

An immobile thyroglossal duct cyst with tongue protrusion: A case report

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ABSTRACT

The thyroglossal duct cyst is one of the most common lesions in the midline of the neck and is found in around 7% of the population. They often present as painless neck swellings that move in response to tongue protrusion and during deglutition. We describe a case of thyroglossal duct cyst that was atypical in that the cyst was distant from the midline, it did not move in response to tongue protrusion, and the swelling was significant that resembled a colloid goiter. A 36-year-old male presented to the surgical outpatient department with a complaint of painless swelling in the neck for the past year. A 6.5×4.5 cm² swelling was observed in the anterolateral aspect of the right side of the neck extending to the thyroid notch. Neck ultrasound and fine needle aspiration cytology showed features suggestive of a thyroglossal duct cyst. The patient was prepared for the Sistrunk procedure for thyroglossal duct cyst excision. The patient was on regular follow-up postoperatively for 6 months, and no evidence of any recurrence was seen.

Key words: Colloid goiter, Sistrunk procedure, Thyroglossal duct cyst

Most congenital neck masses (up to 70% of all congenital neck anomalies) are thyroglossal duct cysts [1]. The age range in affected patients is from birth to 70, with 50% developing it before the age of 20, predominantly in males [2]. Ninety percent of thyroglossal duct cysts are located at or very near the midline [2]. These cysts typically move during tongue protrusion and deglutition.

The thyroglossal duct cyst case described in this case report was exceptional due to its location and immobility during tongue protrusion.

CASE REPORT

A 36-year-old male presented to the surgical outpatient department with a complaint of painless swelling in the neck for the past year. A detailed history was collected from the patient after obtaining informed written consent. There was no history of any other distinct ear, nose, or throat symptoms and known co-morbidities. No relevant personal or family history was present.


The general physical examination was normal. The patient was found to be hemodynamically stable. Local examination of the ear, nose, and throat was found to be normal. Clinical examination revealed a 6.5×4.5 cm² swelling in the anterolateral aspect of the right side of the neck extending to the thyroid notch (Fig. 1). The swelling extended superiorly up to the inferior

border of the right side of the hyoid bone, inferiorly up to the right thyroid cartilage, and laterally up to the anterior border of the sternocleidomastoid muscle. It was mobile on swallowing but not moving with the protrusion of the tongue and no evidence of visible sinuses/scars/pulsations was observed over the swelling on inspection. On palpation, the swelling was firm in consistency; the surface over the swelling was smooth with a well-defined border and no fixity (mobile in both horizontal and vertical planes). No warmth/tenderness was present and able to get below the swelling. The fluctuation test and transillumination test were negative. No cervical lymphadenopathy was present. Following the clinical examination, our differential diagnoses were colloid goiter, branchial cyst, and thyroglossal duct cyst.

Ultrasonography (USG) neck revealed a well-defined lobulated anechoic lesion noted just below the hyoid bone and overlying the surface of the right thyroid cartilage in the right paramedian region measures 50.88×21.21×19.86 mm, which was suggestive of thyroglossal cyst. Both lobes of the thyroid and the isthmus are normal in size and echo texture (Fig. 2).

A thyroglossal duct cyst was suggested by a fine needle aspiration cytology (FNAC) smear that showed neutrophils and follicular cells with intranuclear grooves and intranuclear cytoplasmic inclusion bodies. The other differential diagnosis was ruled out as ultrasound and FNAC were suggestive of a thyroglossal duct cyst.

A diagnosis of thyroglossal cyst was made using clinical history, clinical examination, and investigation. All standard blood tests were performed and confirmed to be in the usual

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range. After a complete pre-anesthetic evaluation, the patient was scheduled for a Sistrunk procedure. The airways were thoroughly examined. Mallampati Grade was 2, and an X-ray of the neck's anterior and lateral surfaces revealed no abnormalities. Indirect laryngoscopic examination was normal. Fitness was obtained for surgery and the procedure was executed.

