Intrathyroidal ectopic thymus mimicking a thyroid nodule

Clinical History:

A 9-year-old boy, with no significant past medical history, was referred to the pediatric radiology department for suspecting cervical lymph nodes.

Imaging Findings:

The ultrasound examination showed a normal-sized thyroid gland, associated with a well-defined elongated hypoechoic nodule in the inferior portion of the left lobe (Figure 1). It had angulated margins, with linear and dot echos that continued with the left lobe of the thymus gland (Figure 2 a-b). No suspicious lymph nodes were found.

Discussion:

The thymus is formed during the sixth gestational week from the third and fourth pharyngeal pouch. During the seventh week of gestation, thymic primordial buds elongate into the thymopharyngeal duct and migrate inferomedially to their final and usual position in the superior mediastinum. After reaching their destination, the thymopharyngeal duct atrophies and regresses. When the thymus fails to migrate appropriately, it may lead to a clinical spectrum of anomalies of the thymus such as ectopic or aberrant thymus. The ectopic thymic tissue may occur at any point along the path of descent (from the angle of the mandible to the manubrium of the sternum). [1]

The prevalence of thyroid nodules in the pediatric population is 0.2–2%, which is lower than in adults. However, the probability of malignancy is higher (20–73%). [2]

Ultrasound is the modality of choice for evaluating an intrathyroidal ectopic thymus. It is a non-invasive and radiation-free method. Its appearance is similar to normal thymus gland. [3] It is well-demarcated, with angulated borders, and has no internal vascularity or iso-vascular to adjacent thyroid parenchyma. It has a typical hypoechoic pattern with echogenic linear and punctuates foci portraying a “starry sky” appearance. Small internal speckles should be differentiated from microcalcifications. Routine visualization of the mediastinal thymus speckles facilitates this distinction. The localization is usually at the posterior aspect of the middle and lower thirds of the thyroid lobes, indicating the embryological relationship between the thymus and thyroid gland.

For the follow-up, only ultrasound is advised, since thymic tissue may spontaneously degrade and contract. However, if the diagnosis is uncertain, based on ultrasound findings, or if the mass has suspicious features, further investigation, including ultrasound-guided fine-needle aspiration or additional imaging should be performed. [4] [5]
In conclusion, intrathyroidal ectopic thymus is rare. It should be distinguished from malignant thyroid nodules. Typical ultrasonographic appearances and follow-up may suffice for the diagnosis and avoid other invasive methods.

**Differential Diagnosis List:** Intrathyroidal ectopic thymus., Thyroid nodule.

**Final Diagnosis:** Intrathyroidal ectopic thymus.

**References:**


Tritou I and Raissaki M. Intrathyroidal ectopic thymus tissue?: emphasis on details Intrathyroidal ectopic thymus tissue?: emphasis on details Radiol. Med2019:1–3. (PMID: [31286340](PMID:31286340))

Description: Transverse sonogram shows an elongated nodule with multiple hyperechoic foci in the left thyroid mid-portion. Origin: Pediatric imaging department, Pediatric teaching hospital-UM5-Rabat-Morocco 2020.
**Figure 2**

**a**

Description: Longitudinal sonograms show an elongated nodule with multiple hyperechoic foci in the left thyroid mid-portion. **Origin**: Pediatric imaging department, Pediatric teaching hospital-UM5-Rabat-Morocco 2020.

**b**

Description: Longitudinal sonograms show an elongated nodule with multiple hyperechoic foci in the left thyroid mid-portion. **Origin**: Pediatric imaging department, Pediatric teaching hospital-UM5-Rabat-Morocco 2020.