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## Large Thyroglossal Duct Cyst: A Case Report

## Authors' Contribution:

Study Design A  
Data Collection B  
Statistical Analysis C  
Data Interpretation D  
Manuscript Preparation E  
Literature Search F  
Funds Collection G

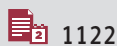
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Conflict of interest: None declared

**Patient:** Female, 36-year-old  
**Final Diagnosis:** Thyroglossal duct cyst  
**Symptoms:** Dysphagia • neck mass  
**Medication:** —  
**Clinical Procedure:** Sistrunk's procedure  
**Specialty:** Otolaryngology

**Objective:** Unusual clinical course**Background:** Thyroglossal duct cysts are the most common congenital neck cysts. They typically present in childhood and early adulthood, and average a size of 2–4 cm, but can also present in later adult life.**Case Report:** We present a case of a 36-year-old female patient with a very large midline neck mass, reaching the mandible superiorly. Patient history and physical examination, as well as computed tomography scan of her neck, confirmed the diagnosis of large thyroglossal duct cyst. She underwent Sistrunk procedure for thyroglossal duct cyst excision, and the specimen was sent for histopathological evaluation, which confirmed the diagnosis.**Conclusions:** Thyroglossal duct cyst should be considered as a differential diagnosis in older patients and in patients with a relatively large neck mass.**MeSH Keywords:** Thyroglossal Cyst • Thyroid Diseases • Thyroid Gland**Abbreviations:** TGDC – thyroglossal duct cyst; CT – computed tomography**Full-text PDF:** <https://www.amjcaserep.com/abstract/index/idArt/919745>

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## Background

The thyroid is the first endocrine gland to develop in utero [1]. Its development starts by the end of the fourth week of gestation, at the foramen cecum from an endoderm layer. During the fifth week of gestation, the thyroglossal duct begins to atrophy, and by the end of this week the thyroid gland would have been formed into 2 lobes connected by a middle isthmus. The thyroid descends to its anatomical location by the seventh week, and during the seventh and tenth weeks, the thyroglossal duct would have completely atrophied in most cases. Failure or incomplete involution of the thyroglossal duct could lead to the development of a thyroglossal duct cyst, sinus, or fistula.

Thyroglossal duct cysts are the most common congenital neck cysts, accounting for 70% of the cases. They typically present as a painless, midline neck mass that moves upon swallowing and tongue protrusion. About 50% of the cases are detected within the first 2 decades of life, but approximately 15% of cases are diagnosed after the age of 50 years. Most thyroglossal duct cysts are slow growing, averaging a size of 2–4 cm, but may enlarge rapidly following an upper respiratory tract infection [2]. The treatment of choice is surgical excision by Sistrunk procedure [3]; described in 1920, it necessitates the removal of the whole epithelial tract running from the foramen cecum to the cyst.

We present a case of an unusually large thyroglossal duct cyst in an adult patient.

## Case Report

The patient was a 36-year-old female who presented to our outpatient Head and Neck Clinic complaining of a slow-growing neck mass over the past 6 years. Over the course of her condition, she developed mild dysphagia to solid diet, but no shortness of breath or hoarseness of voice. She had no history of radiation exposure and no personal or family history of thyroid cancer, and no history of hypo- or hyperthyroidism. Her past medical history was unremarkable.

On examination she was found to have a large neck mass (Figure 1), measuring 6.0×6.0 cm, reaching the mandible superiorly, showing limited mobility with swallowing and not tender, with no palpable lymph nodes and no surrounding skin abnormality. Thyroid examination was difficult due to the large mass obscuring the gland. The rest of her examination was unremarkable. Differential diagnosis included thyroglossal duct cyst, thyroid malignancy, multinodular goiter, dermoid cyst, lymphadenopathy, and lipoma.



**Figure 1.** Preoperative photograph of the cyst.

Laboratory investigation for thyroid function tests showed an euthyroid state.

