International Journal of Otorhinolaryngology and Head and Neck Surgery
Kumar AGN. Int J Otorhinolaryngol Head Neck Surg. 2019 Jan;5(1):29-32
http://www.ijorl.com
pISSN 2454-5929 | eISSN 2454-5937

Original Research Article

DOI: http://dx.doi.org/10.18203/issn.2454-5929.ijohns20185061

Clinical experience of thyroglossal cyst management

A. G. Naveen Kumar*

Associate Professor, Department of ENT, Sapthagiri Institute of Medical Science- Research Centre, Bangalore, Karnataka, India

Received: 04 November 2018
Revised: 21 November 2018
Accepted: 22 November 2018

***Correspondence:**
Dr. A. G. Naveen Kumar,
E-mail: agnaveen27@gmail.com

ABSTRACT

Background: Thyroglossal cyst is a cystic swelling arising from embryological remnant of thyroglossal cyst. Cyst is typically located in the midline of the anterior neck and moves upward with tongue protrusion. The gold standard management for thyroglossal cyst is the Sistrunk procedure.
Methods: Total of 32 patients of all ages and both sexes operated at Sapthagiri Institute of Medical Science and Research Centre, Bangalore during the study duration were included a detailed history and thorough physical examination was done to arrive clinical diagnosis. Ultrasound studies and FNAC were done in all cases to confirm the clinical diagnosis of thyroglossal cyst. Management was mainly surgical and Sistrunk operation was done in all cases.
Results: Thirty two patients of with the diagnosis of thyroglossal cyst were managed from 2011 to 2018 in the department of ENT, Sapthagiri Institute of Medical Science, Bangalore, 20 (62.5%) were females and 12 (37.5%) were males age ranged from 5 to 40 years; mean age was 16.5 years.
Conclusions: Thyroglossal cyst presents most commonly in paediatric age as cystic painless midline neck swelling. Diagnosis is made on clinical examination complimented with ultrasound and FNAC. Sistrunk operation is the treatment of choice to prevent recurrence and histopathological examination of the surgical specimen is must to rule out malignant transformation in the cyst.

Keywords: Thyroglossal cyst, FNAC, Sistrunk operation

INTRODUCTION

Thyroglossal cyst is a cystic swelling arising from embryological remnant of thyroglossal duct. It is regarded as tubulodermoid. Thyroglossal cysts are the congenital midline neck cyst account for 65%-70% of all congenital neck swellings, and are the second most common benign neck mass, after cervical lymphadenopathy. The thyroglossal cyst is a developmental abnormality which is seen in 7% of the population.[1]

Thyroglossal cyst represents the most common type of developmental cyst encountered in the neck region accounting for 2-4% of all neck masses.[2] Thyroglossal cyst present as mobile, painless midline cystic neck swelling that moves with deglutition and protrusion of the tongue. While it typically presents at midline close to the hyoid bone, 10%-24% of the cysts are located laterally, usually on the left.[3]

Thyroglossal cyst present in the first few years of life. However, they are also seen in adults. Of these, 30% are discovered by the age of 10; 20% from 10 to 20 years, 15% in 30 years and 35% after 30 years.[4]

The cyst is usually 2 to 3 cm in diameter. Thyroglossal cysts are usually non-tender and mobile. A infected thyroglossal cyst present as a tender mass and may be associated with dysphagia, dysphonia, draining sinus, fever, or increasing painful neck mass. In thyroglossal cyst, malignancy may occur in 1-3% cases.[5] A rapid

increase in duct growth should raise suspicious of malignancy which there is an estimated 1% chance of malignant transformation in thyroglossal cyst.[6] On clinical examination, the mass is typically located in the midline of the anterior neck and moves upward with tongue protrusion, a reflection of its connection with the foramen cecum. The gold standard management for thyroglossal cyst is the Sistrunk procedure as evidenced by low recurrence rates.[7]

Emryology

Initially thyroid gland appears as proliferation of Endodermal tissue in the floor of the pharynx between tuberculum impar and hypobranchial eminence (this area is the later foramen caecum) (17th day of gestation). Cells of thyroid gland descend into the mesoderm into the hypopharyngeal eminence (later pharynx) as cords of cells. During this descent thyroid tissue retains its communication with foramen caecum. This communication is known as thyroglossal duct. It reaches its final position in the neck by the 7th week of gestation. The duct usually disappears by the 10th week of gestation.[8] Persistence of this can lead to cystic degeneration forming thyroglossal cyst. PATH OF DUCT foramen caecum via genioglossus hyoid (usually behind but can be in front or in the matter of hyoid) upper border of thyroid cartilage. Since the hyoid bone develops later and joins from lateral to medial, the thyroglossal duct may get trapped in the substance of the body of hyoid bone, resulting in the tract running inside the body of the bone. Tongue and foramen cecum forms after the complete descent of the thyroglossal duct so rarely a tract could be found at the level of foramen cecum. This tract has been attributed to the persistence of lingual duct, which represents the point of union between the anterior and posterior components of the tongue.

