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CASE REPORT

A Rare Occurrence of Papillary Carcinoma in Ectopic Thyroid Tissue: A Case Report

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Abstract

Ectopic thyroid tissue can be found anywhere along the path of the thyroglossal duct, from the foramen cecum to the mediastinum, and may present as either a lingual thyroid or a thyroglossal duct cyst. In uncommon instances, abnormal migration of the gland can lead to lateral ectopic thyroid tissue. Similar to the native thyroid gland, ectopic tissue can also undergo malignant transformation. In our case a 38-year-old female complained of neck pain and swelling that had persisted for 4 to 5 months. She visited the surgical outpatient department of the hospital, where she underwent surgery for excision of a mass located in the infrathyroidal region over the trachea. The excised specimen was sent to the histopathology department. Routine laboratory tests showed normal levels. Thyroid function tests were normal.This case illustrates a rare presentation of papillary thyroid carcinoma originating in ectopic thyroid tissue, while the primary thyroid gland remains unaffected by cancer.

Introduction

Ectopic thyroid tissue can be found anywhere along the path of the thyroglossal duct, from the foramen cecum to the mediastinum, manifesting as a lingual thyroid or a thyroglossal duct cyst. In rare instances, abnormal migration may lead to lateral ectopic thyroid tissue. This tissue is susceptible to malignant transformation, which is typically associated with a concurrent malignancy in the native thyroid gland.[1,2] The prevalence of ectopic thyroid tissue is estimated to range between 1 in 100,000 and 1 in 300,000 in the general population. It is more commonly observed in female patients, with a female-to-male ratio of 4:1.[3,4] Approximately 1 to 3% of all ectopic thyroid tissues are found in the lateral neck, with only few number of cases documented in the literature[2]. Here, we report a case of a female diagnosed with papillary thyroid carcinoma in the lateral neck, despite the absence of cancer in the thyroid gland.

Case Report

A 38-year-old female presented with neck pain and swelling that had been present for 4 to 5 months. She sought treatment at the surgical outpatient department of the hospital. Routine laboratory tests showed that her hemoglobin, total white cell count (TLC), differential white cell count (DLC), and platelet count were all within normal limits. Biochemical tests, including liver function tests (LFT) and kidney

