

Intrathyroidal Thymic Tissue in an Adult

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Sir,

Intrathyroidal thymic tissue is a rare entity and is usually found in the prepubertal pediatric population.¹ Adult cases of intrathyroidal thymic tissue are exceedingly rare. We present the case of a 31-year-old woman with a right thyroid papillary carcinoma and left intrathyroidal heterotopic thymic tissue.

A 31-year-old woman was referred for evaluation of a right lobe of thyroid enlargement. A thyroid function test revealed decreased serum thyrotropin (0.01 μ IU/mL; normal range, 0.35 to 5.50 μ IU/mL) and elevated free thyroxine (30.42 pmol/L; normal range, 11.5 to 22.7). All other parameters were normal. Ultrasonography demonstrated a hypoechoic mass with an ill-defined margin and multiple calcifications in the upper pole of the right thyroid lobe. Cytopathologic findings of fine needle aspiration from the right lobe of the thyroid were compatible with papillary carcinoma. A pre-contrast computed tomography (CT) scan revealed a thyroid mass with an ill-defined margin and heterogeneous density in the upper pole of the right lobe and a small hypoattenuated nodule in the upper pole of the left lobe (Fig. 1A). A post-contrast CT scan demonstrated heterogeneous enhancement of the right lobe of the thyroid mass and no enhancement of the left lobe of the thyroid nodule. A total thyroidectomy was performed. Grossly the cut surface of the right lobe of the thyroid showed a well-circumscribed, whitish solid nodule measuring 1.5 \times 1.4 cm. The left lobe of the thyroid revealed a whitish-yellow, well demarcated nodule

measuring 0.5 cm in maximum dimension. Histopathologic examination revealed the presence of a papillary carcinoma in the right lobe and heterotopic thymic tissue in the left lobe (Fig. 1B). The heterotopic thymic tissue of the left lobe consisted of mature adipose tissue, lymphoid tissue with outer cortex and inner medulla, and Hassall corpuscles (Fig. 1C). Small quantities of thyroid follicular epithelial cells were also embedded in the adipose tissue of the heterotopic thymic tissue. Various tissues adjacent to the thyroid can mimic a nodule and should be distinguished from true thyroid nodules. Of these tissues, thymic tissue is probably the most common. Aberrant thymic tissue may be found in the neck in up to 20% of the general population; however, intrathyroidal heterotopic thymic tissue is rare and is usually found incidentally during the prepubertal period.^{1,2} The thymus has its greatest relative size at birth and reaches its greatest absolute size by puberty, after which time it undergoes slow age-related evolution and is replaced by fatty tissue; therefore, adult cases of intrathyroidal heterotopic thymus tissue are extremely unusual.³ The thymus originates from the 3rd pair of branchial pouches (a rudimentary portion arising from the 4th pair) and descends to the superior mediastinum. The descents of the thymus and thyroid are closely related because of the proximity of the thyroid diverticulum to the 3rd branchial pouches. Therefore, maldescent of the thymus during early embryonic development, a sequestration of thymic tissue during descent, and a failure of involution can give rise to intrathyroidal heterotopic thymus.^{1,2} Heterotopic thymic tissue may undergo transformation to thymic hyperplasia or even thymic tumors, similarly to its normal counterpart. Rare cases of intrathyroidal epithelial thymoma (ITET), spindle epithelial tumor with thymus-like differentiation, and carcinoma showing thymus-like differentiation (CASTLE) have been reported.³ A preoperative diagnosis of intrathyroidal thymic tissue may help to guide management. Intrathyroidal thymus can be preoperatively diagnosed by a combination of sonography and cytologic examination. The sonographic appearance of thymic tissue has