Under general anesthesia with orotracheal intubation, the patient was laid down in a supine position with the neck extended, and parts painted and draped (Fig. 3a). Local infiltration was given with 1% lignocaine with 1:1,00,000 epinephrine to obtain a clear bloodless field. Over the swelling, a horizontal skin crease incision was created. The subplatysmal flap was elevated as the incision deepened. Strap muscles were divided into midline and retracted laterally. The swelling was separated from the adjacent structures (Fig. 3b). The thyroglossal duct tract can be seen and tracked in multiple places. In the middle region, the suprahyoid and infrahyoid muscles are released, allowing the hyoid bone to be seen and defined. The cyst and the duct were excised along

with the body of the hyoid bone (Fig. 3c and d). High ligation was done and the specimen was removed (Fig. 3e). After complete hemostasis, the suction drain of size 22 was fixed. Strap muscles were approximated at midline. The operation site was closed in layers (Fig. 4a). The patient withstood the procedure and the specimen was sent for histopathological examination. Antibiotics and analgesics were administered accordingly to the patient after surgery.

The diagnosis of thyroglossal duct cyst was confirmed through histological analysis. His recovery after the operation was uneventful, with no complications and no recurrence (Fig. 4b).

DISCUSSION

The failure of the thyroglossal duct to adequately seal results in the persistence of a thyroglossal duct cyst, an embryological remnant [1]. These midline neck masses are more prevalent in children than in adults. Thyroglossal cysts occur in roughly 7% of people worldwide and predominantly in males [2]. It usually occurs around the 10th week of pregnancy; however, if there is any duct remnant that is still present, a cyst may form in the thyroglossal duct. Papillary carcinoma, which has a 1% probability of developing, can become malignant [3]. The thyroglossal duct can persist and exist as a tract, duct, or cyst anywhere between the foramen caecum and the thyroid gland [2].

The following locations were reported in a meta-analysis of 381 thyroglossal duct cysts by Allard RH: 2.1% lingual, 24.1% suprahyoid, 60.9% thyrohyoid, and 12.9% suprasternal [4]. Suprahyoid thyroglossal duct cysts usually occur in the midline, while infrahyoid thyroglossal duct cysts are para-midline, similar to the present study. Thyroglossal duct cysts are more common in children under five than in individuals over 20 years of age, although roughly one-third of cases – like the one in the present case report – can also be seen in people in their fourth decade of life [5].

Patients with thyroglossal duct cysts usually present with midline upper neck cystic swelling, causing no symptoms but may be slightly tender. The cyst is soft, cystic, and fluctuant and moves with deglutition and protrusion of the tongue. The

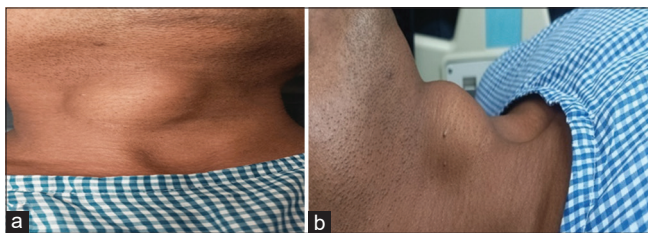


Figure 1: (a) At presentation, the swelling is centered on the right side of the neck; (b) Pre-operative photograph of the cyst (side view)

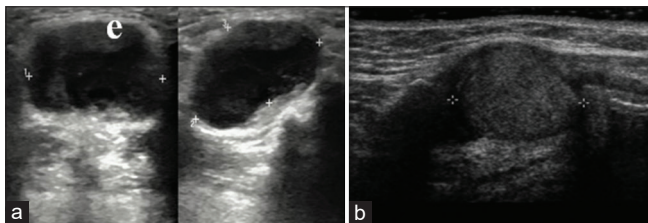


Figure 2: (a and b) Ultrasonography neck revealed a well-defined lobulated anechoic lesion noted just below the hyoid bone and overlying the surface of right thyroid cartilage in the right paramedian region measures 50.88x21.21x19.86 mm