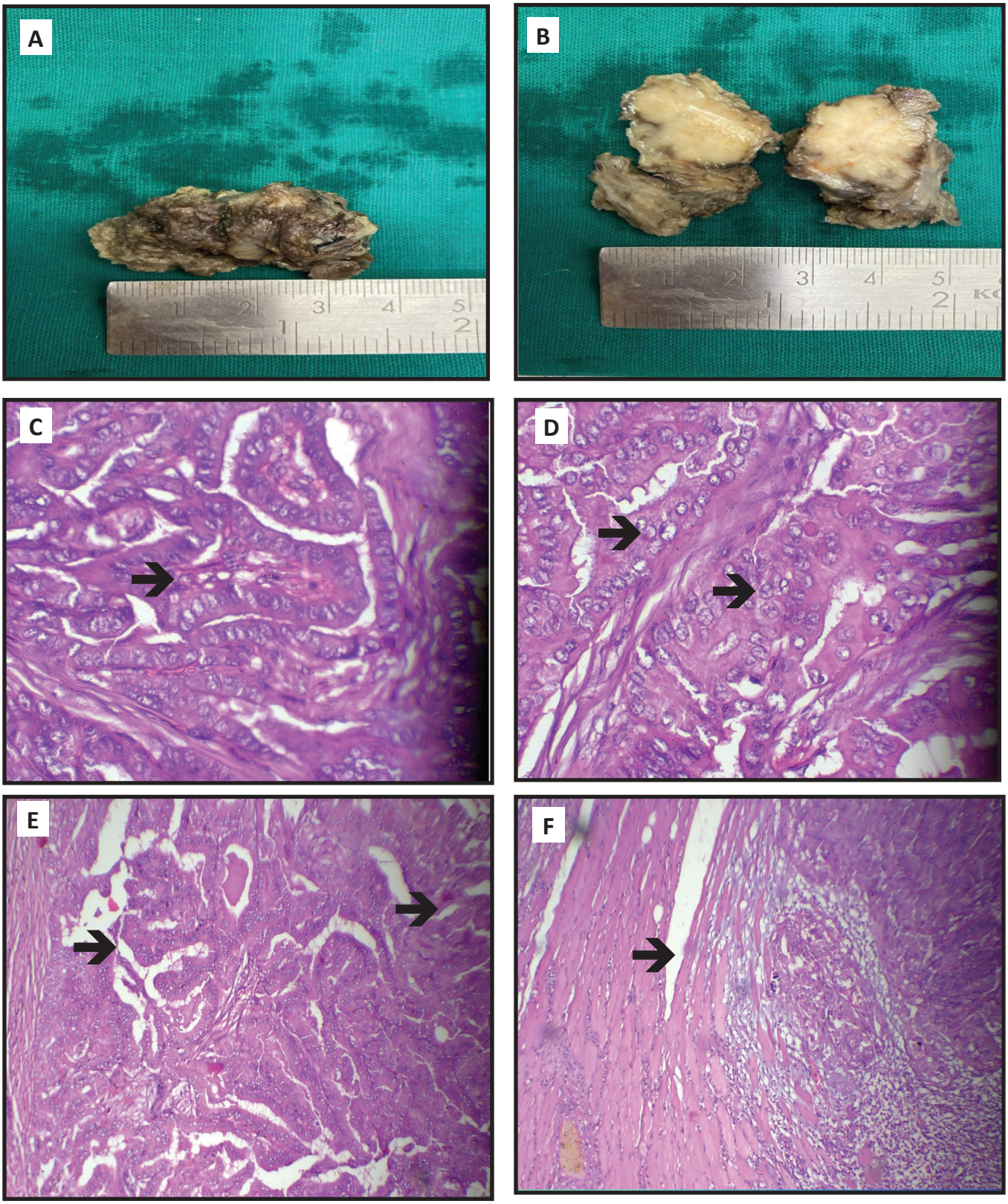

Figure 1: (A&B) Grossly, a single encapsulated soft tissue mass having irregular outer surface. Cut surface showed a solid, grayish white tumor with infiltrating margin. **(C)** *40X:* Papilla formation with fibrovascular core. **(D)** *40X:* Nuclear crowding, grooving, nuclear inclusions and empty looking nuclei. **(E)** *10x:* Lymphovascular invasion. **(F)** *10X:* Skeletal muscle invasion.

