Thyroglossal Duct Cyst with Intralaryngeal Extension

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ABSTRACT

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the various presentations of a thyroglossal duct cyst (TGDC), to expand their differential diagnosis of a midline neck mass with dysphagia, acute voice change and shortness of breath, and to understand the acute treatment options for airway distress caused by a TGDC.

Objectives: To present the unusual case of a patient with dysphagia, voice change, and shortness of breath who was found to have TGDC with intralaryngeal extension. The acute airway management and definitive surgical treatment options for the patient are discussed.

Study Design: Retrospective review of a case record at a tertiary care medical center. Literature review using a PubMed search for TGDC with intralaryngeal extension. The reference sections of each of the relevant articles were also reviewed to find any additional pertinent studies.

Results and Conclusions: A TGDC with intralaryngeal extension is a rare cause of dysphagia, hoarseness, and shortness of breath. The literature review shows only 11 previously reported cases. The acute management of this lesion is to manage airway. Our case demonstrates that needle aspiration of the cyst is a good alternative to intubation or tracheostomy. Definitive surgical intervention can be accomplished through a Sistrunk procedure with complete excision of the cyst and tract.

CASE REPORT

A 46 year old male presented to the emergency room with a painless midline neck mass that had been enlarging over a one month period with progressively worsening dysphagia, hoarseness, and shortness of breath. Physical examination revealed a cystic midline mass overlying the hyoid bone and extending inferiorly over the thyroid cartilage. Flexible fiberoptic laryngoscopy demonstrated a submucosal mass in the left paraglottic and supraglottic regions with extension to the vallecula. The right arytenoid was visualized, but the left arytenoid and both vocal cords were obscured by the lesion.

Differential diagnosis included but was not limited to laryngocele, TGDC, and vallecular cyst. The patient was short of breath, but was stable and comfortable enough to undergo computed tomography of the neck with intravenous contrast before surgical management. CT imaging revealed a TGDC with intra-laryngeal extension [Figures 1-3].

Urgent surgical excision with the appropriate surgical staff was not immediately available, so a 19-gauge needle was used to aspirate the cyst contents. The patient’s dysphagia, hoarseness, and respiratory distress were immediately relieved. Pathologic examination and flow cytometry revealed cystic contents without any evidence of malignancy. The patient was later brought to the operating room for surgical excision. The mass was dissected from the larynx, and it was removed along with the central portion of the hyoid bone and a tract extending to the base of tongue. Final pathology revealed a TGDC.

DISCUSSION

It is uncommon for a patient with a TGDC to present with respiratory distress. Patients typically present with asymptomatic, midline neck masses. These cysts are found in close relation to the hyoid bone anywhere along the embryologic migratory descent of the thyroid gland from the foramen cecum to the thyroid bed in the lower neck. On occasion, patients will present with an infection or fistula, and only rarely do they present with voice disturbance or other symptoms of intralaryngeal extension.

There are 11 previously reported cases of TGDCs with intralaryngeal extension. Our case report adds to this literature and provides an exemplary case of acute and definitive management of these patients. There is only one reported case in the literature in which the patient presented with respiratory distress, and the patient required a tracheostomy. In our case, we were able to manage the patient’s airway safely without requiring intubation or tracheostomy.

The first step in management of all patients with respiratory distress and a compressive neck mass is to stabilize the airway, regardless of the etiology of the neck mass. Our case demonstrates how needle aspiration of this cystic mass can stabilize a patient’s airway in the acute setting; conservative management by needle aspiration can be a safe alternative to intubation or tracheostomy in properly selected patients.

Once the patient’s airway is stabilized, definitive surgical management can be planned. The most appropriate operation is complete excision of the cyst with the central portion of the hyoid bone as originally described by Sistrunk.

In conclusion, the acute management of respiratory distress secondary to a thyroglossal duct cyst with intralaryngeal extension begins with securing the airway. In certain patients, needle aspiration is a safe procedure. Definitive treatment involves surgical excision using the Sistrunk procedure.

REFERENCES