

CASE REPORT

Thyroglossal Duct Cyst Masquerading as a Thyroid Nodule

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Introduction

Thyroglossal duct cysts are the most common congenital neck masses occurring in the midline.¹ They usually present during the first two decades of life and generally are considered to be benign, with less than 1% being malignant.^{2,3} They arise from the tract that the thyroid gland takes for its descent during development.³ We present a case of a boy that presented with a left anterior neck mass ultimately found to be a thyroglossal duct cyst.

Case Report

A 10-year, 6-month-old boy presented for workup of a presumed thyroid nodule. He initially had been treated for a sinus infection and associated anterior neck lymphadenopathy, but the anterior neck enlargement did not resolve. He reported neck fullness, but no pain, and denied any increase in size of the mass over time. He denied any manifestations of hypo- or hyper-thyroidism and denied any history of radiation to the neck.

His past evaluation included negative thyroid peroxidase antibodies, negative thyroid-stimulating immunoglobulin, and a normal thyroid function panel. His family history was negative for thyroid malignancy or disease. Physical examination confirmed a firm mass in the region of the left thyroid lobe. It was non-tender and had no overlying skin changes. The trachea was not deviated and no other cervical masses were noted. The mass did not move with swallowing or with tongue protrusion. The larynx was

examined by a mirror and appeared normal with mobile vocal cords and no crepitus or protruding lesion.

Ultrasonography revealed a mass with a small cystic structure suspicious for malignancy (Figure 1). Fine needle aspiration (FNA) revealed a bland thyroid epithelium with nonspecific changes. Subsequent computed tomography of the neck revealed an intrathyroidal cystic structure in the left side of the neck (Figure 2). Because of the possibility of malignancy, the patient was referred for hemithyroidectomy.



Figure 1. Ultrasound shows the left-sided neck mass.

Histology from a left hemithyroidectomy revealed a benign cystic lesion attached to thyroid tissue, with peri-thyroidal soft tissue fibrosis, chronic and xanthomatous inflammation, and follicular hyperplasia with focal atypical epithelial changes.

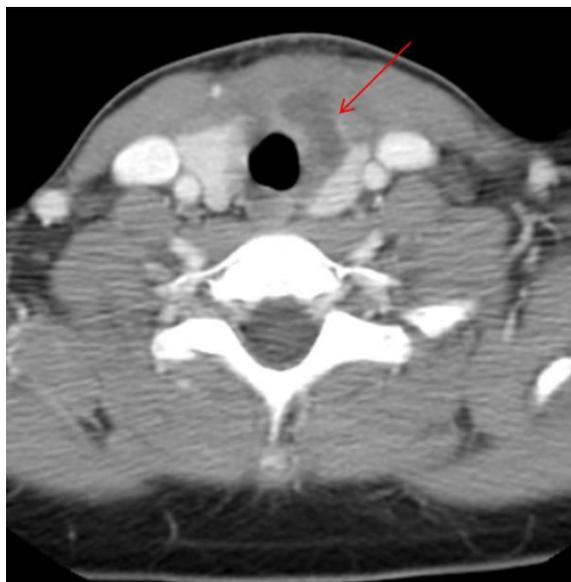


Figure 2. Computed tomography shows a large left-sided intrathyroidal cystic lesion.

Stains for CK19 and HBME-1 were negative, effectively ruling out papillary thyroid carcinoma. The cystic structure lined by bronchial epithelial cells was most consistent with a thyroglossal duct cyst.

The patient was discharged without incident and without need for thyroid hormone replacement.

Discussion

During the fourth week of fetal development, a tubular structure forms from the involution of the epithelium of the floor of the pharynx. The thyroid gland descends from the base of the tongue through this tract to reach its final destination by the seventh or eighth week of development. The tract then involutes and atrophies with the caudal portion remaining as the pyramidal lobe of the thyroid.^{3,4} If the tract persists, a thyroglossal duct cyst will develop. Theories attempting to explain this phenomenon speculate either: 1) a blockage in the tract that leads to the accumulation of secretions,

or 2) recurrent throat inflammation that leads to the cystic degeneration of the tract.²

Thyroglossal duct cysts are the most common cause of a congenital neck mass. Other items in the differential diagnosis of a painless neck mass would include ectopic thyroid tissue, a dermoid cyst, a branchial cleft cyst, a cystic hygroma, a lymph node, a lipoma, and a sebaceous cyst.⁵ Thyroglossal duct cysts, though, classically present as a painless midline mass. Only one percent present lateral to the midline and only one case reported a thyroglossal duct cyst in the mediastinum.⁵

Shahin et al.⁶ showed that FNA has a sensitivity of 62% and a positive predictive value of 69%, so it can help in establishing the diagnosis of a thyroglossal duct cyst in the correct clinical scenario. The cytopathological findings noted on FNA are not unique, though, and the clinical presentation and radiological findings must be considered in making a diagnosis.

Ultrasound is usually the first modality for investigation of neck masses in children since it is inexpensive, noninvasive, and does not expose the child to ionizing radiation or require sedation or intravenous access.³ Usually, thyroglossal duct cysts appear as well defined, non-echoic, thin walled masses. Mixed echogenicity usually is explained by infection of the cyst,⁴ though this was not the case in our patient. Surgical resection is indicated for cosmetic appearance, recurrent infections, sinus and fistula formation, and suspicion of malignancy.⁷

Clinicians, particularly endocrinologists, should consider thyroglossal duct cysts in the differential diagnosis of lateral neck masses.

References

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children. *Endocr Relat Cancer* 2006; 13(2):427-453. PMID: 16728572.

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