CASE REPORT

ECTOPIC THYROID IN A THYROGLOSSAL DUCT CYST

Kumar S. V[1], Ram Prasad K. V[2]

HOW TO CITE THIS ARTICLE:
Kumar S. V, Ram Prasad K. V. "Ectopic Thyroid in a Thyroglossal Duct Cyst". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 3, January 19, 2015; Page: 287-290.

ABSTRACT: A 13 year old male, presented to the OPD with a midline swelling in the neck since the last 5 years. A presumptive diagnosis of thyroglossal cyst was made clinically, which was later confirmed by ultrasound. Scintigraphy with ^{99m}Tc revealed that this midline mass was functional showing uptake, whereas no thyroid tissue was found in the normal location of the thyroid gland. Further evaluation revealed hypothyroidism. The patient was subsequently started off with thyroxine supplementation.

KEYWORDS: Ectopic thyroid, Thyrogossal duct cyst (TGDC), 99 Tc-thyriod scan, Ultrasonography.

INTRODUCTION: From the summit of the tuberculum impar, the thyroid gland begins as a midline diverticulum of the pharyngeal floor between the first pair of pharyngeal pouches in the fourth week of gestation. This midline diverticulum grows downward and backward as a tubular duct[1] with a varied relationship to the hyoid bone which becomes bilobed and descends into the neck, retaining its attachment to the floor of the pharynx, the upper end being represented by the foramen caecum[2] of the tongue, and it's lower by the pyramidal lobe of the thyroid gland. This is known as the 'thyroglossal duct'. By the sixth week of intrauterine life, it usually undergoes degeneration and disappears.[3] Thyroglossal duct cysts (TDCs) result from a disorder of this developmental process.

Ectopic thyroid tissue is a rare developmental abnormality involving aberrant embryogenesis of the thyroid gland during its passage from the floor of the primitive foregut to its final pre-tracheal position. Its prevalence is about 1 per 100000-300000 people, increasing to 1 per 4000–8000 patients with thyroid disease.[4,5] Ectopic thyroid is most common in females, especially in populations of Asian origin.[6,7] It may occur at any age, from 5 months to 40 years, but it is most common at younger ages. We report the course and management of a child with ectopic thyroid which mimicked the thyroglossal duct cyst.

CASE REPORT: A 13-year-old male child presented to the out-patient department with a history of midline swelling of the neck, first noted at the age of five years. Since its early presentation, there was a gradual increase in size over a period of eight years. There was no history of pain, fever, dysphasia, dyspnea, or any other swellings in the oral cavity and there was no suggestive history of hypothyroidism or hyperthyroidism. No significant family history was found.

On examination, the general health condition of child was normal. A midline freely mobile, firm, non-tender, non-pulsatile neck swelling was found. It was vertically oval, 5x3 cms in size with well-defined borders extending more to the left side of the neck (Fig. 1). Movement with deglutition and on protrusion of tongue was noted. No other palpable swellings were present. Systemic examination including cardiovascular and gastrointestinal systems was normal.

Patient was evaluated and provisionally diagnosed to have thyroglossal duct cyst.

Figure 1

Figure 2

- Routine hematology was normal. TSH levels were elevated with decreases in T3 and T4 hormones.
- On Ultrasound scan, absence of normal thyroid in its anatomical position was noted.[8]
- Fine needle aspiration cytology showed normal thyroid cytology.

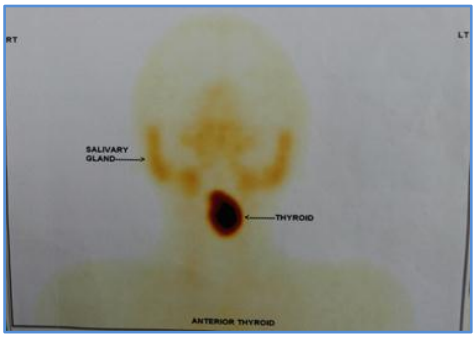

Figure 3

- 99mTc -thyroid uptake scan9 revealed that this midline mass was in fact the only functioning thyroid tissue present in the child.
- Replacement with L-thyroxine was started.

Surgery was deferred as the patient is already in a hypothyroid state and the midline swelling is the only functioning thyroid tissue present and any inadvertent surgery will end up in worsening the hypothyroidism.

