

Thyroglossal Duct Cysts in the Elderly Population

Yadranko Ducic, MD, FRCS(C)

Thyroglossal duct cysts may present at any age. However, only rarely do they first present in elderly patients. We outline a series of thyroglossal duct cysts in elderly patients at John Peter Smith Hospital, Fort Worth, TX. There appears to be a remarkable rate of malignant transformation noted in this subset of the population. We would therefore suggest early and definitive removal of all suspected thyroglossal duct cysts presenting in elderly individuals. (Am J Otolaryngol 2002;23:17-19. Copyright © 2002 by W.B. Saunders Company)

Thyroglossal duct cysts are among the most commonly noted congenital cervical cysts in the pediatric population.¹ They represent a failure of involution of the embryonic thyroglossal duct that connects the foramen cecum of the tongue to the thyroid gland. Most present in early childhood as soft cystic midline lesions intimately associated with the hyoid bone. However, a thyroglossal duct cyst may not become symptomatic or clinically apparent until well into adulthood. Presentation in the elderly population is quite rare. It has been reported that approximately 0.6% of such cysts are noted in patients over the age of 60.² Only 8 cases have been reported to date in patients 70 years of age and older.³⁻⁵ Carcinoma formation within a pre-existing thyroglossal duct cyst is extremely rare, with less than 100 cases reported in the world literature. No instances of carcinoma formation in a thyroglossal duct cyst have been documented in patients 70 years of age or older.^{3,5} In this report, we present an unusual series of elderly patients with a diagnosis of thyroglossal duct cysts who presented for surgical treatment.

CASE STUDIES

Patient M.N., a 77-year-old Vietnamese woman in otherwise good overall health, pre-

sented with a firm, midline, 2-cm mass of 6 months' duration superior to the level of the thyroid gland. The patient was otherwise asymptomatic. Clinical examination confirmed the presence of the lesion; there was no associated cervical adenopathy, and vocal cord function was normal. A nuclear medicine scan and ultrasound revealed the lesion to be present at the inferior portion of an apparent thyroglossal duct. Fine needle aspiration was nondiagnostic. The patient was thus brought to the operating room for exploration and surgical extirpation of an apparent thyroglossal duct cyst. A Sistrunk procedure was performed in continuity with a right thyroid lobectomy because another clinically suspicious firm nodule was noted in the right thyroid lobe during surgery (Figs 1, 2). Histologic analysis showed the presence of a papillary carcinoma within the thyroglossal duct and a benign adenoma in the right lobe. The patient thus underwent a complete thyroidectomy and received postoperative radioactive iodine 131.

Patient B.V. is a 70-year-old white woman who presented for evaluation of persistent dysphonia and mild dysphagia of 2 months' duration. Clinical examination showed a superior laryngeal nerve paralysis on the right side with a 1.5-cm cystic nodule slightly to the right of midline superior to the thyroid gland. Thyroid function studies were within normal limits, and results of a fine needle aspiration were suspicious for possible papillary carcinoma. The patient thus underwent surgical exploration, which revealed the presence of a well-delineated thyroglossal duct leading to the hyoid bone with a firm, partly cystic mass in its inferior extent, approximately 2 cm superior to the right thyroid lobe,

From the Department of Otolaryngology, University of Texas Southwestern Medical Center, Dallas, TX, and the Division of Otolaryngology and Facial Plastic Surgery, John Peter Smith Hospital, Fort Worth, TX.

Address reprint requests to Yadranko Ducic, MD, Director of Otolaryngology and Facial Plastic Surgery, John Peter Smith Hospital, 1500 South Main St, Fort Worth, TX 76104. E-mail: yducic@aol.com.

Copyright © 2002 by W.B. Saunders Company
0196-0709/02/2301-0004\$35.00/0
doi:10.1053/ajot.2002.28780



Fig 1. Operative demonstration of tumor located within the inferior portion of a clearly visible thyroglossal duct leading to the hyoid bone.

which had 2 small, firm nodules in its upper pole. The patient underwent a Sistrunk procedure and a right thyroid lobectomy. Pathologic analysis showed a focus of papillary carcinoma within the thyroglossal duct lesion. The thyroid lobectomy specimen was completely benign. The patient received no further treatment.

Patient F.C. is a 72-year-old African-American man who presented with a 1-year history of a slowly enlarging 3-cm cystic mass overlying the central portion of the hyoid bone. Fine needle aspiration showed benign-appearing fluid with no evidence of atypia. Thyroid function studies were within normal limits. Because of the progressive increase in size, the patient underwent a Sistrunk procedure, which showed a benign thyroglossal duct cyst.

Patient W.M. is a 67-year-old African-American man who presented with a 2-year history of a fluctuating 4-cm mass at the level of the hyoid bone. The rest of the head and neck examination was unremarkable. An ultrasound confirmed the presence of a thyroglossal duct cyst and a normal thyroid gland. The patient underwent a Sistrunk procedure, which showed a benign thyroglossal duct cyst. There were focal areas of severe dysplasia with carcinoma in situ noted within the cyst wall. No frank carcinoma was evident.

There is no evidence of recurrent or persistent disease in any of the patients. No adverse outcomes were encountered as a result of surgical intervention in our patient population.

