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Giant Thyroglossal Duct Cyst in an Elderly Patient: An Unusual Presentation

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Abstract

Introduction: The thyroglossal duct cyst (TDC) is the most common congenital neck cyst. It usually presents during childhood or early adulthood. However, in rare cases, giant forms can occur in elderly patients. **Observation:** This is the case of a 67-year-old patient treated for a large cervical mass evolving over about seven years. ENT examination and CT scan supported the diagnosis of a giant TDC. The patient underwent Sistrunk surgery. Histological analysis confirmed the diagnosis of TDC. **Conclusion:** Giant TDC is a rare form of cervical mass causing compression of the aerodigestive tract. Despite its size, complete excision using the Sistrunk technique ensures satisfactory control without recurrence.

Keywords

Thyroglossal Duct Cyst, Giant, Sistrunk Operation, Elderly

1. Introduction

Thyroglossal duct cysts (TDC) are the most common congenital cysts of the neck. They are congenital cervical malformations resulting from the failure of resorption of the thyroglossal tract, which connects the base of the tongue to the thyroid isthmus or to the pyramidal lobe. Their course is mainly marked by episodes of superinfection responsible for fistulization of these cysts and the risk of malignant transformation [1] [2].

They typically present in childhood or early adulthood with an average size of 2 to 4 cm, although the appearance of giant forms in elderly patients is quite rare [3] [4].

We report an unusual presentation of TDC in an elderly patient characterized by a giant size located above the hyoid bone in the submental region.

2. Observation

This concerns a 67-year-old patient admitted for the management of a large submento-maxillary swelling evolving for about 7 years. The patient's history includes bilateral blindness of undocumented etiology and poorly controlled hypertension. ENT examination showed a large, firm, painless, renitent, slightly mobile submental mass with healthy overlying skin, measuring 14 cm in its greatest dimension, exerting a mass effect on the floor of the mouth **(**Figure 1**).** The contrast-enhanced CT scan supported the diagnosis of a cyst developed at the expense of the floor with peripheral enhancement (Figure 2(a)-(b)**).** The differential diagnosis included a thyroglossal duct cyst and a floor of mouth cyst.

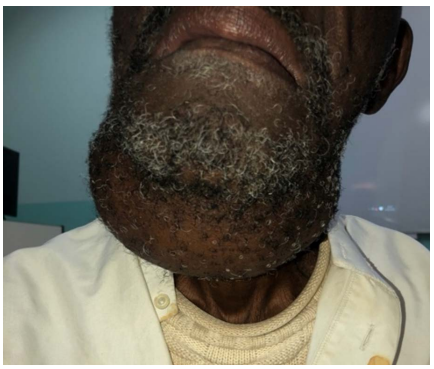
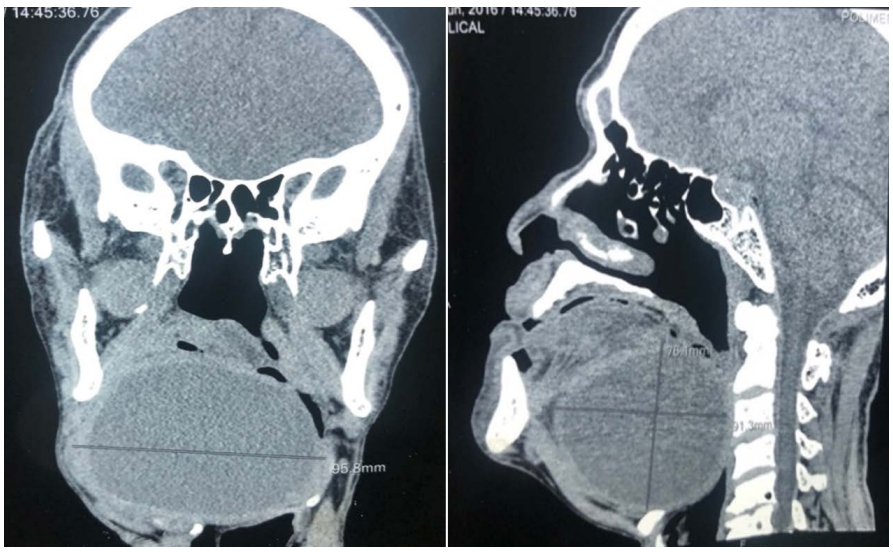


Figure 1. Large, firm, painless, renitent, slightly mobile submental mass with healthy overlying skin, measuring 14 cm in its greatest dimension



(a) (b)

Figure 2. (a) Coronal CT scan with contrast injection showing a cyst developed at the expense of the floor with peripheral enhancement. (b) Sagittal CT scan with contrast injection showing a cyst developed at the expense of the floor with peripheral enhancement.

The patient underwent an exploratory cervicotomy through an incision over the swelling. The dissection revealed a giant cystic mass. Accidental rupture of the cyst facilitated its dissection. There was also adhesion of the cyst to the infrahyoid muscles and pharynx causing a pharyngeal breach. The adherence of the cystic pouch to the hyoid bone along with the presence of pus at this level were strong arguments in favor of a thyroglossal duct cyst.

Excision was performed using the Sistrunk technique with removal of the entire cystic pouch, the hyoid bone body, and the muscular cone at the base of the tongue **(Figure 3).** Postoperative follow-up was marked by paralysis of the mental branch of the facial nerve. Histopathological analysis of the surgical specimen showed a cystic sac measuring 12 cm × 12 cm, confirming the diagnosis of TDC **(Figure 4)**.

