

## Uncommon Skin Spread of Papillary Thyroid Carcinoma

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### Abstract

Most metastatic tumors of the skin originate from primary breast tumors in women, and lungs in men. Cutaneous metastases from thyroid cancer are uncommon. We report a clinical case of 80 year old female patient with a history of papillary thyroid carcinoma, for which she had a total thyroidectomy and adjuvant radioiodine treatment in 2015. The patient was lost to follow up until 2019, when she noticed multiple cervical nodules gradually increasing in size, hindering her daily life. These nodules turned to be thyroid papillary carcinoma metastases on histopathology.

**Keywords:** Papillary Thyroid Carcinoma; Skin Metastases

### Introduction

Papillary thyroid carcinoma is the most common endocrine malignancy, with a good prognosis following appropriate treatment [1]. It represents 85% to 95% of the differentiated thyroid cancers [2]. Although papillary thyroid cancer is indolent, it tends to metastasize to regional lymph nodes. However, skin or distant metastases are unusual and rare. We report the case of a woman operated for papillary thyroid carcinoma, who thereafter presented several skin lesions, for which further investigations showed subcutaneous metastasis of thyroid carcinoma.

### Case Report

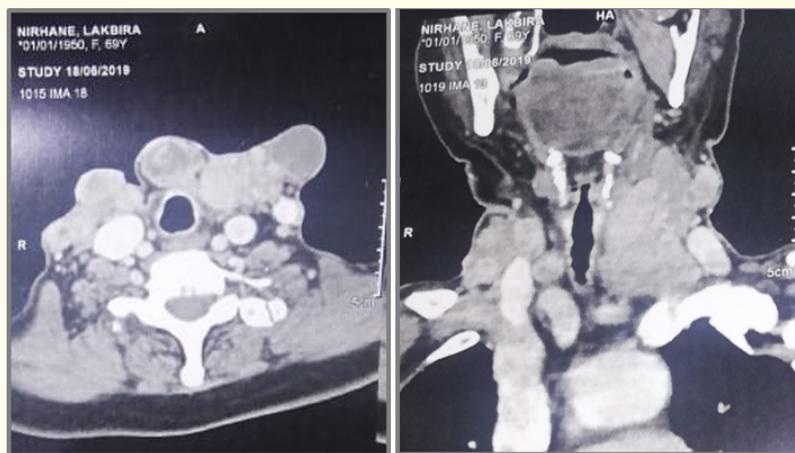
An 80 year old woman presented with several cervical nodules. Her past history documented right lobeisthmectomy in 2015 completed by totalization and lymph nodes dissection when the histopathology showed a papillary thyroid carcinoma. The procedure was followed by suppressive doses of levothyroxine treatment and adjuvant radioactive iodine therapy. After that, the patient disappeared from follow up, until 2019. She has been suffering from skin lesions increasing in size gradually.

On the admission, we noticed many masses of the neck, firm and painless on the palpation.



**Figure 1:** Macroscopic picture of the cervical cutaneous nodules before surgery.

CT scan was performed, showing subcutaneous thyroid tumor recurrence with associated lymphatic and bone involvement.



**Figure 2:** Left: axial section showing, right: coronal cut showing.

The patient underwent from a cleansing surgery. The histopathological examination showed a cutaneous papillary thyroid carcinoma metastasis.

## Discussion

Papillary thyroid carcinomas (PTC) represent the most common differentiated thyroid cancer. Surgical removal is the first line up treatment, followed by the radioiodine therapy [3]. Follow up is based on the measurement of TSH to adjust levothyroxine treatment and serum thyroglobulin, and positron emission tomography (PET scan) in case of suspicion of recurrence or persistence of the tumor [4].

In fact, PTC has a favorable prognosis with a 10 year survival rate of 80 - 95% [5]. Fortunately, less than 15% of patients develop distant metastases that commonly involve lymph nodes, lungs and bones [6]. Yet, thus far, the prevalence of unusual sites metastases is still unknown.

Madani., *et al.* in 2015 performed a systematic review of unusual locations of well differentiated thyroid cancer (WDTC) excluding lymph nodes, lungs and bones [7]. He showed that over 197 cases, 44% of them had brain metastases, 17% skin involvement, and 8% liver metastases. Metastases were also found in kidneys, eyes, pancreas, spinal cord, but with a very low proportion.

In order to prove which histological type is mostly involved in skin metastases, a worldwide literature review revealed that follicular thyroid carcinoma has a greater prevalence and predominance than papillary carcinoma for cutaneous metastasis [2,8].

Selçuk., *et al.* in a literature review of 38 cases found that follicular thyroid carcinoma (FTC) is the most common histologic type representing 46% of case followed by papillary thyroid carcinoma (PTC) at 35%, with 16% of cases having medullary thyroid carcinoma (MTC) and only one case of anaplastic carcinoma [9]. Thus, he concluded that the follicular type has a greater tendency than other thyroid carcinomas to metastasize to scalp as a distinct cutaneous area.

However, Erickson., *et al.* at 2007 in USA studied a series of 16 patients having a thyroid carcinoma with cutaneous metastases, showing that 11 of them were papillary thyroid carcinomas while 5 were follicular carcinomas [10].

Actually, the majority of skin metastases from thyroid carcinomas are localized in the head and neck area [11] and the scalp has been described to be the commonest site of cutaneous metastasis [12].

Therefore, it is advisable to follow up patients with thyroid carcinomas for life even after undetectable serum thyroglobulin or the absence of iodine detecting tissue beyond the thyroid site.

In our case, the skin lesions were very evident at the time of diagnosis. They could've been detected earlier if the patient was respecting her schedule of follow up.

### Conclusion

Cutaneous metastases from thyroid carcinomas are rare. Their appearance may mimic other dermatologic disorders; however definitive identification requires histological examination. Thus, clinicians should be aware of rare sites of metastases and insist on the importance of post-operative follow up.

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