CASE REPORT

Recurrent Thyroglossal Duct Cyst in a 9-year-old Girl: A Case Reports

Andi Dwihantoro, Ki Ageng Nico Prasetyo Nugroho

Pediatric Surgery Division, Department of Surgery, Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University/ Dr.Sardjito General Hospital, Spesial region of Yogyakarta 55281, Indonesia

ABSTRACT

A nine-year-old girl presented with a midline neck mass without accompanying symptoms such as fever, pain, difficulty swallowing, shortness of breath, or hoarseness. The mass, measuring 4x2x1 cm, was firm, movable, and exhibited movement upon swallowing. She previously had surgery for a similar mass diagnosed as a thyroglossal duct cyst (TGDC) three years earlier. Physical examination revealed normal vital signs. She underwent the Sistrunk procedure, excising the cyst and part of the hyoid bone through a single inferior incision, with no tract found during dissection. Postoperative histopathology confirmed TGDC without malignancy. This case highlights that TGDC can occur along the tract from the foramen cecum to the thyroid bed, making the Sistrunk procedure essential to minimize recurrence.
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Corresponding Author:
Andi Dwihantoro, MD
Email: andi.dwihantoro@ugm.ac.id

INTRODUCTION

Thyroglossal Duct Cysts (TGDC) are the most typical cervical swellers, accounting for more than 70–75 % of congenital midline neck masses and having a prevalence of 7% in the head and neck region.1-3 Thyroid analage develops caudally and descends along with the development of large arteries during the fourth and fifth weeks of intrauterine life. It originates from the foramen cecum at the base of the tongue (1).

The thyroid gland is connected to the foramen cecum by the thyroglossal duct, a little tubular structure left behind from the thyroid's descent. In around 50% of individuals, the distal portion of the duct develops into the pyramidal lobe of the thyroid gland. By the ninth week of pregnancy, the thyroglossal duct typically begins to involute. If any part of the duct remains, secretion from the epithelial lining may cause swelling and the development of cysts in the thyroglossal duct (2).

Sistrunk process is accepted as the standard procedure for TDGC management on a global scale. The cyst, the middle section of the hyoid bone, and the tract up to the foramen cecum are all removed during the treatment. The hyoid bone, which serves as the fulcrum for its existence, is where the embryological thyroglossal duct travels in relation to it during this procedure (3).We provide a case report of TDGC recurrence following a simple excision on a 9-year-old female patient and a sistrunk surgery to reduce recurrence rates.

CASE REPORT

A young girl, nine years old presented to our hospital with a mass located in her midline neck. There were no fever, pain, difficulty swallowing, shortness of breath, or hoarseness. 3 years befofore came to our hospital, The patient had surgery for the same located mass with histopathological result supported a TGDC. Physical examination revealed normal vital signs and we discovered a cyst mass sized 4x2x1 cm in the transverse direction, had firm boundaries, movable, move when swallowing, and not painful (Fig. 1) We conducted an examination, including a histopathological analysis of tissue described as a thyroglossal duct cyst. The histopathological features indicative of a thyroglossal duct cyst provide the basis for its removal.

Through a single inferior incision, the patient underwent surgery utilizing the Sistrunk procedure (Fig. 2). The patient is positioned supine, with a pillow beneath the shoulders and a rubber headrest supporting the head. The 5-cm-long transversal incision is positioned halfway between the hyoid bone and the superior margin of the thyroid cartilage. When a pyramidal lobe is present, the hyoid bone is dissected from below up while the prelaryngeal adipose connective tissue is removed.

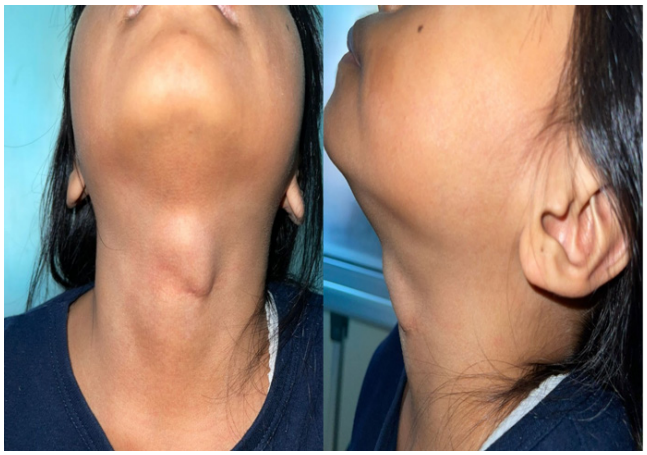

Figure 1: 9-year-old girl with a 4x2x1 cm cm TDGC recurrence in her clinical presentation

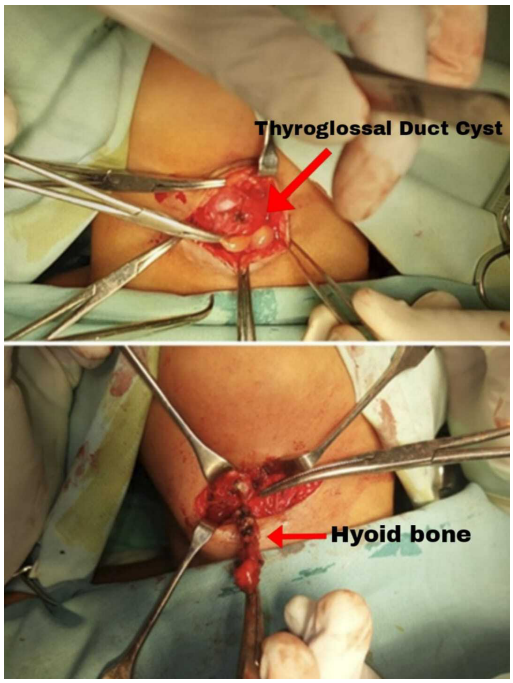

Figure 2: Thyroglossal duct cyst removal using Sistrunk procedure. Hyoid bnoe showed with arrow mark in figure

Typically, the cyst is attached to the hyoid bone's inferior portion. After releasing the superior and inferior muscle attachments, the hyoid bone's body is removed together with the cyst. There was no evident tract found during the dissection. A histopathological then revealed TGDC without any evidence of malignancy.

DISCUSSION

Thyroglossal duct cysts (TGDCs) have a notable recurrence rate when not adequately treated, with approximately 1-2% of these cysts having the potential to become malignant. The Sistrunk procedure is recognized as the gold standard for surgical treatment due to its significantly lower recurrence rates. It is important to note that post-inflammatory fibrosis has been identified as a contributing factor to the recurrence of these cysts.(3) This procedure involves removing the cyst, the tract, the middle third of the hyoid bone, and a core of the base of the tongue tissue (4). We reported a 9-year-old girl with a 4x2x1 cm TGDC recurrence after a plain excision. Surgical removal is the only definitive treatment for TGDC, with the Sistrunk procedure being far more effective than simple cystectomy, which has a recurrence rate approaching 55.6% if the hyoid bone is not removed. This aligns with the patient's history, as the patient had previously undergone surgery for this condition at an outside hospital. however, during the procedure, the hyoid bone was not removed. This omission can be the reason why the patient has experienced a recurrence of the thyroglossal duct cyst. In this technique, the cyst, the tract, the midline of the hyoid bone, and the cuff of the surrounding base of tongue musculature are all removed (5).

CONCLUSION

The Sistrunk approach results in low rates of recurrence and morbidity, thus making it the preferred method of therapy for thyroglossal duct cysts.TGDC can recur anywhere along the tract, from the foramen cecum to the thyroid, so a cystectomy alone is insufficient.

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