



Brazilian Journal of Otorhinolaryngology

ISSN: 1808-8694

ISSN: 1808-8686

Associação Brasileira de Otorrinolaringologia e Cirurgia  
Cervicofacial

Lee, Dong Hoon; Yoon, Tae Mi; Lee, Joon Kyoo; Lim, Sang Chul  
Unusual coexisting thyroglossal duct cyst and second branchial cleft fistula in an adult#  
Brazilian Journal of Otorhinolaryngology, vol. 84, no. 3, 2018, May-June, pp. 398-399  
Associação Brasileira de Otorrinolaringologia e Cirurgia Cervicofacial

DOI: <https://doi.org/10.1016/j.bjorl.2015.11.017>

Available in: <https://www.redalyc.org/articulo.oa?id=392455836019>

- How to cite
- Complete issue
- More information about this article
- Journal's webpage in redalyc.org

UABEM  
[redalyc.org](https://www.redalyc.org)

Scientific Information System Redalyc

Network of Scientific Journals from Latin America and the Caribbean, Spain and  
Portugal

Project academic non-profit, developed under the open access initiative



# Brazilian Journal of OTORHINOLARYNGOLOGY

[www.bjorl.org](http://www.bjorl.org)



## CASE REPORT

### Unusual coexisting thyroglossal duct cyst and second branchial cleft fistula in an adult<sup>☆</sup>



### Coexistência incomum de cisto do ducto tireoglossal e fístula da segunda fenda branquial em adulto

Dong Hoon Lee, Tae Mi Yoon, Joon Kyoo Lee\*, Sang Chul Lim

Chonnam National University Medical School & Chonnam National University Hwasun Hospital, Department of Otolaryngology-Head and Neck Surgery, Hwasun, South Korea

Received 12 August 2015; accepted 19 November 2015  
Available online 28 February 2016

## Introduction

Thyroglossal duct cysts are the most common congenital neck masses, followed by branchial cleft anomalies.<sup>1</sup> Thyroglossal duct cysts are three times more prevalent than branchial cleft anomalies.<sup>2</sup> However, to our knowledge, coexisting thyroglossal duct cyst and branchial cleft anomaly has been reported only once in the literature.<sup>3</sup> Herein, we present the second case report of coexisting thyroglossal duct cyst and second branchial cleft fistula in a 34 year-old male.

## Case report

A 34 year-old male presented with recurrent anterior and lateral neck muroid discharge since childhood. The patient reported no relevant medical history except for a bilateral tonsillectomy 25 years ago. The physical examination revealed two external openings on the patient's neck. One

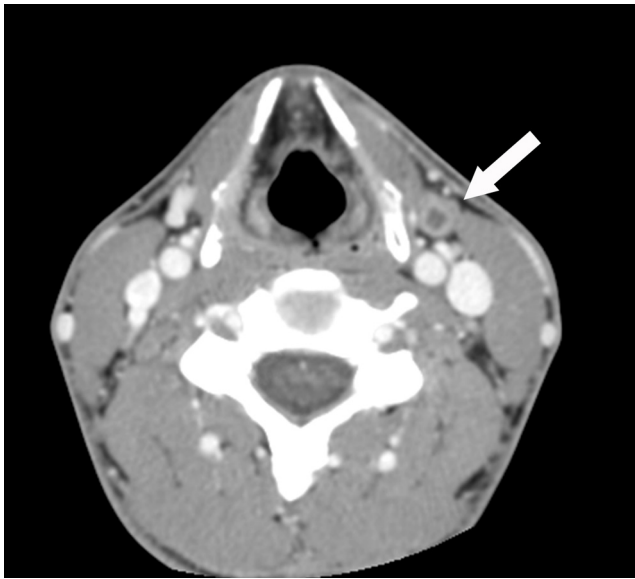
was located at the hyoid level; the other was located along the anterior border of the lower third of the sternocleidomastoid muscle (SCM). No palpable cervical mass or subcutaneous tract, and no active inflammation were present around the lesions. Computed Tomography (CT) scan of the neck revealed an 8.2 cm elongated rim-enhancing cystic lesion along the left anterior neck, extending from the anterior border of the lower third of the SCM to the tonsillar fossa (Fig. 1). CT scan showed no fistulous track or cyst at the hyoid level, and no connection between the two external openings. The pharyngoesophagogram showed no leakage from the pharynx.

Based on these observations, the patient was diagnosed with a left second branchial cleft fistula and a likely thyroglossal duct cyst. As the first surgical step for the branchial cleft fistula, a transverse elliptical incision was made around the external opening. With gentle traction on the fistula, the dissection proceeded extending to its cephalic portion. After a stepladder incision, the fistulous tract was dissected to the tonsillar fossa, where it was ligated and separated (Fig. 2). We performed the Sistrunk's operation for the fistula at the hyoid level under the working diagnosis of a thyroglossal duct cyst (Fig. 2). Intraoperative pharyngoscopy revealed no pharyngeal opening. Pathological examination of the lesions revealed thyroglossal duct cyst and branchial cleft fistula. The patient's postoperative course was uneventful. At 14 months follow-up, there has been no recurrence, and the patient remains asymptomatic.