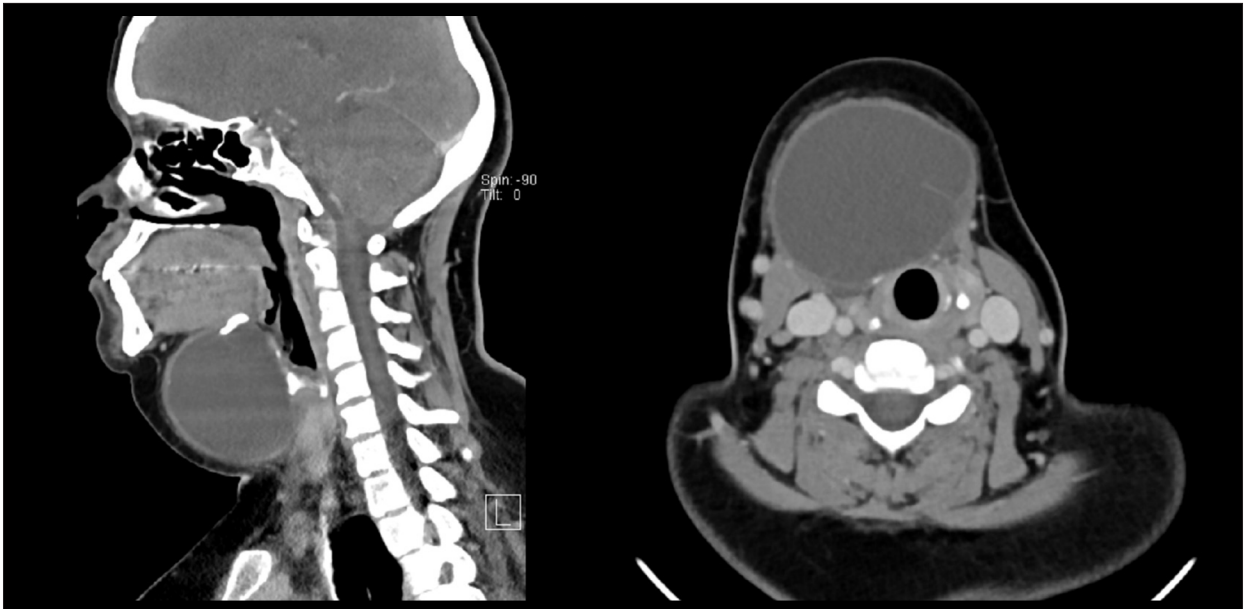
Computed tomography (CT) scan of her neck showed a well-defined, infrahyoid, midline cystic mass (Figure 2). The thyroid gland was visualized in normal position, with no ectopic tissue or abnormal nodules. Fine needle aspiration cytology (FNAC) was not performed. A clinical diagnosis of thyroglossal duct cyst was made, and the patient was counseled regarding surgery and booked for excision.

She underwent a Sistrunk procedure for thyroglossal duct cyst excision (Figure 3). Gross specimen was sent for histopathological examination (Figure 4). The mass weighed 131.5 grams and measured 7.5×7.0×5.0 cm. Serial sectioning revealed a cystic mass filled with brown gelatinous material. An adherent fragment of bone was present, measuring 2.5×1.5 cm. The diagnosis of thyroglossal duct cyst was confirmed histologically.

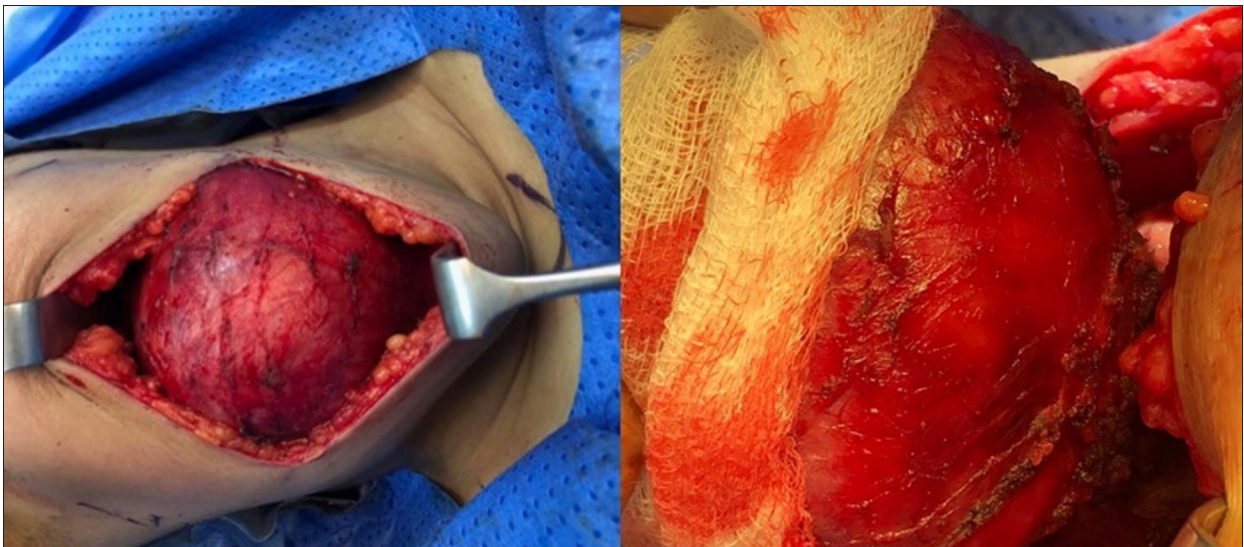
She had an uneventful recovery following the operation, with no complications and no recurrence to date.

