CASE REPORT

DUAL THYROID ECTOPIA: A RARE CASE REPORT

Rohit Madhurkar¹, Devdas Acharya², Ravichandra G³, C.K. Vasu⁴, Arafat Haris⁵

HOW TO CITE THIS ARTICLE:

Rohit Madhurkar, Devdas Acharya, Ravichandra G, C. K. Vasu, Arafat Haris. "Dual thyroid ectopia: a rare case report". Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 30, July 29; Page: 5601-5604.

INTRODUCTION: The presence of ectopic thyroid tissue is due to the developmental defect of thyroid gland that leads to abnormal location of the thyroid tissue. It occurs when there is an arrest or irregularity in its descent. In 70% of cases of ectopic thyroid, the normal thyroid gland is absent¹. The normal thyroid gland is located in the pre-tracheal region and its ectopic locations are usually along the normal path of descent but can be seen at distant sites.

The thyroid gland develops at the junction between tuberculum impar (forms anterior two third of tongue) and hypobranchial eminence (forms the posterior one third of tongue) which forms the foramen caecum². The thyroglossal duct descends inferiorly, passing in front of the hyoid bone and larynx, localizes in the lower neck anterior to the thyroid cartilage and first few tracheal rings² [Figure.1].

Figure.1: Schematic representation of the normal path of descent of the Thyroid gland

It is very rare to have two ectopic foci of thyroid tissue and only a very few cases of dual ectopia have been reported in world literature.

CASE REPORT: A 10year old girl presented to our hospital electively with a firm swelling in the submental region, since 8 months. Movement of the lesion was noted on swallowing. She had no complains of pressure symptoms like dyspnea, dysphagia, dysphonia. Birth history and

CASE REPORT

developmental milestones were normal. Thyroid function test revealed euthyroid state. The patient was referred to our department for radiological evaluation.

High resolution ultrasound (8-10MHz) of the neck revealed absence of normally located thyroid gland with a submental solid lesion containing few cystic areas within [Figure.2a,b]. Doppler revealed vascularity within it. Diagnosis of solitary ectopic thyroid was made.

Figure.2-(a)Absence of normal thyroid tissue in the pretreacheal location(b)Submental solid lesion with a few cystic areas within.

Subsequently, CECT was done which showed two well defined homogenously enhancing lesions, one in the floor of mouth abutting the hyoid bone and other in base of tongue, abutting the glosso-epiglottic fold (Figure.3a-c).

Figure.3-(a)CECT axial section at the level of epiglottis shows well defined enhancing lesion in base of tongue (arrow) abutting the glosso-epiglottic fold (b) CECT axial section at the level of hyoid bone shows well defined enhancing lesion (arrow) with intralesional cystic areas in the floor of mouth

CASE REPORT

abutting the hyoid bone (c) CECT sagittal section shows two well defined enhancing (arrow) one in the base of tongue abutting the glosso-epiglottic fold with another in the floor of mouth abutting the hyoid bone.

DISCUSSION: The embryogenesis of thyroid gland is around fourth week of embryonic life. The thyroid gland arises from a midline thyroid diverticulum that forms from the endoderm in the floor of the pharynx just caudal to the 1st pharyngeal arch². The thyroid gland develops from a junction between tuberculum impar and hypobranchial eminence which forms the foramen caecum. The thyroid diverticulum forms a bilobed structure, as it descends it fuses with the two lateral diverticula that are derived from the 4th pharyngeal pouch. As it advances caudally, it remains attached to pharyngeal wall by the thyroglossal duct (which obliterates on the 6th to 8th weeks of life). The thyroglossal duct descends caudally and anterior to the hyoid bone and larynx, reaching its location in the lower neck anterior to the thyroid cartilage and first few tracheal rings². Abnormal or incomplete descent in the thyroid gland leads to its ectopic location.

The ectopic locations include lingual, suprahyoid and infrahyoid, lateral aberrant thyroid, substernal goiter, struma ovarii and struma cordis. Ectopic thyroid has also been found in larynx, trachea, oesophagus, pericardium, diaphragm and branchial cysts¹. The most common ectopic location is lingual thyroid (about 90% of all cases) with a prevalence between 1:1,00,000 and 1:3,00,000 and a clinical incidence between 1:4,000 to 1:10,000³. First ectopic thyroid was reported in a newborn in 1869 by Hickman⁴ causing upper airway obstruction. Ectopic thyroid is more common in females, seen during adolescence and pregnancy as there is increased demand of thyroid hormone. In 70% of patients with ectopic thyroid, the thyroid glandular tissue is not found in its usual location⁵.