Though it's a common congenital neck swelling, symptomatic presentation to ENT OPD is rare and its surgical management is a challenging task. So we are here presenting our experience with 32 cases of thyroglossal cyst which were managed successfully.

METHODS

This descriptive clinical case series study was conducted at the Department of ENT, Sapthagiri institute of Medical Science and Research Centre, Bangalore from 2011 to 2018.

A total of 32 patients of all ages and both sexes operated by at Sapthagiri Institute of Medical Science and Research Centre, Bangalore during the study duration were included in the study. Patients with infected cysts or with systemic illness were excluded from the study. A detailed history and thorough physical examination was done to arrive clinical diagnosis. Ultrasound studies and FNAC were done in all cases to confirm the clinical diagnosis of thyroglossal cyst.

Management was mainly surgical and Sistrunk operation was done in all cases. All the operated specimen were sent to histopathological examination to confirm the diagnosis and to rule out malignancy.

RESULTS

Thirty two patients of with the diagnosis of thyroglossal cyst were managed from 2011 to 2018 in the department of ENT, Sapthagiri Institute of Medical Science, Bangalore, 20 (62.5%) were females and 12 (37.5%) were males (Figure 1).

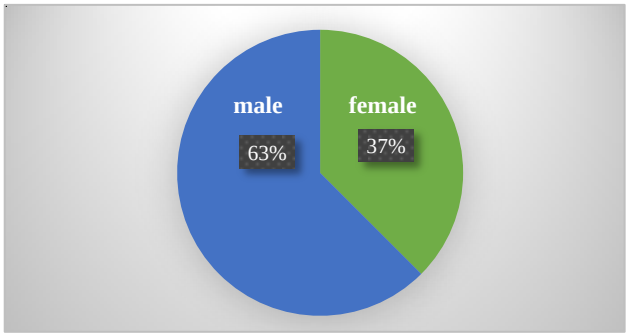

Figure 1: Gender distribution of thyroglossal cyst.

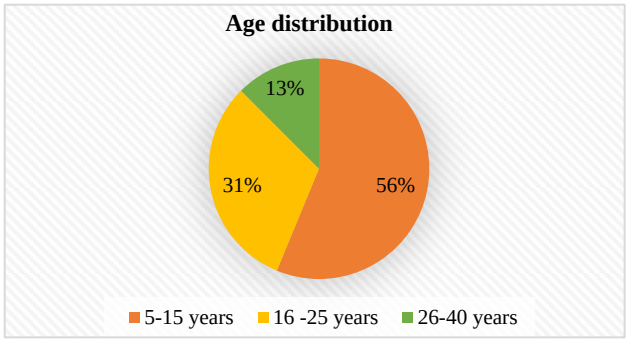

Figure 2: Age distribution of thyroglossal cyst.

Age ranged from 5 to 40 years; mean age was 16.5 years (Figure 2).

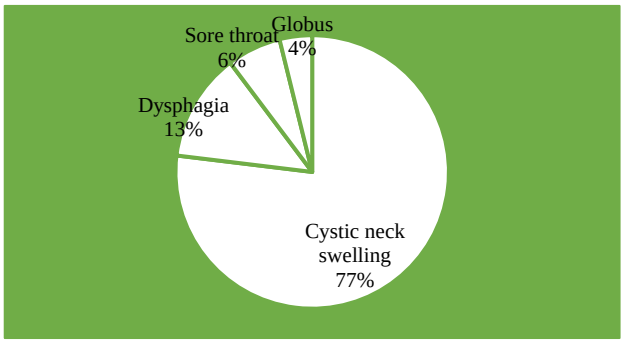

Figure 3: Clinical presentation of thyroglossal cyst.

Twenty four patients presented with midline cystic neck swelling moving with protrusion of tongue, four patients

presented with dysphagia, two patients presented with sore throat and two more patients presented with globus (Figure 3).