## Discussion

Thyroglossal duct cysts are the most common type of congenital neck cysts, accounting for 70% of the reported cases. Although they are commonly encountered in the pediatric population, up to one third of cases are seen in adults [4]. Thyroglossal duct cysts are well reported in the literature, however, they mostly average a size of 2–4 cm. Larger cysts are less common, and more often reported in adult patients, probably due to the slow progressive growth of these lesions. In our case, the patient's presentation was not a typical one, as the thyroglossal duct cyst was very large, surpassing the usual average documented diameter.



**Figure 2.** Neck computed tomography scan with contrast showing a homogenous, midline cystic mass with an enhancing rim. Slight deviation to the left is noted on axial section (right).

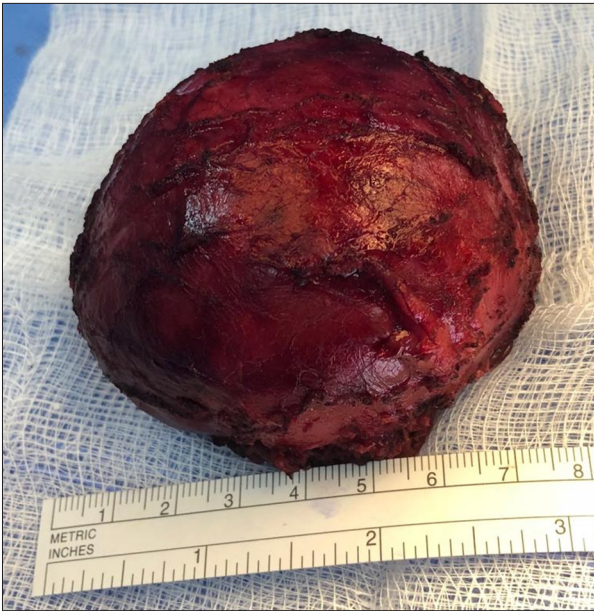


**Figure 3.** Intra-operative photographs of the cyst.

In a case series of 685 cases [5], the cysts ranged from 0.2 to 8.5 cm, however, the mean was 2.6 cm, indicating that smaller cysts are more common and make up most of the cases. In that same series, the mean diameter of thyroglossal duct cysts in adult patients was larger than in pediatric patients (2.8 cm and 2.1 cm, respectively), however, both averages represent the expected size of the cyst on presentation, and are relatively smaller than that documented in our case. In one review, the cysts were documented to be between 1.5–4 cm [6], and another paper reported a range of 0.5–4 cm (with an average of 1.9 cm) in children compared to 0.5–8 cm (with an average of 2.6 cm) in adults [7].

Six cases of large infrahyoid thyroglossal duct cysts have been reported in the literature. El-Ayman described a case of a giant thyroglossal duct cyst, measuring 9.2×7.6 cm on physical examination, in an 85-year-old male patient, who observed slow, progressive growth of the mass since he was 20 years old [8]. Another case was reported by Baisakhiya, the patient was a 65-year-old male with a huge, multilobular thyroglossal duct cyst, measuring 11×9 cm on physical examination [9]. McNamara described a case of an 85-year-old female patient who had a recurrent tongue hemangioma associated with a giant thyroglossal duct cyst, that measured 10×8 cm on examination and 11×4×3 cm upon removal and examining the





**Figure 4.** Thyroglossal duct cyst after excision; measuring 7.5 cm at the greatest diameter.

gross specimen [10]. Ramalingam reported a case of an adult with a cystic neck mass measuring 8×7 cm on physical examination [11]. Larger cysts have also been reported, measuring 12 cm [12] and a giant one at 30×24 cm [13] in a patient with schizophrenia. All patients underwent a Sistrunk procedure and had an uneventful recovery. Alavi and Gharabaghi described a case of a large thyroglossal duct cyst in a 55-year-old male,

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presenting as a middle mediastinal mass with no accompanying neck abnormality [14]; this is the only documented case of a large mediastinal thyroglossal duct cyst to date. Notably, all of these patients were older than the typical age of presentation with a thyroglossal duct cyst, allowing for the expected slow progressive growth of the mass, and the subsequent presentation as a giant cyst.

Interestingly, a common theme among most of these patients, was their awareness of a growing neck mass, but only seeking medical care once this mass started interfering with their activities of daily life.

## Conclusions

Thyroglossal duct cysts, although relatively common, could pose a diagnostic challenge if presenting in a different age group than usual, and if large in size; thus they should be considered as a differential diagnosis in older patients and in patients with a relatively large neck mass.

## Institution where work was done

King Abdul Aziz University Hospital, Riyadh, Saudi Arabia.

## Conflict of interest

None.