecialist who offered to remove the lesion on an elective list.

Skin metastases are rare in follicular thyroid carcinoma, and most commonly reflect diffuse or recurrent metastatic disease. Firm skin nodules in the head, neck or torso in any patient with a known history of thyroid cancer should be treated with suspicion by the GP even if the patient has been discharged according to the new BTA-recommended five-year mark. Checking the latest thyroglobulin and excision for histology should be considered.

Conflicts of interest

None.

Funding

None.

Consent

The patient has consented to the publication of this case study.

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