

Original Research Article

Thyroglossal duct cyst variation in presentation: our experience of 3 years

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ABSTRACT

Background: The prime objective of the present study was, to learn incidence of thyroglossal duct cyst in different age and sex groups and variation in its presentation.

Methods: The present retrospective study was carried out in department of otorhinolaryngology and head and neck surgery, GMC Jammu from June 2017 to May 2020. In this retrospective study clinical records, medical records and histopathological records were thoroughly reviewed and studied. 20 patients diagnosed as thyroglossal duct cyst were included in the present study.

Results: Out of 20 patients, 14 were paediatric patients and 6 were adults. 15 patients presented with cystic swelling while 5 patients presented with fistula. Out of 20 patients, 5 patients had suprahyoid presentation, 4 patients had cyst at the level of hyoid and 11 had infrahyoid presentation. 16 patients underwent sistrunk operation while 4 patients underwent simple excision. Out of 4 patients who had undergone simple excision, 2 patients developed recurrence.

Conclusions: In the present study it is concluded that paediatric age group presents most commonly with thyroglossal duct cyst as a midline, painless swelling. The most common site observed is infrahyoid region. After proper investigations and diagnosis, thyroglossal duct cyst should be excised preferably by sistrunk operation.

Keywords: Thyroglossal duct cysts, Thyroglossal fistula, Variation in presentation, Mid line neck swelling

INTRODUCTION

Thyroglossal duct cysts are the most common neck masses of embryological origin found in midline neck region. Thyroglossal duct cyst develop due to failure of obliteration of thyroglossal duct, which forms a bridge between base of tongue and thyroid gland.¹ This developmental abnormality is seen in about 7% population.^{1,2} Although thyroglossal duct cysts are one of the most common pediatric midline neck lesions. They are also seen in adults as well with varying frequency (1, 4).¹⁻⁴ Thyroglossal duct cyst often presents as painless, cystic, mobile, midline swelling of neck. These cysts are associated with increased incidence of ectopic thyroid

tissue. About 1 % patients with thyroglossal duct cyst have an associated malignancy, most common being papillary thyroid carcinoma.^{1-3,5} Most commonly thyroglossal cysts presents between hyoid and thyroid gland but there is considerable variation in their level of presentation. About 20-25% present at the level of suprahyoid, 15-20 % present at the level of hyoid and 25-65% present at infrahyoid level.⁶ Thyroglossal duct cysts are one of the most common painless midline neck swelling and should be differentiated from other swellings with proper investigations like FNAC and ultrasonography of neck. In current article, we are presently sharing our experience about variation in presentation of thyroglossal duct cyst and to learn

incidence of thyroglossal duct cyst in different age and sex groups.

METHODS

Study type, place and duration

Presented study was a retrospective study, conducted at Government medical college, Jammu, from June 2017 to May 2020.

Selection criteria

Medical records of diagnosed cases of thyroglossal cyst/fistula were analysed and studied, which included operative notes, USG findings, FNAC reports and histopathological records of patients. All neck swelling who did not met the criteria of thyroglossal duct cyst or thyroglossal duct fistulas were excluded from the present study.

Procedure

Total 20 patients were found to be diagnosed as thyroglossal duct cyst during 3 years. All patients diagnosed as thyroglossal duct cyst and thyroglossal duct fistula underwent surgery. Out of 20 patients, 16 patients underwent sistrunk operation and 4 patients underwent simple excision of thyroglossal cyst. All surgeries were done under general anaesthesia. SPSS 23 software was used to analyse the data.

RESULTS

In the present study of 20 patients, 15 (75%) were diagnosed with thyroglossal duct cyst while 5 (25%) patients were diagnosed with thyroglossal duct fistula. Out of 20 patients 14 (70%) were paediatric patient and 6 (30%) were adults (Table 1). Out of 20 patients, 5 (25%) presented with suprahyoid swelling, 4 (20%) presented at the level of hyoid and 11 (55%) with infrahyoid swelling (Table 2). Out of 20 patients 13 were males and 7 patients were females. Out of 20 patients, 16 underwent sistrunk procedure while 4 patients underwent simple excision of cyst. Out of 16 patients who underwent sistrunk operation, none had recurrences while out of 4 patients who underwent simple excision, 2 patients had recurrence as fistula.

Table 1: Incidence of thyroglossal duct cyst in present study.