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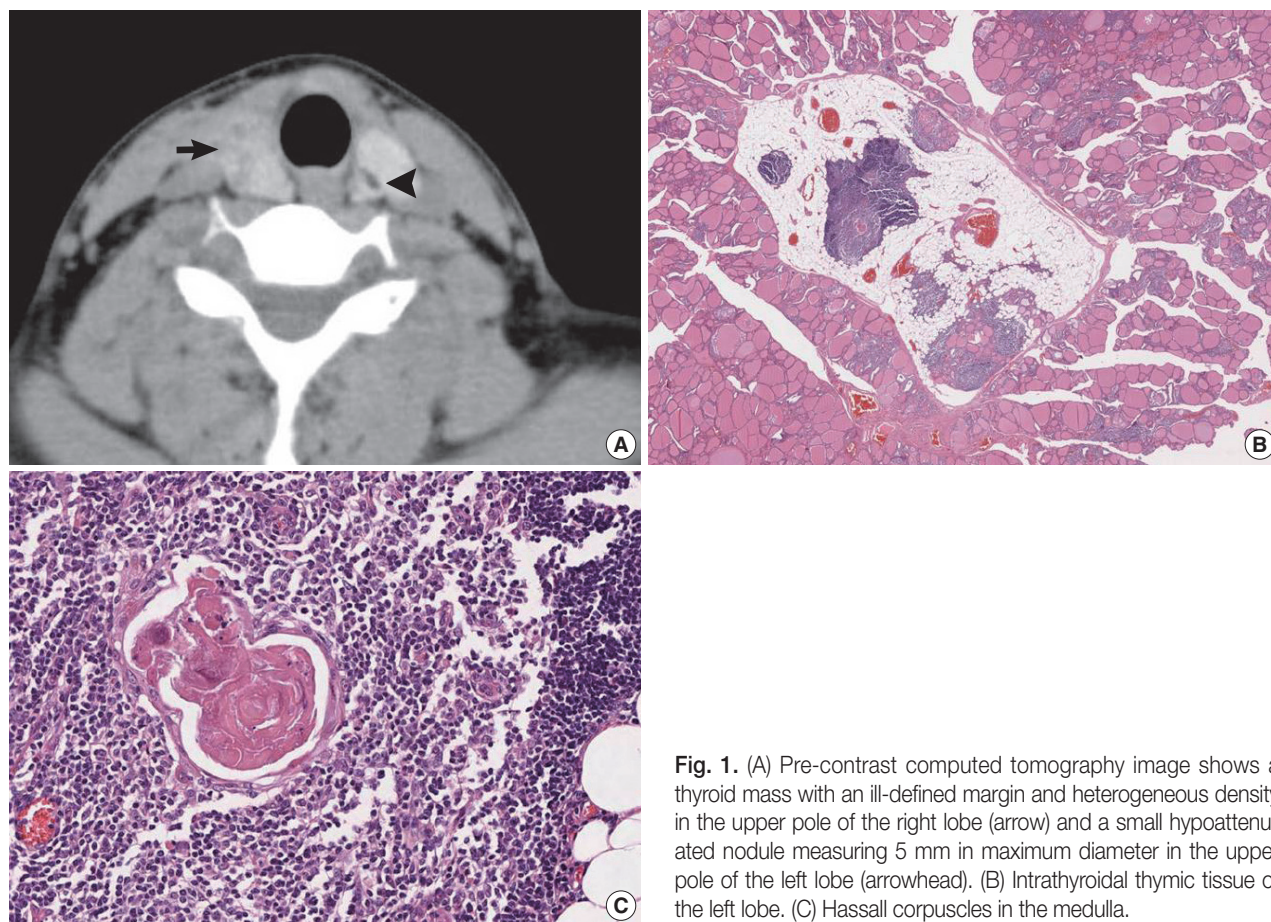


Fig. 1. (A) Pre-contrast computed tomography image shows a thyroid mass with an ill-defined margin and heterogeneous density in the upper pole of the right lobe (arrow) and a small hypoattenuated nodule measuring 5 mm in maximum diameter in the upper pole of the left lobe (arrowhead). (B) Intrathyroidal thymic tissue of the left lobe. (C) Hassall corpuscles in the medulla.

been suggested as unique, allowing a specific diagnosis of aberrant cervical thymus. Intrathyroidal thymic tissues were hypoechoic, solid nodules with smooth, straighter margins with echogenicity similar to the thymus on sonography.¹ The cytologic features of intrathyroidal thymus showed variable amounts of small and medium-sized lymphocytes with scant follicular epithelial cells. ITET/CASTLE is usually diagnosed as thyroid carcinoma of an unusual type because of their unusual cytologic features that differ from those of papillary, follicular, medullary, and anaplastic carcinoma by fine needle aspiration cytology.⁴ In conclusion, our case highlights the need for awareness of thymic remnants in the thyroid in adults for prevention of potential misdiagnosis as another tumor and for avoidance of unnecessary surgical treatment.

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