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Endolaryngeal extension of thyroglossal duct cyst

Hideki Bando [a,b,*], Masaya Uchida [a], Sachie Matsumoto [a], Chihisa Ushijima [a], Kenji Dejima [a]

[a] *Department of Otolaryngology-Bronchoesophagology, Kyoto Second Red Cross Hospital, Kyoto, Japan*
[b] *Department of Otolaryngology-Head and Neck Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan*

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Abstract

Thyroglossal duct cysts are the most common congenital neck masses that develop during childhood, The masses develop from remnants of thyroglossal ducts, and typically appear as midline neck masses. Endolaryngeal extension of thyroglossal duct cysts has been reported mostly as midline neck swelling. We observed a case of extension of the thyroglossal duct cyst to the supraglottic area without neck swelling. A 50-year-old man presented with a 1-month history of foreign-body sensation in the throat. Fiberscopic and radiologic findings were similar to those associated with a saccular cyst, but its proximity to the hyoid bone raised the possibility of thyroglossal duct cyst. Operation was performed via an external incision to completely remove the cyst. Postoperative fiberscopy revealed that the aryepiglottic fold swelling had disappeared. Diagnosis of thyroglossal duct cyst was confirmed on the basis of pathological findings. In cases in which it is difficult to remove the cyst from the hyoid membrane, the hyoid bone midline portion should be dissected. Thyroglossal duct cysts should be considered in cases with a submucosal tumor in the supraglottic region, and radiological examinations should be performed.

Keywords: Thyroglossal duct cyst; Larynx; Surgery; Diagnosis

1. Introduction

Thyroglossal duct cysts develop from remnants of the thyroglossal duct and present in the midline in relation to the hyoid bone, which enlarges as result of inflammation, infection, and mucus retention [1]. Endolaryngeal extension of thyroglossal duct cyst is rare, and only 12 cases have been reported in the literature. Fiberscopic findings indicate that these cysts appear similar to laryngeal cysts, thereby making differential diagnosis difficult. In most reported cases, cysts were palpable in the neck. In this paper, we report the thirteenth case without neck mass, and diagnosis and treatment issues discussed with a review of the related literature.

2. Case report

A 50-year-old man presented with a 1-month history of foreign-body sensation in the pharynx. His medical history included untreated type 2 diabetes. His social history was notable, including 30 years of smoking and abstinence from alcohol for 10 years. No neck mass or cervical lymphadenopathy was observed during physical examination. Laryngeal fiberscopy showed a large submucosal mass in the left aryepiglottic fold. Vocal fold mobility was normal. The laryngeal inlet was narrowed due to the tumor (Fig. 1), but the patient did not complain of hoarseness or dyspnea. On the basis of these findings, a diagnosis of laryngeal submucosal tumor was made, and we conducted further examination.

Computed tomography (CT) of the neck showed a large cystic mass extending to the dorsal side of hyoid bone in the pre-epiglottic space (Fig. 2). A small portion of the cyst projected toward the subcutaneous region at the superior thyroid notch level, but the remainder was behind the hyoid bone and the thyroid cartilage. We suspected thyroglossal

* Corresponding author at: Department of Otolaryngology-Head and Neck Surgery, Kyoto Prefectural University of Medicine, 602-8566 Kawaramachi-Hirokoji, Kamigyo-ku, Kyoto, Japan. Tel.: +81 75 251 5603; fax: +81 75 251 5604.
E-mail address: hbando@koto.kpu-m.ac.jp (H. Bando).

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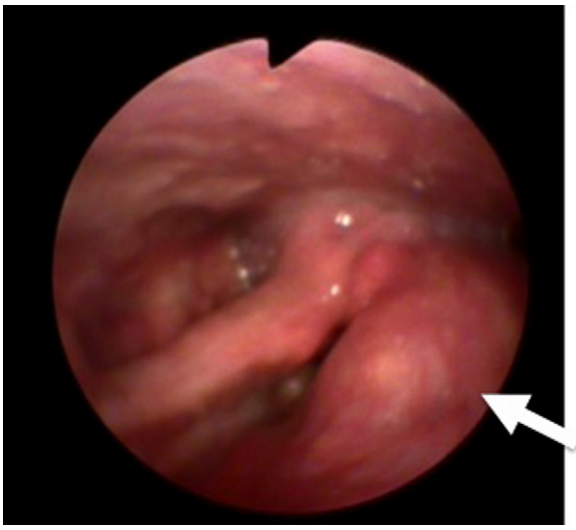