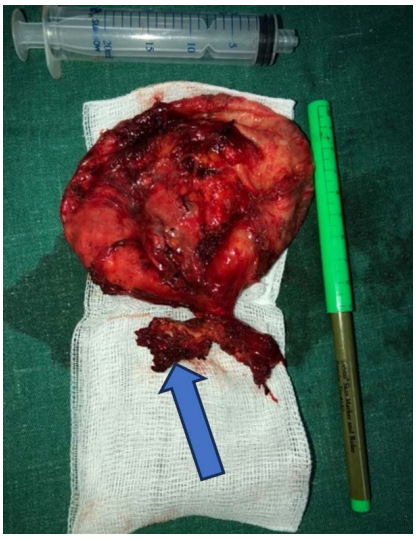


Figure 3. Intraoperative view of the cystic pouch, the body of the hyoid bone (arrow), and the muscular cone at the base of the tongue.

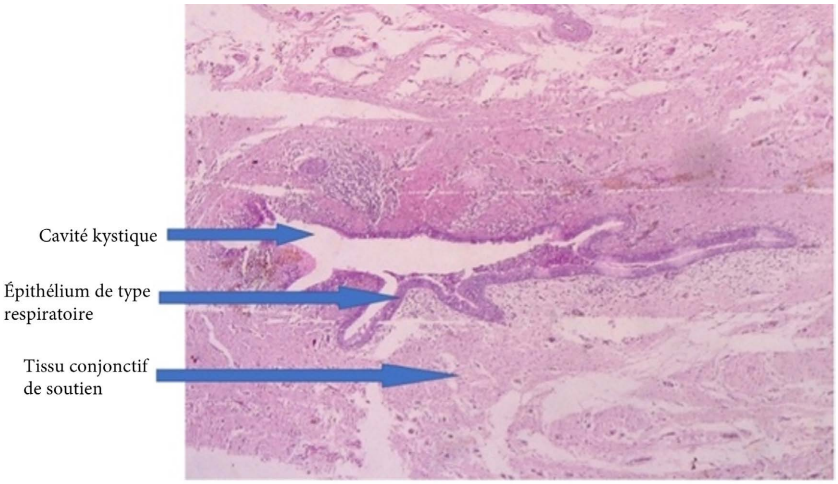


Figure 4. Microscopic examination showing a fibrous cyst wall lined by regular pseudostratified columnar respiratory epithelium with a lymphoplasmacytic inflammatory infiltrate and absence of thyroid follicles.

3. Discussion

The thyroglossal duct cyst (TDC) is the most common congenital malformation of the neck, accounting for 70% of cases [2]. In the embryo, the thyroglossal tract guides the thyroid gland from the base of the tongue to the anterior cervical region [2]. The literature notes a male predominance that is not statistically significant [1]. Approximately 50% of TDC cases are diagnosed within the first two decades of life, while about 15% of cases are diagnosed after 50 years of age [3].

TDCs can be located anywhere along the thyroglossal tract, usually beneath the hyoid bone, opposite the thyroid cartilage, or above the hyoid bone. Typically, they present as a painless midline cervical swelling, mobile upon tongue protrusion and swallowing [5] [6].

Our case is atypical, as the cyst was very large, measuring approximately 14 × 9 cm, more than four times the average size usually reported in the literature. The large size made the mass fixed upon tongue protrusion in our patient.

El-Ayman *et al.* described a case of a giant thyroglossal duct cyst measuring 9.2 × 7.6 cm in an 85-year-old male patient [7]. Another case was reported by Baisakhiya *et al.* in a 65-year-old man with a large multilobular cyst measuring 11 × 9 cm [4].

A prolonged delay before consultation was observed in these cases. Patients often seek medical attention only when the mass becomes compressive or interferes with daily activities. In our regions, factors such as low socioeconomic status, recourse to traditional healers, and diagnostic wandering in non-specialized health facilities contribute to this delay.

Frequent clinical manifestations reported in the literature include obstruction of the aerodigestive tract causing dysphagia or voice changes [8] [9].

Preoperative CT and MRI are complementary imaging modalities: CT provides excellent delineation of bony structures and calcifications, whereas MRI offers superior soft tissue contrast, allowing better assessment of cyst content and its relationships with adjacent neurovascular structures [10].

The standard treatment consists of excision using the Sistrunk procedure, which involves removing the cyst, the duct, the hyoid bone, and tissue along the duct up to the foramen cecum [11]. If the hyoid bone is not removed, the recurrence rate may be as high as 85%.

In our case, the accidental rupture of the cyst facilitated its dissection. We recommend deliberate decompression of the cystic sac to facilitate its mobilization, enhance the safety and precision of dissection, improve operative control, and minimize the risk of injury to adjacent neurovascular structures. Postoperative outcomes are generally straightforward. However, the removal of this large TDC was complicated by a pharyngeal breach and nerve injury due to intense adhesions to neighboring structures.

Histological examination confirmed the diagnosis, and malignant transformation of TDC primarily observed in elderly patients (≈1%) is most commonly of the papillary carcinoma type (80% - 95%), underscoring the importance of reg-

ular follow-up [6] [12].

4. Conclusion

The thyroglossal duct cyst should be considered as a differential diagnosis in elderly patients and in patients presenting with a large cervical mass. Giant forms pose a risk of complications due to compression of adjacent organs.

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Consent

The patient gave informed consent.

Author Contributions

All authors have read and approved the final manuscript.

Ethics Statement

Written informed consent was obtained from the patient for publication of the clinical details and accompanying images.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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