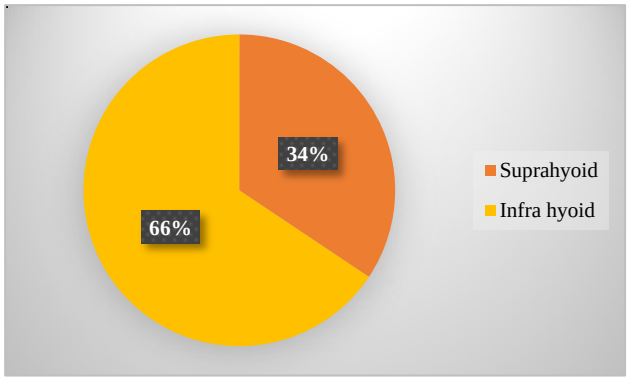

Figure 4: Site distribution of thyroglossal cyst.

On ultrasound twenty one cases were situated in infra hyoid location and eleven cases were supra hyoid in location (Figure 4). Thirty cases were situated in midline of neck and two cases were situated on left side neck.

DISCUSSION

Most common congenital anomaly in relation to thyroglossal duct is the thyroglossal cyst located around region of the hyoid bone. Surgical excision of the thyroglossal cyst is commonly indicated in patients with throglossal cyst presented as mass in midline neck with or without pressure effect like difficult in swallowing/ breathing/pain, or cosmetic reason or recurrent Infection. Removal of thyroglossal cyst along with tract and portion of hyoid bone (Sistrunk operation) results in reduction recurrence rate to 3%-4% compared to local excision which has got high recurrence rate.[9] Till date Sistrunk operation remains surgery of choice for thyroglossal cyst.[9] In our study all the patients underwent Sistrunk operation without any modification and there was no recurrence rate in our study.

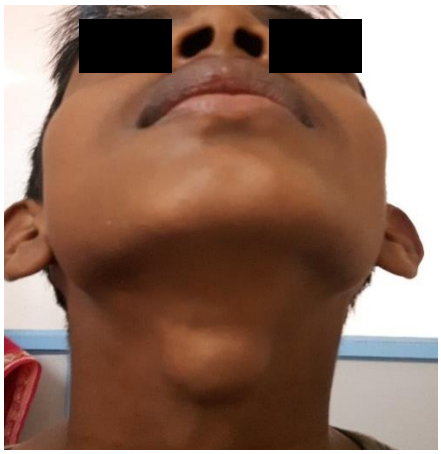

Figure 5 (A): Showing cystic mid line neck swelling just below the hyoid bone.

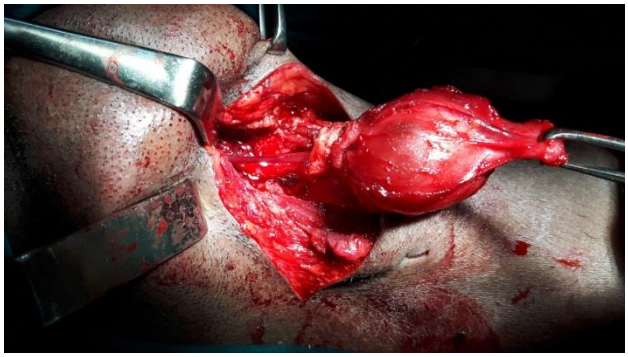

Figure 5 (B): Per op picture of Sistrunk operation.

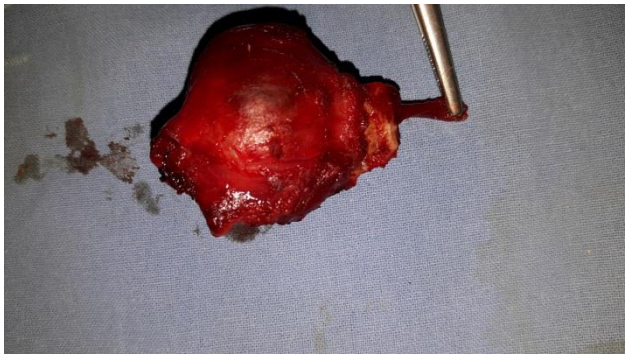

Figure 5 (C): Sistrunk operated specimen wit cyst, part of hyoid bone in view.

According to Maran et al 90% of thyroglossal cyst lies in midline and 10% lies on one side of the midline (mostly on left side). Pounds et al study says about 15 to 50% are at the level of hyoid bone, 20 to 25% are suprahyoid, and 25 to 65% are infrahyoid.[11,12] In our case series 21 cases (64%) were situated infra hyoid region and 11 cases (34%) were supra hyoid. 30 cases (96%) were midline swelling and 2 cases (4%) were situated laterally on left side.

Thyroglossal cysts are seen most commonly in children below the age of 5 years. 60% of the cases are seen below the age of 20 years. There is no significant sex distribution.[13] In our series Age ranged from 5 to 40 years and 56% of the cases were presented between 5-15 years of age. There was slight female predominance in our study i.e. 20 (62.5%) were females and 12 (37.5%) were males.