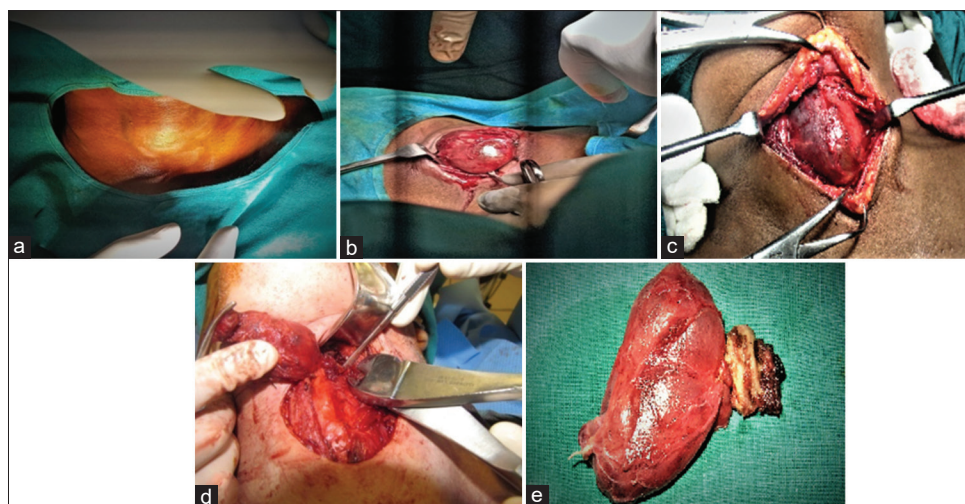


Figure 3: (a-e) Surgical procedure

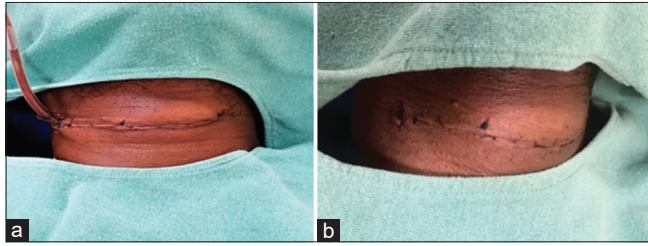


Figure 4: (a) The operation site was closed in layers; (b) Post-operative wound after 3 weeks

degree of mobility is determined by the cyst's size; larger cysts have limited mobility [2]. The fact that the swelling did not move during the tongue protrusion is most likely due to the big size of the cyst in our case. In addition, we discovered that the cyst was attached to the thyroid cartilage during surgery; to some extent, these adhesions can potentially contribute to the limited movement of the swelling.

These cysts frequently appear as hypo-echoic regions on USG. A thyroglossal cyst typically shows up on a computed tomography (CT) scan as a smooth, well-circumscribed lump anywhere along the thyroglossal duct's path. On contrast-enhanced CT images, peripheral rim enhancement is frequently seen [6].

The Sistrunk procedure is the standard treatment for thyroglossal duct cysts [7]. The center third of the hyoid bone is removed during the Sistrunk treatment, which carries a low risk of recurrence (2.5%) [8]. The recurrence rate is 85% if the center of the hyoid bone is left in place [9]. One week after surgery, the patients can typically resume their normal schedule at work or school [10]. Thyroglossal duct cysts can have a variety of differential diagnoses, including branchial cleft cysts, dermoid cysts, cystic hygromas, epidermoid cysts, thymic cysts, bronchogenic cysts, midline cervical clefts, and midline anterior neck inclusion cysts [11].

A colorless, viscous fluid is typically present inside thyroglossal duct cysts. Mucous glands might also be present. The cyst wall's epithelial lining might vary, although in most cases, a pseudo-stratified ciliated columnar lining and a squamous epithelium are present. Ectopic thyroid tissue is seen in the cyst wall in more than 60% of instances [7]. Carcinoma may develop in this tissue. In 1% of cases, thyroglossal cysts are thought to be complicated by cancer, typically of the papillary variety [7,12]. A thorough histological study is necessary not only to confirm the diagnosis of a thyroglossal cyst but also to rule out malignancy. In our case, there was no evidence of ectopic thyroid tissue.

CONCLUSION

As a result, this case demonstrates that a restricted range of movement during tongue protrusion and a lateral presentation of swelling, if occurring in a different age group than normal, do not rule out the possibility of a thyroglossal duct cyst diagnosis.

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