THYROGLOSSAL DUCT CYST PRESENTING AS A THYROID NODULE

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INTRODUCTION
Thyroglossal duct cysts develop as persistent remnants of the thyroglossal duct tract between the foramen Caecum at the tongue base and the thyroid gland. Thyroglossal duct cyst usually presents as a midline neck mass, commonly in the pediatric age group. These persistent thyroglossal duct tract remnants have been reported in about 7% of the general population.1 In 85% of cases, the thyroglossal duct remnant is inferior to the hyoid bone. The definitive treatment is excision of the thyroglossal duct cyst with excision of the midportion of the hyoid bone and any tract remnants to the tongue base as initially described by Sistrunk in 1927. Although thyroglossal duct remnants are usually in the soft tissues of the midline neck, they have been described in other locations. These include intralaryngeal presentation and also adherent to the thyroid gland.2,3 Although unusual there have also been reported cases of a thyroglossal duct cyst occurring within the thyroid gland.4

CASE STUDY
A 77 year old white female was referred with complaints of a neck nodule in the midline which had been noted over the past three months with no change in the size of the nodule. There was no history of any drainage tract onto the skin or infection in this area, nor was there any history of thyroid cancer in the patient’s family history or previous irradiation to the head or neck. There were no aerodigestive complaints, such as hoarseness, dysphagia, odynophagia, referred otalgia or weight loss. On physical examination, she was found to have a 2 cm x 2.5 cm mass in the region of the thyroid isthmus, just to the right of midline. There were no drainage tracts into the skin. The mass did not retract on protrusion of the tongue. There were no other thyroid nodules or neck masses. Her aerodigestive tract examination, including indirect laryngoscopy, was normal.

Preoperative ultrasound examination indicated a 1.7 x 1.5 well-defined mass in the anterior inferior neck in the region of the thyroid isthmus. A fine needle aspiration indicated a somewhat cystic mass with histologic findings of an atypical squamous aspirate with the pathologist favoring a well-differentiated squamous cell carcinoma. Thyroid function studies were normal. Subsequently, a CT scan of the neck was obtained and indicated a well-defined cystic lesion in the region of the thyroid isthmus. (Figure 1) No adenopathy was noted.

The patient underwent a thyroid isthmusectomy (Figure 1) with findings of a mass confined to the thyroid isthmus. There was no evidence of extension of the tract into the hyoid bone, and therefore it was not resected. The final pathology report indicated a chronically inflamed thyroglossal duct cyst with focal atypical squamous metaplasia. The patient remains free of disease with no recurrence of the cyst at one year postoperatively.

DISCUSSION
When evaluating patients with an anterior midline neck mass, a thyroglossal duct cyst is the prime consideration. However, other entities should be considered. These include a dermoid cyst, pyramidal lobe thyroid hyperplasia, medially displaced branchial cleft cyst, lipoma or sebaceous (inclusion) cyst. As a part of the evaluation, a complete head and neck examination to rule out abnormalities of the upper aerodigestive tract should be carried out. Additionally, fine needle aspiration plays a central role in the diagnosis of a mass. Further, ultrasound examination is a diagnostic adjunct and CT scan of the neck may play a role as well.

Primary squamous cell carcinoma of the thyroid gland constitutes less than 1% of all primary thyroid cancers. The etiology of squamous cell carcinoma directly within the thyroid gland is unknown but hypothesized to result from: squamous metaplasia, from an underlying pathology such as Hashimoto’s thyroiditis,9–10 or a lesion such as collision tumor.11 Finally, embryonic rests of tissue within remnants of the ultimobranchial body may develop into a squamous cell carcinoma. Diagnosis in these cases may require use of immunohistochemistry techniques.12

In patients with thyroglossal duct cyst involving the thyroid gland, it is anticipated that the cyst would involve the thyroid isthmus. However, there have been reported cases of the cyst involving the thyroid lobe itself.1,13–14,15 In these case reports, there were three cases involving the right lobe and two cases involving the left lobe of the thyroid gland. Management should consist of excision of the mass whether by thyroid isthmusectomy or lobectomy. If a thyroglossal duct tract is present, a formal Sistrunk procedure should be undertaken. In the current case, no tract was identified, the hyoid bone was left intact, and there has been on recurrence at one year postoperatively. In a review of the current literature, it seems that the Sistrunk procedure was carried out in only about 50% of the patients with intrathyroid thyroglossal duct cyst.