

**Case Report**

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**Ectopic thyroid imitating a thyroglossal cyst: A case report**

**Utpal Sarmah<sup>1</sup>, Priyanka Hardikar<sup>2</sup>, SanjayK Chhabria<sup>3</sup>, Athira Vishnurag<sup>4</sup>**

<sup>1</sup> Senior Resident, Department of ENT, Topiwala National Medical College and BYL Nair Charitable Hospital, Mumbai, Maharashtra, India

<sup>2</sup> Assistant Professor, Department of ENT, Topiwala National Medical College and BYL Nair Charitable Hospital, Mumbai, Maharashtra, India

<sup>3</sup> Associate Professor, Department of ENT, Topiwala National Medical College and BYL Nair Charitable Hospital, Mumbai, Maharashtra, India

<sup>4</sup> Post Graduate Student, Department of ENT, Topiwala National Medical College and BYL Nair Charitable Hospital, Mumbai, Maharashtra, India

**Abstract**

A twelve-year-old male child presented with a midline neck mass for three years that moved with deglutition and tongue protrusion. A clinical diagnosis of thyroglossal duct cyst was made and patient was further evaluated for surgery. Ultrasonography of neck showed an ectopic thyroid tissue with features of chronic thyroiditis superficial to thyroid cartilage and thyroid bed appeared empty. Cytopathology reported Bethesda category 2 features of chronic thyroiditis. Thyroid profile of the patient revealed sub clinical hypothyroidism. On further evaluation with Tc-99m pertechnetate scan, it was revealed that this midline neck swelling was in fact the only functioning thyroid tissue, hence no surgery was performed. This case highlighted the importance of ultrasonography along with thyroid scan in the preoperative evaluation of a midline neck swelling.

**Keywords:** Thyroglossal duct cyst, Ectopic thyroid, Thyroid dysgenesis, Thyroid Scintigraphy, Tc 99m Pertechnetate scan.

**INTRODUCTION**

Thyroglossal duct remnants are one of the commonest causes of congenital neck mass and the second most common cause of a neck mass in children [1]. It is the most common variant of thyroid dysgenesis and has a prevalence of 1 per 100,000–300,000 persons [1]. These remnants persist due to failure of involution of the thyroglossal duct following embryological descent of the thyroid gland. An ectopic thyroid tissue is a rare developmental abnormality and may be found anywhere along the line of the obliterated thyroglossal duct, usually from the base of the tongue to the mediastinum [2]. It has a female preponderance with 75-80 % cases seen exclusively in females, especially in Asian population [2,3]. Age group of presentation may vary from 5 months to 40 years, however it is most commonly seen in younger age group [2,3].

**CASE REPORT**

A 12-year-old male child presented to our out-patient department with history of midline neck swelling that was initially noted by his guardian around 3 years back. As per the patient this neck swelling has slightly increased in size since last three months. There was no history of dysphagia, odynophagia, dyspnoea, nor there was any history suggestive of features of hypo or hyperthyroidism. On examination a midline firm neck swelling (2x3) cm in size in the subhyoid region moving with deglutition and on protrusion of tongue was noted (Fig. 1). Systemic examination findings were normal. A provisional clinical diagnosis of thyroglossal duct cyst was made and patient was further evaluated for surgery. Ultrasonography of neck however revealed the presence of an ectopic thyroid tissue with features of chronic thyroiditis superficial to thyroid cartilage and the thyroid bed appeared empty. Thyroid profile Total T3:167.2ng/ml (Range 87-178 ng/ml), Total T4:10ug/ml (Range: 6-12.5ug/ml) & TSH:8.5 u IU/ml (Range:0.35-5.5 u IU/ml) indicated towards sub clinical hypothyroidism. An USG guided FNAC was also performed that demonstrated thyroid follicular cells in clusters and small sheets along with lymphocytic infiltration and follicular destruction giving an impression of Bethesda category 2 features of chronic thyroiditis. Tc-99m pertechnetate thyroid scintigraphy confirmed the presence of ectopic thyroid tissue in along the thyroglossal track with no functioning gland noted at normal anatomical position (Fig. 2). An Endocrinologist opinion was sought in view of sub clinical hypothyroidism and patient was further

