



A Case of Highly Located Thyroglossal Duct Cyst

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Congenital anterior neck masses comprise a rare group of lesions that are frequently found in children. The most frequent abnormalities are ectopic thyroid tissue and malformations of the thyroglossal duct, particularly the thyroglossal duct cyst.

The most frequent congenital neck mass is a thyroglossal duct cyst (TGDC), which frequently manifests in young patients as a painless lump in the middle of the neck. When an adult develops a lateralized neck lump for the first time, it may raise more concern for malignancy.

A thyroglossal duct cyst is usually suspected based on clinical examination, imaging can confirm the diagnosis, assess the extent, and evaluate for associated complications. We report the case of a sixty years old female patient presenting with a submental swelling, suspected to be a laryngocele initially. Surgery and histology revealed a giant and high located thyroglossal duct cyst.

Keywords: Thyroglossal; cyst; laryngocele; thyroid; neck mass.

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1. INTRODUCTION

“Thyroglossal duct cysts (TGDC) represent 70% of all congenital neck anomalies and are the most common type of head and neck congenital cysts” [1,2].

It often manifests as a midline neck lump that is asymptomatic and moves upward with swallowing and tongue protrusion [3,4].

TGDC typically manifests in kids and teenagers. However, those 20 years of age or older are the ones who receive the diagnosis in up to one-third of cases. Equal amounts of both genders are impacted [5,6].

There are a number of differential diagnoses that should be taken into account, including branchial cleft cysts, dermoid/epidermoid cysts, laryngocele, thymic cysts, lymphatic malformations, and metastasis.

In order to correctly diagnose an anterior neck mass, it is essential to have a thorough understanding of the embryologic process of thyroid development and be able to identify key landmarks such the foramen cecum, hyoid bone, thyroid cartilage, and strap musculature.

2. CASE REPORT

It's about a 60-year-old woman, with a medical past history of cholecystectomy, that was referred to our department for a 4-year developing submental mass, increasing in volume progressively.

The evolution was marked one year ago by the apparition of dyspnea in the dorsal decubitus, along with nocturnal snoring.

Clinical examination revealed a submental anterior mass, renitent, mobile, ascending during swallowing, measuring 5 cm.

Nasofibroscope revealed a bulging in both laryngeal ventricles, suspecting a laryngocele.

Ultrasound showed a submental cystic mass, with no vascular characteristic in the doppler.

The CT scan showed an anterior cystic mass, occupying the hyo-thyro-epiglottic loge, limited, measuring 49 x 35 mm. The CT scan was in favor of a thyroglossal duct cyst.

The patient underwent surgery, and intra-operative exploration revealed a thyroglossal duct cyst. The cystic lesion was dissected from the surrounding tissues and fully excised together with the center of the hyoid bone. Tissues from the superior aspect of the hyoid bone up to the foramen cecum were removed. The cyst was not ruptured and was removed completely.



Fig. 1. Patient's preoperative clinical image revealing an anterior cervical swelling



Fig. 2. Patient's preoperative nasofibroscope showing a bulging in both laryngeal ventricles, especially the left one

3. DISCUSSION

According to embryology, the thyroid anlage descends from the foramen cecum at the base of

the tongue to its final resting place in the pretracheal inferior midline neck as the thyroglossal duct develops. The duct often involutes, but if it persists, a clinical cyst may develop.



Fig. 3. Cervical CT scan showing an anterior cervical mass, in the hyo-thyro-epiglottic loge

“Thyroglossal duct remnant cysts (TGDCs) are among the most typical clinical neck lesions, with a bimodal age distribution in the first and fifth decades and an annual incidence of 2.2/100,000 in the population at risk. Although there is an equal proportion of the sexes, pediatric patients tend to be more masculine than adult patients, and vice versa” [7].

Cases typically present with a mobile, painless midline neck mass that is inferior to the hyoid bone (about 75% of cases), moving with a tongue protrusion.

10% of patients show signs of infection, including the development of fistulas, however children are more likely to do so than adults. The precise site of involvement is revealed through imaging studies.

The Sistrunk surgery, which also includes a cylinder of tissue at the base of the tongue and the middle region of the hyoid bone, is the preferred course of treatment for TGDC [8].

“According to histology, the lining of TGDCs is made up of either respiratory epithelium, squamous epithelium, or a combination of the two” [9,10].

The epithelium may become obscured by granulation-type tissue or a foreign-body giant

cell reaction when there is an infiltration of inflammation, which is always present. In 70% of cases, microscopic foci of ectopic thyroid gland tissue will be seen inside the cyst's wall or inside the nearby soft tissue. But sometimes, the foci are little and necessitate cautious examination, which may occasionally involve a TTF1 immunohistochemistry investigation.

“An associated thyroid gland cancer may be present in about 3% of cases; the majority (>99%) are papillary thyroid carcinomas. The anatomic site, histologic lining, and recognition of thyroid tissue aid in this differentiation between a branchial cleft cyst, a bronchogenic cyst, an epidermal inclusion cyst, or a dermoid cyst, which are all possible differential diagnoses” [9-11].

Several studies focused on adults with TGDC who presented as asymptomatic lateral neck masses; the diagnosis was unclear in all of these cases until pathological assessment following cyst removal. These examples highlight the idea that doctors examining asymptomatic lateral neck tumors in adults should consider TGDC [12,13].

4. CONCLUSION

Thyroglossal duct cysts (TGDCs) may occur in adults and may be lateralized, however they most frequently manifest in children as midline masses.

Surgery for TGDC requires the Sistrunk surgery, which involves removing the hyoid bone's center.

It should be noted that lesions that have TGDC on the differential diagnosis should undergo additional preoperative examination, in order to perform appropriate surgical treatment.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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