



# A Case of Papillary Thyroid Cancer Metastasis to Skin: A Solitary Nodule Next to a Scar

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Dear Editor:

A 72-year-old female presented with a slowly growing tender nodule on her neck. She had been diagnosed with papillary thyroid carcinoma in 2006 and treated with total thyroidectomy and radioactive iodine therapy. She had no lymph node involvement at the time of diagnosis. The present nodule of concern had been growing slowly over several years at the site of her thyroidectomy scar. On exam, an erythematous 1.2-cm firm round nodule was appreciated on the patient's anterior neck, over the left lateral end of her scar (Fig. 1).

The excisional specimen reveals a predominantly dermal tumor with branching papillae lined by cuboidal cells with nuclear enlargement, nuclear overlapping, longitudinal grooves and pseudoinclusions with focal psammoma bodies (Fig. 2A, B). Immunoperoxidase staining is positive for TTF-1 and thyroglobulin (Fig. 2C, D). The results are consistent with papillary thyroid carcinoma metastasis to the skin.

The patient underwent computed tomography (CT) of the neck and chest, which showed no local recurrence at the original site of papillary thyroid carcinoma. However, a left parotid gland mass measuring 1.4 cm was noted on the CT, which was concerning for possible nodal metastasis. Fine needle aspiration of this mass was indeterminate. The patient opted to monitor the mass.

Thyroid carcinoma is the most common endocrine malignancy, and papillary thyroid carcinoma is the most com-

mon thyroid carcinoma, accounting for 50% ~ 80% of cases<sup>1</sup>. Metastases are not unusual, appearing typically in lymph nodes, or more rarely in lung, bone, and the central nervous system<sup>1</sup>. Metastases to the skin are extremely rare, occurring in less than 1 in 1,000 cases, and usually in the context of disseminated metastatic disease<sup>2</sup>. Solitary skin metastasis in the absence of disseminated metastases is exceedingly rare, and the mechanism of metastasis is unknown<sup>3</sup>. Although it has been established that fine needle aspiration can seed cancer cells in the skin with resulting cutaneous



**Fig. 1.** Nodule on neck. We received the patient's consent form about publishing all photographic materials.

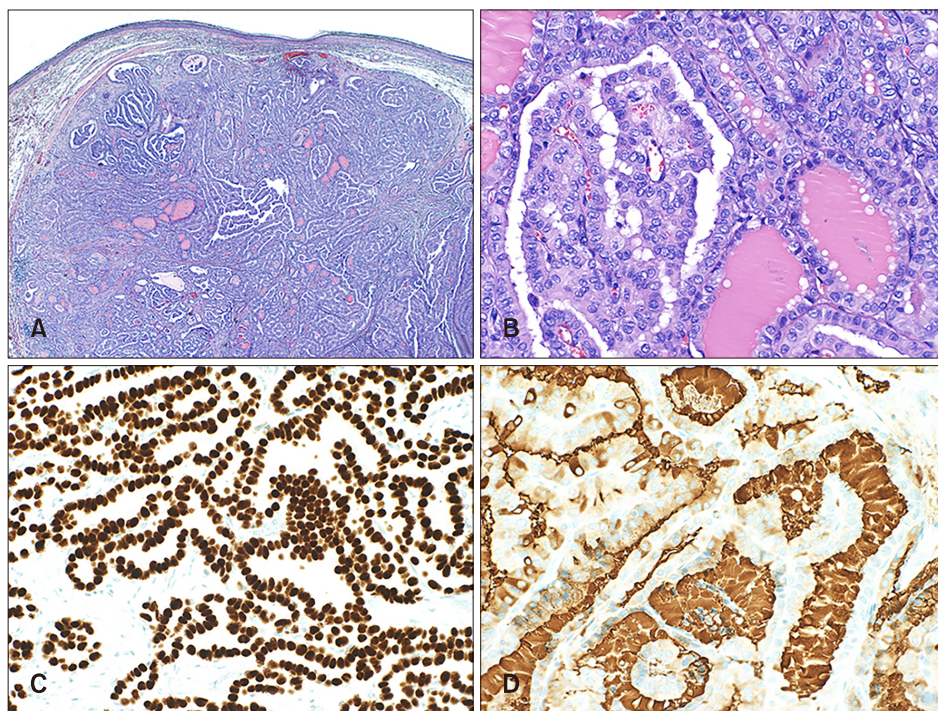
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**Fig. 2.** H&E, original magnification  $\times 20$  (A),  $\times 200$  (B), TTF stain,  $\times 200$  (C), thyroglobulin stain,  $\times 200$  (D).

tumor recurrence, this clinical presentation lacks features consistent with tumor seeding, specifically recurrence in a linear arrangement away from the surgical incision site<sup>4,5</sup>. The differential diagnosis of cutaneous metastasis of papillary thyroid carcinoma at the site of a surgical scar includes keloid, post-thyroidectomy suture granuloma, and inflamed branchial cleft cyst, among others. Keloids are fibroproliferative lesions occurring at sites of cutaneous injury as a result of excessive fibrosis during the wound healing process. Keloids are characterized by tightly packed collagen. Suture granulomas are granulomatous inflammatory lesions, sequelae of surgical procedures using non-absorbable suture. Suture granulomas following thyroidectomy have been described in the literature and may mimic cancer recurrence or lymph node metastasis. Branchial cleft cysts represent congenital remnants of embryological branchial arches. Branchial cleft cyst presents as painless compressible mass at the anterior border of the sternocleidomastoid muscle. The mass may wax or wane in size, and secondary inflammation and infection are possible. The cyst is lined by stratified squamous epithelium that may show p16 expression. We present this case of solitary skin metastasis of papillary thyroid carcinoma to raise suspicion for this entity in patients with the right clinical scenario.

### CONFLICTS OF INTEREST

The authors have nothing to disclose.

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