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Case Report: A Large Thyroglossal Duct Cyst in An Adult – A Rare Presentation

Ahmad Essam Al-Mulla MD, FACS *[1], Dr. Ehab S. Imam, M.D. PhD [2],
Dr. Asmaa Abdulkarim Al Samhan MD [3]

1. Consultant General and Bariatric Surgeon. Kuwait Board of General Surgery. Fellowship Minimal Invasive and Bariatric and Endoscopy (Brazil). Fellowship American college of Surgeons (FACS). Department of Surgery Farwaniya Hospital, Ministry of Health Kuwait (MOH).

2. Consultant General Surgery, Department of Surgery, Farwaniya Hospital, Ministry of Health Kuwait (MOH).

3. Senior house officer General surgery (SHO). Department of Surgery, Farwaniya Hospital, Ministry of Health Kuwait (MOH).

Corresponding Author: Ahmad Essam Al-Mulla, Consultant General and Bariatric Surgeon. Kuwait Board of General Surgery. Fellowship Minimal Invasive and Bariatric and Endoscopy (Brazil). Fellowship American college of Surgeons (FACS). Department of Surgery Farwaniya Hospital, Ministry of Health Kuwait (MOH).

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Abstract

Thyroglossal duct cyst is the most common congenital abnormality in the neck. It can be present in any age group. The average size of thyroglossal cysts is 2–4 cm, with a low malignant protentional. Nevertheless, it is alarming if occurred in an elderly patient, especially if it is progressing in size; this could be a sign of a complicated presentation that requires instantaneous surgical intervention. Here, we describe the management of a massive thyroglossal cyst rapidly increasing in a 42-year-old male patient.

Keywords: *Congenital neck mass, thyroglossal cyst, Sistrunk procedure, thyroglossal cyst in adults.*

Introduction

The thyroglossal duct cyst (TGDC) is the most common congenital neck anomaly (1). It accounts for 70% of neck cysts and approximately 4.4% of swellings in the head and neck region (2,3). It is an epithelial remnant of the thyroglossal tract. It presents characteristically at the midline of the neck at the level of the thyrohyoid membrane, closely associated with the hyoid bone (4). TGDCs are equally prevalent in both genders. Nevertheless, as they are more common in children than in the adult population (5). A thyroglossal cyst can usually be present in small sizes; however, it is unusual to find them prominent, especially in an elderly population. This case report describes the course and management of a massive thyroglossal cyst in an adult.

Case Report

A 42-year-old male presented to our surgical outpatient department complaining of a 4-year history of progressive anterior neck swelling, with no other complaints. He was known to have type 2 diabetes and hypertension. Upon examining the neck, a considerable, non-tender, massive, anterior neck swelling was seen (Figure 1). It moved upon protrusion of the tongue and minimally upon swallowing. There was no evidence of other masses or lymph nodes. An ultrasound of the neck was ordered for the patient and revealed a large midline suprahyoid neck mass with turbid content approximately 6.7 × 5.2 cm in size, with no calcification, vascularity, or pathological lymph nodes, suggestive of a sizeable thyroglossal cyst. The patient was counselled regarding the ultrasound results and booked for an elective Sistrunk procedure. The pre-operative investigation was ordered, anaesthesiologist counselled the patient about the operation and consent was taken.

Figure 1: Large midline thyroglossal cyst

Intra-operative procedure:

The operation was performed under general anaesthesia. A horizontal incision was made just above the thyroid cartilage involving the large thyroglossal cyst. Upon dissecting the cyst from the surrounding strap muscles and adhesion (Figure 2), a track was noticed and pursued to the hyoid bone (Figure 2). The track was concluded, the bone was excised), haemostasis was achieved, and two large drains were positioned (Figure 3).