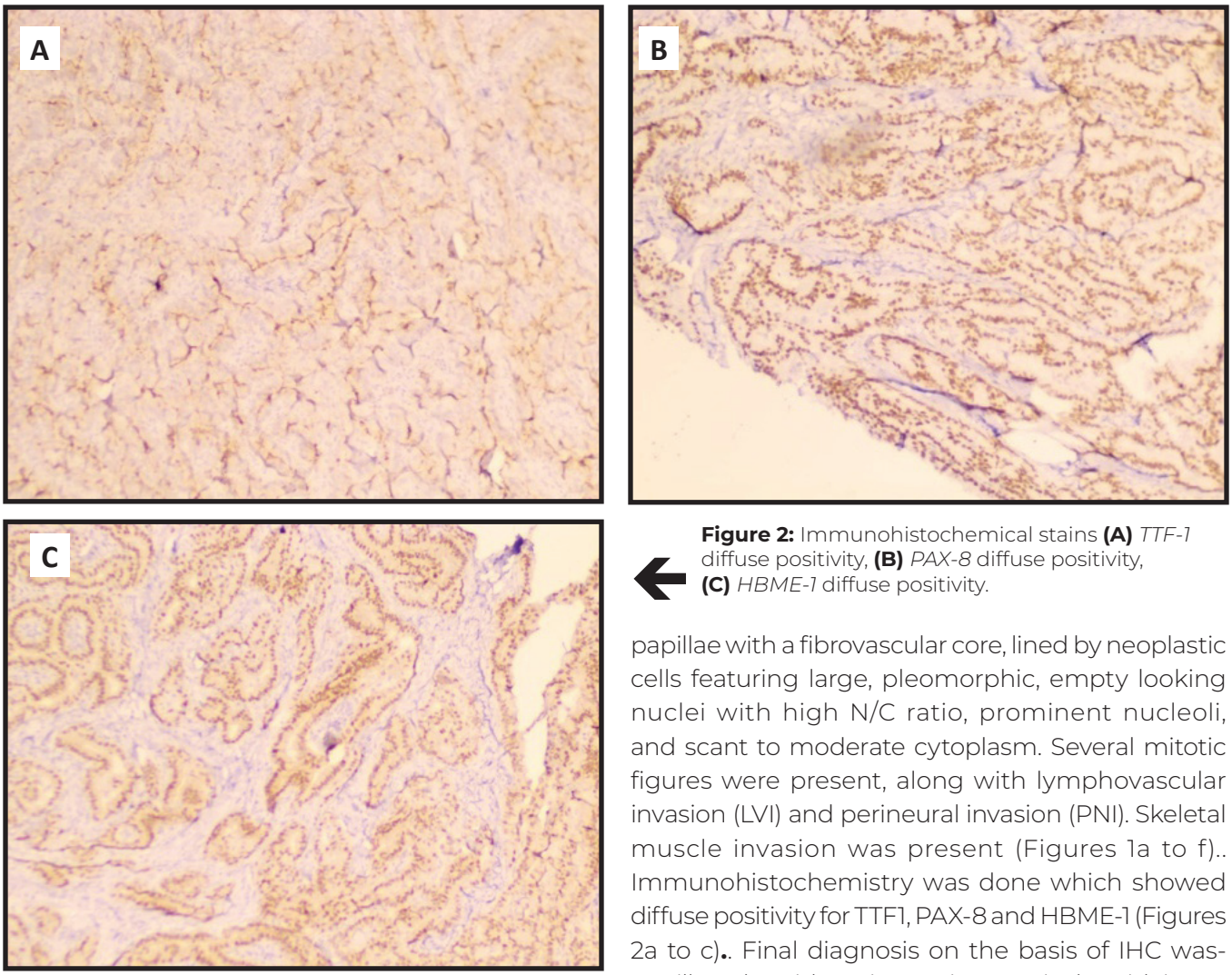

Figure 2: Immunohistochemical stains **(A)** *TTF-1* diffuse positivity, **(B)** *PAX-8* diffuse positivity, **(C)** *HBME-1* diffuse positivity.

function tests (KFT), were also normal, and thyroid function tests were within the expected normal range. MRI with contrast showed a well-defined, heterogeneously enhancing mass seen in the midline of the supra-sternal region, more towards the left side, showing partial diffusion restriction. The mass, measured approximately 25 × 22 × 24 mm, was located just below the thyroid gland and abutted the medial aspect of both strap muscles. A neoplastic lesion was suspected. The thyroid gland appeared normal. The patient was operated and the specimen was sent for histology examination. Grossly, a single encapsulated soft tissue mass was received measuring 4 × 3 cms in size having irregular outer surface . Cut surface showed a solid, grayish white tumor with infiltrating margin measuring 2 × 2 cms in size.

MICROSCOPIC EXAMINATION- The section demonstrated a malignant tumor organized in papillae with a fibrovascular core, lined by neoplastic cells featuring large, pleomorphic, empty looking nuclei with high N/C ratio, prominent nucleoli, and scant to moderate cytoplasm. Several mitotic figures were present, along with lymphovascular invasion (LVI) and perineural invasion (PNI). Skeletal muscle invasion was present (Figures 1a to f).. Immunohistochemistry was done which showed diffuse positivity for TTF1, PAX-8 and HBME-1 (Figures 2a to c)**.**. Final diagnosis on the basis of IHC was- papillary thyroid carcinoma in ectopic thyroid tissue.

Discussion

This case highlights the rare occurrence of papillary thyroid carcinoma in ectopic thyroid tissue with absence of any malignancy in the native thyroid gland. Ectopic thyroid tissue, whether benign or malignant, most commonly occurs in the midline region of the neck, such as in lingual or thyroglossal locations. However, the lateral neck is a less frequent site for the development of ectopic thyroid tissue, as observed in our case[5]. The likelihood of malignancy arising in ectopic thyroid tissue located in the lateral neck has been reported to be approximately 12% of all cases involving ectopic thyroid in this region.[2] The initial evaluation for patients with a high risk of developing thyroid malignancies in both native and ectopic sites typically involves ultrasonography, fine-needle aspiration biopsy, and cytological

analysis. The most appropriate treatment for such a case remains surgery, including total thyroidectomy, neck dissection, followed by radioiodine ablation, and rigorous follow-up.[2]

Conclusion

Malignancy in lateral neck ectopic thyroid tissue is an uncommon occurrence, and even rarer is the presence of a normal native thyroid gland. The diagnostic workup for such patients is similar to that of individuals presenting with a suspicious neck mass, involving ultrasonography and needle biopsy. Once cytology confirms the presence of suspicious thyroid tissue, the treatment of choice is surgical intervention followed by radioiodine ablation.

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