Fig. 1. Preoperative fiberscopic finding shows swelled left aryepiglottic fold (arrow). The airway stenosis was notable, and the vocal folds could not be observed.

duct cyst because of the proximity to the hyoid bone. In addition, lateral saccular cyst was also considered, and diagnosis was not established before treatment. Because the cyst was difficult to excise using an endolaryngeal procedure, we planned surgical extirpation by using an external approach. After diabetes treatment for 1 week, extirpation was performed under general anesthesia. Tracheotomy was performed under local anesthesia because the laryngeal inlet was narrow to the extent that oral intubation was difficult to perform. Laryngeal mask was not employed, because endolaryngeal split of the cyst could cause airway obstruction. A transverse skin incision was made and strap muscles were divided at the infrahyoid location. The cyst was detected at the upper thyroid notch and hyoid bone level (Fig. 3A). Next, the cyst was removed from thyroid cartilage and hyoid bone. The duct could not be located, and there was no succession between the cyst and the hyoid bone. The possibility of saccular cyst remained at the point, and Sistrunk operation was not performed. Pathological test revealed the existence of thyroid follicles in the cyst wall, and a diagnosis of thyroglossal duct cyst was confirmed (Fig. 4). Post-operative fiberscopy revealed no mass in the left aryepiglottic fold (Fig. 5). The patient was decannulated on postoperative day 4, and he was discharged 10 days after surgery. The foreign-body sensation in the pharynx disappeared after the operation, and there has been no evidence of recurrence for 3 years.

3. Discussion

Thyroglossal duct cysts can occur at any point along the thyroid gland migratory pathway which leaves behind the thyroglossal duct cyst. The duct passes in front of the hyoid bone and takes a re-curved course behind it, then runs downward anteriorly to the thyrohyoid membrane [2].

Fifty percent of patients presenting thyroglossal duct cysts are under 20 years of age [3] and there is no gender predilection [4].

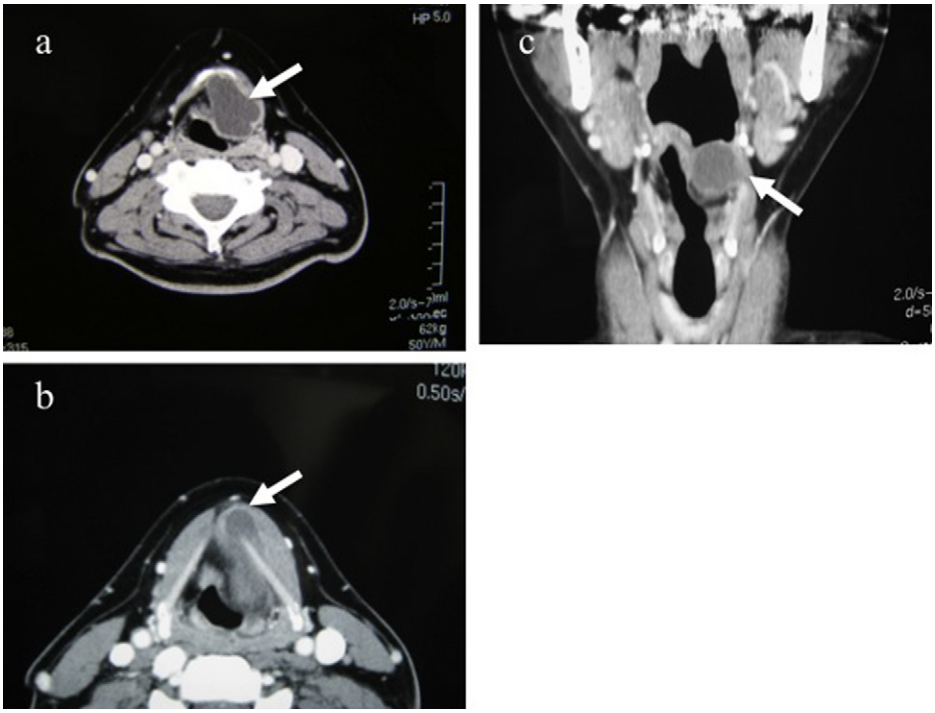

Fig. 2. (A) A supraglottic cystic mass, which is extended to the hyoid bone, was detected using computed tomography (arrow). Laryngeal ventricles are intact. The proximity of the cyst and hyoid bone raise the possibility of a thyroglossal duct cyst. (B) The cyst on the upper thyroid notch projected to the pre-epiglottic space (arrow). The cyst was covered by strap muscles. (C) The bottom of cyst was not close to the ventricle in the coronal image (arrow).