**\*Corresponding author:**

**Dr. Utpal Sarmah**

Senior Resident, Department of ENT, Topiwala National Medical College and BYL Nair Charitable Hospital, Mumbai, Maharashtra, India

Email:

laptu.hamras@gmail.com

subjected to anti TPO antibody testing which came out to be negative. A thorough cardiovascular examination was also performed that showed no significant abnormality. No surgery was performed for this patient and patient was advised for follow up after 3 months with a repeat TSH level. TSH level after 3 months was found to be 8.9 u IU/ml (Range:0.35-5.5uIU/ml). Patient was started on 25mcg/day L-thyroxine therapy and was advised for regular follow up after every 3 months in ENT and Endocrinology department OPD for monitoring the size of the swelling and thyroid hormones level. On subsequent follow up, it was observed that the thyroid profile was within normal range and the size of the neck swelling has reduced significantly.



Figure 1: Clinical Picture showing a midline neck swelling

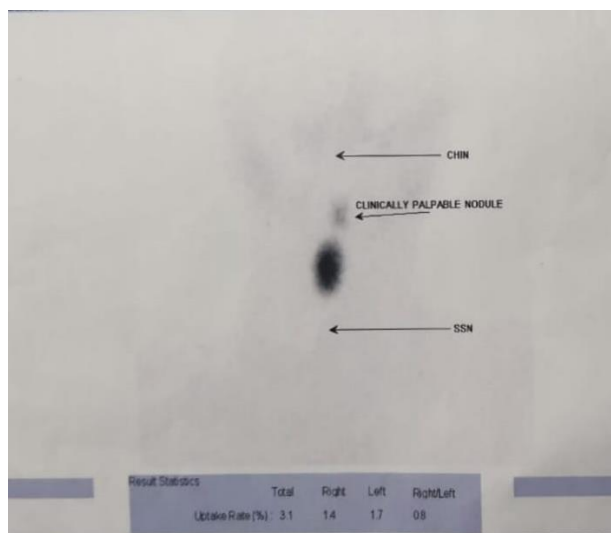


Figure 2: Tc-99m Pertechnetate scan showing a dual ectopic thyroid tissue

## DISCUSSION

An ectopic thyroid can present in any age group ranging from newborn till the fourth through the sixth decade. It most commonly presents as a lingual thyroid followed by its presence along the wall of a thyroglossal duct track. [4,5]. The incidence of ectopic thyroid tissue in a presumed thyroglossal duct cyst is 1-2% [6]. An ectopic thyroid tissue in the neck may enlarge thereby causing obstructive symptoms or patient may also present with features of hypo or hyperthyroidism. Rarely some patient present with oral bleed in case of a lingual thyroid [7]. Treatment option may vary between medical management or surgical excision depending on the functional and anatomical status of the gland and the associated presenting symptoms. Hence in order to prevent inadvertent removal of the only functioning thyroid tissue and subsequent sequelae due to hypothyroidism, the patient needs to be

evaluated with USG Neck, Fine Needle Aspiration Cytology, Thyroid function Test and Tc-99m pertechnetate thyroid scan. This investigation protocol not only helps in differentiation of ectopic thyroid tissue from a simple thyroglossal duct cyst but also avoids subjecting the patient to unnecessary surgery and further complications or sequel like need for lifelong exogenous thyroxine replacement and growth and developmental delay specially in children.

## CONCLUSION

A midline neck swelling moving with deglutition and on tongue protrusion is almost always considered to be a thyroglossal cyst unless proved otherwise. Surgical removal of such swelling based on ultrasonographic findings only may sometimes have a deleterious effect on the patient as it may be the only functioning thyroid tissue. Hence a patient needs to be evaluated adequately preoperatively with ultrasonography along with radionuclide scanning to determine exact nature of such swelling and thus avoid any inadvertent consequences in the future.

## Conflicts of interest

None declared.

## Financial support

None declared.

## Informed Consent

Informed consent was obtained from the individual participant and legal guardians. The participant and his legal guardian have consented to the submission of case report to the journal.

## ORCID ID

Utpal Sarmah: <https://orcid.org/0000-0002-7351-8607>

Priyanka Hardikar: <https://orcid.org/0000-0001-9963-2822>

Sanjay K Chhabria: <https://orcid.org/0000-0001-5580-3984>

Athira Vishnurag: <https://orcid.org/0000-0002-5807-8420>

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