Population (n=20)	N	(%)
Paediatric	14	70
Adult	6	30

Table 2: Clinical presentation in present study.

Level (n=20)	N	(%)
Supra hyoid	5	25
At the level of hyoid	4	20
Infra hyoid	11	55

DISCUSSION

Thyroglossal duct cyst is the most common congenital midline neck swelling. It develops from failure of obliteration of thyroglossal duct, which form a bridge between base of tongue and thyroid gland.² It has been observed that approximately 7% of the population has thyroglossal duct cyst and remnants.^{1,2,4,5,7} From sub mental region to suprasternal notch, Thyroglossal cyst can be found anywhere.⁸ Based on the location, thyroglossal duct cysts are classified into 4 subdivision;⁹ intra lingual, suprahyoid or sub mental, thyrohyoid and suprasternal thyroglossal duct.

Thyroglossal cyst should be differentiated from lymphadenopathy, dermoid cyst, cystic hygroma, ectopic thyroid, branchial cyst, haemangioma, lipoma and sebaceous cyst.^{4,10} Thyroglossal duct cyst usually present as painless, cystic, mobile and fluctuant swelling in close proximity to hyoid bone, which moves with deglutition and protrusion of tongue.^{2,10,11} In adults one fourth of patients presented with draining sinus that result from spontaneous drainage or surgical drainage of abscess.⁵ In the present study of 20 patients, 15 (75%) cases were diagnosed as thyroglossal duct cyst while 5 (25%) cases were diagnosed as thyroglossal duct fistula. Out of 20 patients 14 (70%) were paediatric patient and 6 (30%) were adults (Table 1). Out of 20 patients, 5 (25%) patients presented with suprahyoid swelling, 4 (20%) patients presented at the level of hyoid and 11 (55%) patients presented with infrahyoid swelling (Table 2). Soni et al in their study of 10 patients reported that 8 patients were diagnosed as thyroglossal duct cyst while 2 patients were diagnosed as thyroglossal duct fistula.¹⁰ Out of 10 patients 6 were paediatric patient and 4 were adults and out of 10 patients 3 presented (30%) with suprahyoid swelling, 2 at the level of hyoid (20%) and 5 with infrahyoid (50 %) swelling. These findings correlate with our study.

In the present study, out of 20 patients, 13 were males and 7 patients were females. Out of 20 patients, 16 patients underwent sistrunk procedure while 4 patients underwent simple excision of cyst. Out of 16 patients who underwent sistrunk operation, none had recurrences while out of 4 patients who underwent simple excision 2 patients had recurrence as fistula. These findings correlate with literature.¹⁰

For diagnosis of thyroglossal duct cyst, preoperative ultrasonogram of neck is an appropriate imaging modality.^{5,11} FNAC (fine needle aspiration cytology) is also an inexpensive and safe method. For assessing the

relationship of cyst with hyoid bone and base of tongue, CT scan is better option than USG.¹² MRI is preferred for lesions near the tongue base.¹³ In the present study all 20 patients underwent ultrasonography of neck and out of 20 patients, FNAC was done in 15 patients. As 5 patients presented with fistula, so FNAC was not done. CT SCAN and MRI were not done in any of our patients.

Treatment of choice for thyroglossal duct cyst is sistrunk procedure in which a portion of hyoid bone is removed with meticulous excision of persistent duct up to foramen caecum to reduce recurrence.² In the present study out of 20 patients, 16 patients underwent sistrunk operation while 4 patients underwent simple excision. None of the patients who underwent sistrunk procedure had recurrence. Two patients out of 4 patients, who underwent simple excision, had recurrence. Thyroglossal duct cyst may be associated with malignancy. About 1% of the patients suffering from thyroglossal duct cyst are noted to be associated with malignancy, most common being papillary carcinoma.^{2,10} In the present study histopathology was done in all 20 specimen but none of our patients reveal carcinoma.

CONCLUSION

In the present study, 20 cases of thyroglossal cyst were studied during a period of 3 years. In the present study it is concluded that paediatric age group presents most commonly with thyroglossal cyst as a midline, painless swelling. The most common site observed is infrahyoid region. After proper investigations and diagnosis, thyroglossal duct cyst should be excised preferably by sistrunk operation. Since Malignancy may occur in 1% of thyroglossal duct cyst so it should be mandatory to perform histopathological examination of specimen in every diagnosed case of thyroglossal cyst.

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