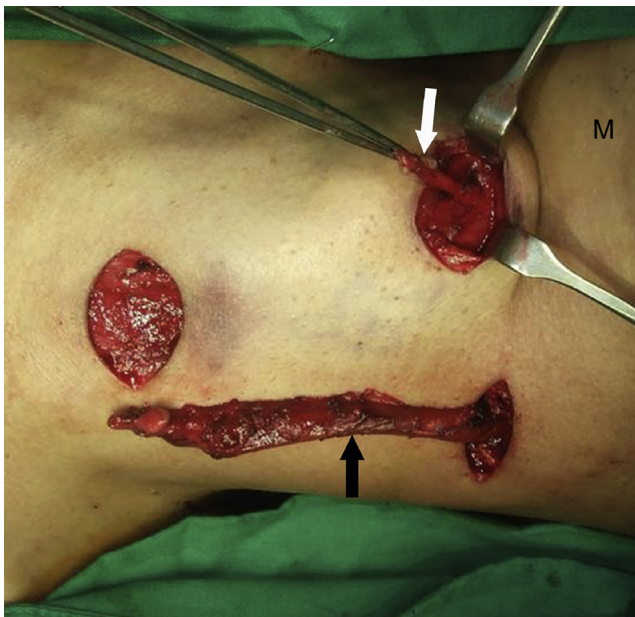
<sup>☆</sup> Please cite this article as: Lee DH, Yoon TM, Lee JK, Lim SC. Unusual coexisting thyroglossal duct cyst and second branchial cleft fistula in an adult. Braz J Otorhinolaryngol. 2018;84:398–9.

\* Corresponding author.

E-mail: [joonkyoo@jnu.ac.kr](mailto:joonkyoo@jnu.ac.kr) (J.K. Lee).



**Figure 1** Axial computed tomography scan of the neck shows an 8.2 cm elongated rim-enhancing cystic lesion (arrow) along the left anterior neck.



**Figure 2** Intraoperative finding shows a dissected left second branchial cleft fistula (black arrow) by stepladder incisions, and a thyroglossal duct cyst (white arrow) with attached hyoid bone. M, mandible.

## Discussion

Thyroglossal duct cysts are the most common cause of congenital neck masses.<sup>1</sup> They usually present as midline neck masses and can be found at any point between the foramen cecum and suprasternal notch.<sup>4</sup> They are painless, enlarge slowly, and may be associated with a fistula or sinus tract.<sup>4</sup> In this case, thyroglossal duct cyst presented as a fistula. Branchial cleft anomalies can present as cysts, sinuses,

cartilaginous remnants, or fistula; they account for approximately 30% of all congenital head and neck lesions, with the majority being second branchial cleft anomalies.<sup>1,2,5</sup> Overall, cystic lesions are more common than fistulae in patients with second branchial cleft anomalies.<sup>6</sup> The current patient presented with a fistula with a small external opening along the anterior border of the lower SCM.

Ultrasound, CT, or, magnetic resonance imaging (MRI) may be helpful to evaluate both thyroglossal duct cysts and branchial cleft anomalies.<sup>1,4</sup> The definitive treatment of thyroglossal duct cysts and branchial cleft anomalies is complete surgical excision of the entire tract. After diagnostic CT scan in this case, the authors performed surgical excision of the entire tract by the Sistrunk's operation and stepladder incision.

There were some unique characteristics to this case. Firstly, this was the second reported case of unusual coexisting thyroglossal duct cyst and second branchial cleft fistula in an adult.<sup>3</sup> This finding highlights that thyroglossal duct cysts and branchial cleft fistula are encountered in adults. Therefore, coexisting thyroglossal duct cysts and branchial cleft fistula should be considered in the differential diagnosis of neck lesions, even in adults. Secondly, the patient did not present with a history of infection and previous surgical procedure for congenital neck lesions. There is a possibility of an asymptomatic thyroglossal duct cyst and branchial cleft fistula occurrence without palpable neck lesions in adults. Thirdly, if thyroglossal duct cyst is suspected in an adult, the Sistrunk's operation, removing the central portion of the hyoid, is the optimal choice of therapy not only for aesthetic reasons, but also for management of recurrent infections and the potential danger of malignancy.<sup>1,6</sup>

## Conclusion

Coexisting thyroglossal duct cysts and branchial cleft fistula should be considered in the differential diagnosis of neck lesions, even in an adult.

## Conflicts of interest

The authors declare no conflicts of interest.

## References

1. Erikci V, Hoşgör M. Management of congenital neck lesions in children. *J Plast Reconstr Aesthet Surg.* 2014;67:e217–22.
2. Roback SA, Telander RL. Thyroglossal duct cysts and branchial cleft anomalies. *Semin Pediatr Surg.* 1994;3:142–6.
3. Kyi M, Zin T, Paijan R, Abdullah, Din N. A case of an adult synchronous thyroglossal cyst and branchial sinus: case report. *Internet J Pathol.* 2012;13.
4. Androulakis M, Johnson JT, Wagner RL. Thyroglossal duct and second branchial cleft anomalies in adults. *Ear Nose Throat J.* 1990;69:318–22.
5. Ozoleck JA. Selective pathologies of the head and neck in children: a developmental perspective. *Adv Anat Pathol.* 2009;16:332–58.
6. Hong SM, Moon SB. Low-lying thyroglossal duct cyst with lateral cervical discharge masquerading as a second branchial cleft fistula: a case report. *J Pediatr Surg.* 2013;48:429–31.