DISCUSSION

Thyroglossal duct cysts may pose a diagnostic challenge in the elderly population. As a consequence of their rarity, these lesions are not often considered in the differential diagnosis of cervical masses in this population. Failure to anticipate the possibility of a thyroglossal duct cyst may be associated with the performance of an inadequate surgical procedure such as simple incisional biopsy or enucleation, both of which are associated with significant recurrence rates.⁶ In each of our patients, clinical suspicion of a possible thyroglossal duct cyst was raised by the presence of an evolving, solitary, generally asymptomatic lesion located between the thyroid gland and the hyoid bone. The diagnosis was confirmed by ultrasound and nuclear medicine scanning (iodine 123 scan) in 2 patients; clinical suspicion alone was sufficient in a single patient, and surgical exploration revealed the presence of a previously unsuspected thyroglossal duct cyst in the remaining patient. Thus, even if unsuspected by clinical examination, one should maintain a certain level of diligence in surgical excision of lesions superior to the thyroid gland and be prepared to proceed with a Sistrunk procedure if a thyroglossal duct cyst is identified intraoperatively.

There does appear to be some controversy

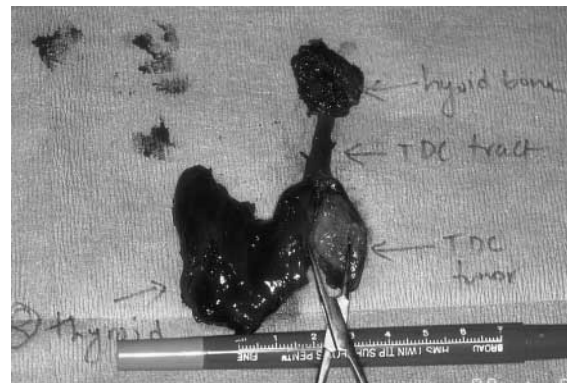


Fig 2. En bloc removal of specimen to include tissue at the base of tongue, central two thirds of the hyoid bone, thyroglossal duct with tumor, and thyroid gland.

in the treatment of thyroglossal duct cysts in the elderly population. Some authors have espoused simple observation in select cases.⁵ We feel that it is more prudent to treat these lesions with definitive surgical excision to eliminate the possibility of subsequent enlargement through mucin accumulation or infection and to provide for the adequate treatment of rare malignant transformation of these lesions. Thyroglossal duct carcinomas are usually papillary adenocarcinomas, but squamous cell and follicular lesions have also been documented.⁷ The presence of malignant transformation in thyroglossal duct cysts in patients in their eighth decade of life has not been previously reported to our knowledge. The optimum treatment of thyroglossal duct carcinomas is not known because of the small number of patients treated at any single institution. It appears that small, isolated papillary carcinomas within a thyroglossal duct may be adequately treated by Sistrunk alone.^{8,9} Sistrunk should include en bloc excision of the cyst or mass, thyroglossal duct, central two thirds of the hyoid bone, and a core from the base of the tongue of approximately 5 mm in depth, in order to encompass the foramen cecum.⁶ Other than microscopic foci of papillary carcinoma, larger lesions are likely to be most conservatively treated as thyroid papillary carcinomas, with thyroidectomy in continuity with a Sistrunk procedure, followed by the administration of postoperative radioactive iodine treatment.³ The presence of overt papillary carcinoma in 2 patients and dysplasia in a third patient suggests a high rate of malignant transformation in this group of patients, favoring early and definitive

removal of all thyroglossal duct cysts presenting at this age.

CONCLUSION

Thyroglossal duct cysts may present at any age. In the elderly, although rarely noted, these lesions should be included in the differential diagnosis of solitary midline or paramedian cervical lesions situated between the thyroid gland and the hyoid bone. In the case of malignant transformation of a thyroglossal duct cyst, we favor a formal Sistrunk procedure for microscopic foci of carcinoma and the addition of en bloc total thyroidectomy with postoperative radioactive iodine for larger carcinomas. We recommend removal of all suspected thyroglossal duct cysts in the elderly population because of the notable rate of malignant transformation in our series of patients.

REFERENCES

1. Solomon JR, Rangecroft L: Thyroglossal duct lesions in childhood. *J Pediatr Surg* 19:555-561, 1984
2. Murphy JP, Budd DC: Thyroglossal duct cysts in the elderly. *South Med J* 70:1247-1248, 1977
3. Katz AD, Hachigian M: Thyroglossal duct cysts. *Am J Surg* 155:741-744, 1988
4. Sammarco GJ, McKenna J: Thyroglossal duct cysts in the elderly. *Geriatrics* 14:98-101, 1970
5. Van Der Wal N, Wiener JD, Allard RHB, et al: Thyroglossal duct cysts in patients over thirty years of age. *Int J Oral Maxillofac Surg* 16:416-419, 1987
6. Ducic Y, Chou S, Drkulec J, et al: Recurrent thyroglossal duct cysts: A clinical and pathologic analysis. *Int J Pediatr Otorhinolaryng* 44:47-50, 1998
7. Saharia F: Carcinoma arising in thyroglossal duct remnant. *Br J Surg* 62:689-691, 1975
8. Page CP, Kemmerer WT, Haff RC, et al: Thyroid carcinomas arising in thyroglossal ducts. *Ann Surg* 180:799-803, 1974
9. Roses DF, Snively SL, Phelps RG, et al: Carcinoma of the thyroglossal duct. *Am J Surg* 145:266-269, 1983