Thyroglossal cyst presents commonly in childhood as a midline neck lump that is usually enlarging, painless, smooth, and cystic and if infected, pain can occur. There may be difficulty in breathing, especially if the lump becomes large. Generally, thyroglossal duct cyst moves with deglutition and on protrusion of the tongue. Infection can sometimes cause the transient appearance of a mass or the enlargement of the cyst, at times with periodic recurrences.[14] In this study we found that painless midline cystic swelling was the main complaint

in 24 patients (77%)' followed by dysphagia (13%), Sore throat (6%) and globus (4%) in descending order.

In the vast majority of cases, ultrasound supplemented by fine needle aspiration cytology is adequate for pre-treatment assessment.[15] FNAC serves as complementary diagnostic method to histopathological examination.[16,17] Thyroglossal duct cyst yields a clear yellow to whitish fluid. The smear is hypo cellular and shows follicular cells, lymphocytes, and macrophages. According to the histopathological findings, the epithelial linings of the cyst may be pseudo stratified columnar, ciliated columnar, squamous, simple cuboidal, or transitional epithelium. According to Ducic et al there is 1% chance of malignant transformation in thyroglossal cyst.[6] In our series one case came out as papillary carcinoma on histopathological examination. So histopathological examination of surgical specimen is mandatory.

CONCLUSION

Thyroglossal cyst presents most commonly in paediatric age as cystic painless midline neck swelling. Diagnosis is made on clinical examination complimented with ultrasound and FNAC. Sistrunk operation is the treatment of choice to prevent recurrence and histopathological examination of the surgical specimen is must to rule out malignant transformation in the cyst.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Mondin V, Ferlito A, Muzzi E, Silver CE, Fagan JJ, Devaney KO, et al. Thyroglossal duct cyst: personal experience and literature review. Auris Nasus Larynx. 2008;35:11-25.
2. Pincus RL. Congenital neck masses and cysts. In: Head & Neck Surgery - Otolaryngology, 3rd ed., Bailey BJ (Ed). Lippincott Williams & Wilkins: New York; 2001: 933.
3. Pollock WF, Stevenson EO. Cysts and sinuses of the thyroglossal duct. Am J Surg. 1966;112:225-32.
4. Maran AG. Benign disease of the neck. In: Scotts Brown Otolaryngol. A. G. Kerr, Ed. 1997;5:1–4.
5. Joseph TJ, Komorowski RA. Thyroglossal duct carcinoma. Hum Patho J. 1975;6(6):717-29.
6. Ducic Y, Chou S, Drkulec J, Ouellette H, Lamothe A.Recurrent thyroglossal duct cysts:a clinical and pathologic analysis. Int J Pediatr Otorhinolaryngol. 1998;44:47-50.7.
7. Sistrunk WW. The surgical treatment of cysts of the thyroglossal tract. Ann Surg. 1920;71:121-4.
8. Ellis PD, van Nostrand AW. The applied anatomy of thyroglossal tract remnants. Laryngoscope. 1977;87(5):765–70.
9. Brown BM, Judd E Thyroglossal duct cysts and Sinuses. Am J Surg. 1961;102:494-501.
10. Noyek AM, Friedberg J. Thyroglossal duct and ectopic thyroid disorders. Otolaryngol Clin North Am. 1981;14(1):187-201.
11. Maran AG, Butterworth H. Benign disease of the neck. In: Scotts Brown Otolaryngol, 6th edition. 1997: 1–4.
12. Pounds LA. Neck masses of congenital origin, Pediatric Clin N Am. 1981;28(4):841–4.
13. Madana J, Yolmo D, Saxena SK, Gopalkrishnan.S. True thyroglossal fistula. Laryngoscope. 2009;119:2345-7.
14. Deaver MJ, Silman EF, Lotfipour S. Infected thyroglossal duct cyst. Western J Emg Med. 2009;10(3):205.
15. Wong KT, Lee YY, King AD, Ahuja AT. Imaging of cystic or cyst-like neck masses. Clin Radiol. 2008;63(6):613-22.
16. Johnson IJ, Smith I, Akintunde MO, Robson AK, Stafford FW. Assessment of pre-operative investigations of thyroglossal cysts. J R Coll Surg Edinb. 1996;41(1):48-9.
17. Mahadevan BM, Bailey CM, Drake DP. Investigation and treatment of thyroglossal cysts in children. J Royal Society Med. 2000;93(1):18–21.

Cite this article as: Kumar AGN. Clinical experience of thyroglossal cyst management. Int J Otorhinolaryngol Head Neck Surg 2019;5:29-32.