DISCUSSION: The wall of a thyroglossal duct cyst is the second most common site for ectopic thyroid tissue, the most common being the lingual thyroid.[11] Up to 1- 2% of patients presenting with a thyroglossal duct cyst have an ectopic thyroid gland.[10,11,12,13] Ectopic thyroid is mostly asymptomatic, but in one third of patients it presents with hypothyroidism.[7,14] Hyperthyroidism is rare. Nevertheless to prevent inadvertent removal of the only functioning thyroid tissue and its

subsequent complications, a routine preoperative USG in suspicious thyroglossal duct cyst is proposed.

Hence, such suspected cases as TGDC should have thyroid function tests, ultrasonography and ^{99m}Tc thyroid scan to locate additional functioning thyroid tissue which avoids subjecting the patient to inappropriate surgery and subsequent sequelae.

CONCLUSION: Ectopic Thyroid tissue in a Thyroglossal duct cyst is a rare anomaly. Here with we report a case in a 13 year old boy. Functioning thyroid tissue in its normal anatomical position must be ensured before resorting to surgery in this type of cases.

REFERENCES:

1. Som PM, Smoker WR, Reidenberg JS, Bergemann AD, Hudgins PA, Laitman J, Embryology and anatomy of the neck. In: Som PM, Curtin HD, eds. Head and neck imaging, 5th Ed. St. Louis, Mo: Mosby 2011; 2117-2163.
2. Noussious G, Anagnostis P, Goulis DG, Lappas D, Natsis K. Ectopic Thyroid Tissue: anatomical,clinical and surgical implications of a rare entity. Eur J endocrinol 2011; 165 (3): 375-382.
3. Felice MD, Lauro RD, 2004 Thyroid development and its disorders: Genetic and Molecular mechanisms. Endocrine reviews 25: 722-746.
4. Di Benedetto V. Ectopic thyroid gland in the submandibular region simulating a thyroglossal duct cyst: a case report. J Pediatric Surgery. 1997; 32: 1745-6.
5. Babazade F, Mortazavi H, Jalalian H, Shahvali E. Thyroid tissue as a submandibular mass: a case report. Journal of Oral Science. 2009; 51: 655-7.
6. Gopal RA, Acharya SV, Bandgar T, Menon PS, Marfatia H, Shah NS. Clinical profile of ectopic thyroid in Asian Indians: a single-center experience. Endocrine Practice. 2009; 15: 322–5.
7. Yoon JS Won KC, Cho IH, Lee JT, Lee HW. Clinical characteristics of ectopic thyroid in Korea. Thyroid. 2007; 17: 1117-21.
8. Lim-Dunham JE, Feinstein KA, Yousef DK, Ben- Ami T. Sonographic demonstration of a normal thyroid gland excludes ectopic thyroid in patients with a thyroglossal cyst. AJR Am J Roentgenol 1995 Jun; 164 (6): 1489-91.
9. Pinczower E, Crockett DM, Atkinson JB, Kun S. Pre-operative thyroid scanning in a presumed thyroglossal duct cyst. Arch Otolarygol Head Neck Surg 1992; 118: 985-88.
10. Radkowski D, Arnold J, Healy GB, McGill T, Treves ST, Paltiel H, et al. Thyroglossal duct remnants. Preoperative evaluation and management. Arch Otolaryngol Head Neck Surg. 1991; 117: 1378.
11. DeMello DE, Lima JA, Liapis H. Midline cervical cysts in children. Thyroglossal anomalies. Arch Otolaryngol Head Neck Surg. 1987; 113: 418.
12. Tunkel DE, Domenach EE. Radioisotope scanning of thyroid gland prior to thyroglossal duct cyst excision. Arch Otolaryngol Head Neck Surg. 1998; 124: 597-
13. Gupta P, Maddalozzo J. Preoperative sonography in presumed thyroglossal duct cysts. Arch Otolaryngol Head Neck Surg. 2001; 127: 200-2.

14. Al-Jurayyan NA, El-Desouki MI, 1997 Transient Iodine organification Defat in Infants with Ectopic Thyroid glands. Clin Nucl Med 22: 13-16.

AUTHORS:

1. Kumar S. V.
2. Ram Prasad K. V.

PARTICULARS OF CONTRIBUTORS:

1. Professor, Department of Surgery, Andhra Medical College, Visakhapatnam.
2. Assistant Professor, Department of Anatomy, Andhra Medical College, Visakhapatnam.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Ram Prasad K. V,
11-8-4, Plat No. 1,
Dasapalla Hills, Visakhapatnam,
Andhra Pradesh-530002.
E-mail: venkat_7rp@yahoo.com

Date of Submission: 08/01/2015.
Date of Peer Review: 09/01/2015.
Date of Acceptance: 13/01/2015.
Date of Publishing: 19/01/2015.