



PHOTO QUIZ FROM URGENT CARE

Thyroglossal Duct Cysts

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CASE HISTORY

An otherwise well-appearing 5-year-old presents to Urgent Care complaining of a skin problem. The child's father, the main source of history, points out a lump on the child's neck. The father states that he noticed the lump two or three days ago; he denies any fever or other cold symptoms. The patient reports no pain at this time and denies drainage, sore throat, or neck pain; neither patient nor father reports knowledge of an insect bite.

Upon exam, the provider notes a raised area in the center of the neck that is slightly red but not tender (see Fig. 1). The patient denies difficulty breathing or swallowing.

QUESTIONS

1. What is the differential diagnosis?
2. What diagnostic studies should be ordered?

3. What are concerning symptoms that would warrant emergent treatment?
4. What steps should be taken to confirm a diagnosis?
5. What is the definitive treatment for the diagnosis?

ANSWERS

1. The differential diagnoses include abscess, thyroglossal duct cyst, insect sting, cellulitis, and brachial cleft cyst.
2. Ultrasound, computed tomography (CT) scan, or magnetic resonance imaging (MRI) can be utilized to help identify potential cysts versus an infectious process.
3. While erythema, warmth, and tenderness might suggest acute infection, and "b symptoms" such as night sweats and weight loss suggest malignancy, concerning symptoms that warrant emergent treatment include an inability to handle secre-



Fig. 1. Photos of patient's neck taken in urgent care setting showing lump and redness from two different angles.

Photos by Briana A. Mack, PA-C.

tions, poor phonation, trismus, or any respiratory compromise.

4. The patient in this case was sent to the Emergency Department for further diagnostic imaging (see Table 1 for study details and results). Study results suggested a thyroglossal duct cyst, possibly infected.
5. The Sistrunk procedure is the standard surgical approach for a thyroglossal duct cyst. The procedure involves the removal of the cyst, along with a portion of the thyroglossal duct and the midline segment of the hyoid bone.

DISCUSSION

Thyroglossal duct cysts (TGDCs) are the most common congenital neck cysts, arising from the remnants of the thyroglossal duct, a developmental structure involved in the descent of the thyroid gland from the base of the tongue to its final position in the neck. TGDCs can present as midline neck masses, often becoming apparent in childhood or early adulthood.

The thyroglossal duct is an embryologic structure that is typically obscured as the thyroid gland moves to its position in the neck. If this duct does not completely shrink, a cyst can form. TGDCs are usually located in the midline of the neck, but can occasionally be found off-midline, reflecting variations in the duct’s developmental course.¹

Patients with TGDCs typically present with a midline neck swelling that moves with swallowing or tongue protrusion, a characteristic feature due to the cyst’s attachment to the hyoid bone.² The cyst may become infected, causing pain, erythema, and increased swelling. Chronic infections can result in sinus tract formation or abscess development, complicating diagnosis and treatment.³

Diagnosis is primarily clinical, based on the location and mobility of the cystic mass. Imaging studies such as ultrasound, CT scan, or MRI can assist in defining the cyst’s extent and ruling out other conditions.⁴ Ultrasound is particularly useful due to its ability to distinguish TGDCs from other cystic or solid neck masses.

The definitive treatment for TGDCs is surgical excision. The Sistrunk procedure is the standard surgical approach, which involves the removal of the cyst along with a portion of the thyroglossal duct and the midline segment of the hyoid bone. This technique aims to minimize recurrence by addressing the cyst and any potential remnants of the duct.⁵

Procedure	US SOFT TISSUE HEAD/NECK
Comparison	None
Reason for Study	Erythematous nontender lump anterior neck x 3 days
Findings	Complex fluid collection with peripheral flow measuring 1.7 x 1.3 x 0.6 cm
Abnormal Lymph Node	None
Neck Mass	None
Impression	There is a mildly complex fluid collection/ cyst at the midline anterior neck at the level of the hyoid bone. The findings are suspicious for a thyroglossal duct cyst, which is possibly infected. Correlate clinically; options for further imaging evaluation include an MRI or CT of the neck.

Recent studies emphasize the importance of complete excision in preventing recurrence, with reported recurrence rates ranging from 0% to 5% when the Sistrunk procedure is correctly performed.^{1,6} Infected cysts may require preoperative antibiotic therapy to manage infection before surgical intervention.

This patient was seen in the Emergency Department, treated with amoxicillin/clavulanic acid, and referred to the Ear, Nose, and Throat service for further treatment.

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