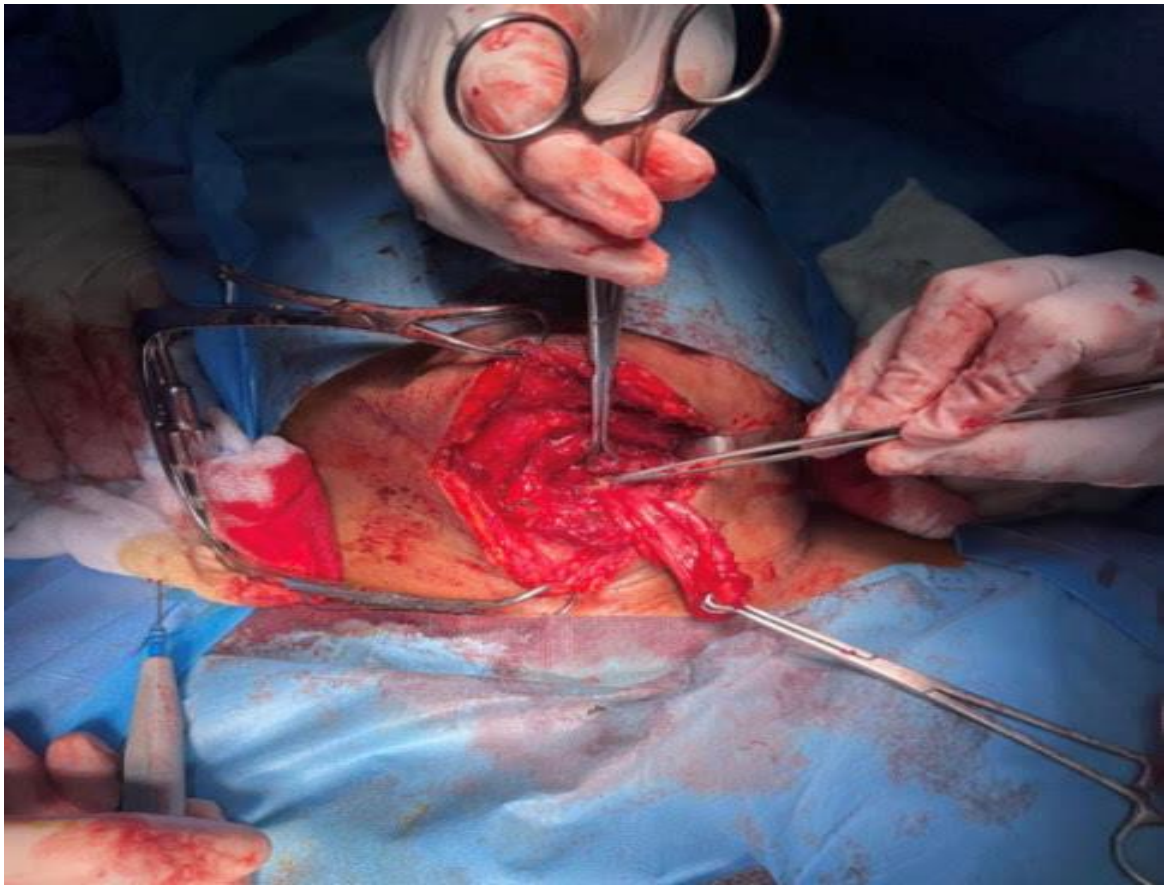

Figure 2: Dissection of the thyroglossal cyst and identification of the hyoid bone attachment

Figure 3: Thyroglossal cyst excised completely with hyoid bone attachment

Post-operative status:

Post-operative recovery was uneventful. The patient stayed in the surgical ward for 5 days, with the administration of broad-spectrum intravenous antibiotics. The drains were removed, with the resumption of normal neck movement, diet, and daily activity. The first outpatient visit was 1 week after discharge. The patient's healing was uneventful, and the wound was clean. The histopathological evaluation demonstrated a benign squamous epithelium-lined cyst consistent with thyroglossal cyst.

Discussion

The thyroid gland is the first endocrine gland that develops in utero. Its development starts by the end of the fourth gestation week at the foramen cecum from the endoderm layer. During the fifth gestation week, the thyroglossal duct starts to atrophy. By the end of the seventh week, the thyroid gland forms two lobes and the isthmus and descends to its anatomical position, and the thyroglossal duct is completely atrophied and closed. A failure of these previous processes will result in a thyroglossal cyst, sinus, or fistula (6). TGDCs are commonly present with sizes ranging from 2 to 4 cm; in 685 previously reported cases, the average size was 2.4 cm (0.4–9.9 cm) (7).

As presented in our case, giant cysts develop due to the slow progression of the cysts over extended periods in adults rather than the rapid presentation in children. Although it is a benign lesion, the sudden, rapid growth of a TGDC in an adult can be alarming and should raise the suspicion of a possible malignant transformation, reported in 1% of cases (papillary carcinoma) (8). The diagnosis of a massive TGDC neck swelling can be challenging. Although changes in the movement of the tongue can function as evidence in most thyroglossal cyst cases, this assessment might not be helpful in large masses. Various differential diagnoses, such as lymphadenopathy, large thyroid mass, extensive dermoid cyst, branchial cyst, neck abscess, or lipoma, must be considered. An ultrasound of the neck can be sufficient to assess thyroglossal cysts. In more complex cases, contrast-enhanced computer tomography represents an alternative (9), demonstrating the mass's attachment to the hyoid bone.

The gold-standard treatment for TGDCs is a surgery known as a Sistrunk operation. The operation relies on the embryological development of the thyroid gland and involves the complete excision of the thyroglossal cyst and its extension, along with the midline body of the hyoid bone to which the cyst is deeply attached, to prevent a recurrence. Recurrence following the Sistrunk procedure is seen in about 3% of cases (10). According to the literature, cysts less than 10 cm in size can be solely managed with Sistrunk surgery. Cysts larger than 10 cm may require other pre-operative measures,

such as aspiration, which may help reduce compression on the pharynx (11). Complications of surgery are rare; a recent review revealed a complication rate of 8% (12). Most minor complications comprise local morbidities, including local infection, seroma, hematoma, and wound dehiscence (13).

Conclusion

TGDCs can be present in any age group. Nevertheless, they are infrequent in adults. Most cysts are classically diagnosed clinically. However, larger ones can present a challenge due to their size and attachments. Rapidly progressing thyroglossal cysts in adults could be alarming for more cincture manifestations such as malignancy. The gold standard of management is surgery with low recurrence and complication rates.

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