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From skin to thyroid: incidental finding of dual-variant papillary thyroid carcinoma in a patient with squamous cell carcinoma

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Dear Editor,

The occurrence of multiple primary neoplasms in a single patient is rare but well documented, and the incidental discovery of a previously undiagnosed thyroid carcinoma during lymph node dissection for another primary malignancy presents a unique diagnostic challenge. Previous reports have described incidental detection of papillary thyroid carcinoma during neck dissection for squamous cell carcinoma (SCC) of the tongue,[1] *via* Tc-99m PSMA imaging in a patient with a negative fine-needle aspiration (FNA) result,[2] and during oncologic staging for esophageal cancer.[3] These observations underscore the importance of meticulous diagnostic evaluation in patients with complex oncologic histories.

A 79-year-old male with a history of hypertension, dyslipidemia, Meniere's disease, and gastroesophageal reflux presented for evaluation of a cutaneous lesion on the right temporal region. His previous surgeries included resection of a parasagittal falx meningioma in 2005 and transurethral enucleation of the prostate in 2014. In February 2023, surgical excision of the temporal lesion revealed a moderately differentiated SCC. Imaging in June 2023 identified an oval hypoechoic nodule in the inferior pole of the right parotid gland (17×9×11 mm), and FNA in July 2023 confirmed SCC metastasis. In August 2023, he underwent total parotidectomy and right lateral neck dissection, including resection of the sternocleidomastoid muscle and spinal accessory nerve, followed by reconstruction with a pectoralis major flap. Histopathology confirmed metastatic keratinizing SCC in the parotid gland, with no SCC metastasis in lymph nodes; however, one cervical lymph node contained metastatic papillary thyroid carcinoma, previously undiagnosed (Figure 1).

A retrospective review of thyroid imaging revealed a benign FNA (Bethesda category 2) of a right thyroid nodule in 2016. Following this unexpected finding, endocrine evaluation showed normal thyroid function, autoantibodies, and calcium-phosphorus levels. In October 2023, the patient underwent total thyroidectomy with central compartment lymph node dissection, which revealed two foci: a 12-mm classic variant papillary thyroid carcinoma in the right lobe and a 10-mm follicular variant in the left lobe. Recovery was uneventful, and levothyroxine therapy was initiated. In November 2023, adjuvant radiotherapy (60 Gy to the parotid bed, 54 Gy to the right neck) was completed for SCC. In April 2024, the patient received radioiodine therapy (70 mCi I-131) after recombinant human thyroid-stimulating hormone (TSH) stimulation. A post-therapy whole-body scan and thyroglobulin level (0.2 ng/mL) showed no residual or metastatic thyroid carcinoma, and the patient remains in remission.

This case exemplifies the diagnostic complexity of managing multiple primary malignancies. The coexistence of SCC, meningioma, and dual-variant papillary thyroid carcinoma in a single patient,

without familial history or syndromic features, suggests sporadic tumorigenesis but raises the question of shared molecular mechanisms. Germline mutations in *TP53* (Li-Fraumeni syndrome) and *PTEN* (Cowden syndrome) have been associated with both SCC and thyroid carcinoma,[4] while other relevant genes include *NF2* and *CDKN2A*. Somatic *BRAF* mutations are also frequent in papillary thyroid carcinoma and may contribute to concurrent tumor development.

SCC is associated with an increased risk of other epithelial malignancies in the oropharynx, lip, and salivary glands, possibly due to common pathogenic pathways such as DNA repair defects or chronic UV exposure, tobacco use, and HPV infection. Some studies also suggest a higher incidence of respiratory and lung cancers among patients with SCC, supporting the hypothesis of systemic susceptibility.[5]

Several studies have documented the incidental detection of thyroid carcinoma during neck dissection for head and neck cancers. Fliegelman *et al.* reported five cases of thyroid tissue incidentally detected in lymph nodes during neck dissection, all managed with total thyroidectomy and central compartment dissection.[6] Similarly, León *et al.* identified unsuspected thyroid tissue in 11 of 1,123 neck dissections, with five showing occult carcinoma and six benign inclusions.[7] Mandapathil *et al.* described 26 cases of incidental metastatic papillary thyroid carcinoma, with no recurrence after either surgery or active surveillance.[8] Incidental thyroid carcinoma has been reported in approximately 1-3% of patients undergoing surgery for head and neck SCC,[9,10] underscoring the clinical relevance of systematic lymph node evaluation.

In conclusion, this case underscores the need for vigilance in patients with multiple primary malignancies and demonstrates how comprehensive histopathologic and multidisciplinary assessment can reveal clinically significant incidental findings. The co-occurrence of SCC and papillary thyroid carcinoma may reflect overlapping molecular and environmental risk factors. A personalized management strategy and coordinated follow-up remain essential to optimize long-term outcomes and facilitate early detection of future malignancies.

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Figure 1. Clinical course and anatomical sites of primary tumors.

This schematic illustration depicts the rare clinical case of a 79-year-old male diagnosed with three distinct primary tumors: a cutaneous SCC located on the right temple; a papillary thyroid carcinoma incidentally detected during neck dissection and subsequently confirmed in both thyroid lobes; and a previously resected parasagittal falx meningioma. The upper arrow indicates the anatomical progression from the cutaneous lesion to SCC metastasis in the parotid gland and cervical lymph nodes. The lower arrow represents the incidental finding of metastatic thyroid carcinoma within a cervical lymph node, which led to the final diagnosis of synchronous papillary thyroid carcinoma. This case highlights the importance of comprehensive oncological staging and lymph node assessment in patients presenting with head and neck malignancies.