Ectopic thyroid symptoms vary from asymptomatic to anterior neck swelling with or without altered thyroid status. They are usually asymptomatic or produce symptoms due to its location and size. Lingual thyroid can cause foreign body sensation in tongue and dysphagia. All diseases affecting the normal thyroid can affect the ectopic thyroid like adenoma, hyperplasia, inflammation and rarely malignancy⁶. Ectopic thyroid and normally placed thyroid gland have similar malignant transformation rate⁶.

In the global literature, a very few cases of dual thyroid ectopia have been reported, where in two ectopic foci of thyroid tissue are seen simultaneously. In an extensive review of literature, it was found that the mean age of these patients was 15 years, more common in females with male to female ratio 1:1.25⁷. In almost all of these patients, one of the sites of ectopic thyroid was lingual or sublingual region. The second ectopic focus was at subhyoid or suprahyoid level in most cases.

Ultrasound of neck (loco-regional) and CECT of neck are valuable modalities in a differential diagnosis. Ultrasound examination plays a role in differentiating cystic and solid masses, to see if the normal thyroid is in its location. On CECT scan, thyroid tissue shows characteristic moderately homogenous enhancement which helps in identifying its ectopic location which could have been difficult on ultrasound. An important diagnostic modality for ectopic thyroid is a thyroid scan with Technetium (99m Tc) but ultrasonography, CT scan and MRI may help in defining the extension and location of the ectopic thyroid gland⁸. Radionuclide study however, is indicated in determining the locations and activity of ectopic thyroid.

CASE REPORT

In our case, the dual ectopic thyroid tissue is seen in the base of tongue abutting the glosso-epiglottic fold and another in the floor of mouth abutting the hyoid bone. Imaging is essential to avoid inadvertent surgery of this ectopic thyroid gland.

REFERENCES

1. R Kumar, S Sharma, Amarwah, D Moorthy, D Dhanwal, A Malhotra. Ectopic goitre masquerading as submandibular gland swelling: a case report and review of the literature. Clin Nucl Med 2001;26(4):306-09.
2. Sadler TW. Langman's Medical Embryology. Baltimore (MD): Williams & Wilkins; 1990:312-13.
3. Toso A, Colombani F, Averono G, Allufi P, Pia F. Lingual thyroid causing dysphagia and dysphonia. Acta Otorhinolaryngol Ital 2009;29(4):213-7.
4. Hickman W. Congenital tumour of the base of the tongue pressing down the epiglottis on the larynx and causing death suffocation sixteen hours after birth. Trans Pathol Soc Lond 1869;20:160-161.
5. Baik SH, Choi JH, Heung-Man L. Dual ectopic thyroid. Eur Arch Otorhinolaryngol 2002;259:105-07.
6. Massine R, During S, Koroscil T. Lingual thyroid carcinoma: A case report and review of literature. Thyroid 2001;11(1):1191-6.
7. Sood A, Sood V, Sharma DR, Kumar R. Thyroid scintigraphy in detecting dual ectopic thyroid: a review. Eur J Nucl Med Mol Imaging 2008;35:843-46.
8. Abdallah Matta MP, Dubbary PH, Pessy JJ, Caron P. Lingual thyroid and hyperthyroidism: A new case and review of the literature. J Endocrinol Invest 2002; 25:264-67.

AUTHORS:

1. Rohit Madhurkar
2. Devdas Acharya
3. Ravichandra G.
4. C.K. Vasu
5. Arafat Haris

PARTICULARS OF CONTRIBUTORS:

1. Resident, Yenepoya Medical College, Yenepoya University, Department of Radio Diagnosis, Mangalore, Karnataka, India.
2. Professor, Yenepoya Medical College, Yenepoya University, Department of Radio Diagnosis, Mangalore, Karnataka, India.
3. Associate Professor, Yenepoya Medical College, Yenepoya University, Department of Radio Diagnosis, Mangalore, Karnataka, India.
4. Professor, Yenepoya Medical College, Yenepoya University, Department of Radio Diagnosis, Mangalore, Karnataka, India.

5. Resident, Yenepoya Medical College, Yenepoya University, Department of Radio Diagnosis, Mangalore, Karnataka, India.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Rohit Madhurkar,
Department of Radio-Diagnosis,
Yenepoya Medical College,
Yenepoya University, Mangalore,
Karnataka, India, Pin Code: 575018.
Email – drrohitm@gmail.com

Date of Submission: 20/07/2013.

Date of Peer Review: 22/07/2013.

Date of Acceptance: 24/07/2013.

Date of Publishing: 25/07/2013