

Ectopic Thyroid in Presumed Thyroglossal Duct Cyst

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We report a case of an eight year old female child with a midline neck mass for seven years. Since its early presentation, this midline mass has recently increased in size. A presumptive diagnosis of thyroglossal duct cyst was made clinically & planned for surgery. Preoperative evaluation revealed hypothyroidism, hence she was referred to us for the management of the same prior to excision. On further evaluation ⁹⁹Tc-thyroid scan showed that this midline mass was in fact the only functioning thyroid tissue & ultrasonography revealed no thyroid tissue in usual location, therefore no surgery was performed. This case demonstrates the essential role of a thyroid scan and ultrasonography in the preoperative evaluation of a midline neck mass.

Key words: Ectopic thyroid, Thyroglossal duct cyst (TGDC),⁹⁹Tc-thyroid scan, Ultrasonography.

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 [1,2]. Ectopic thyroid is most common in females, especially in populations of Asian origin [3,4]. 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 as thyroglossal duct cyst.

CASE REPORT

An 8-year-old female child presented to our out-patient department with history of midline neck mass first noted at one year of age. Since its early presentation, this midline mass had increased in size, more so in recent past. There was no history of dysphagia, dyspnea, recurrent respiratory tract infections and there was no history suggestive of hypothyroidism or thyrotoxicosis. Patient was evaluated earlier and provisionally diagnosed to have thyroglossal duct cyst and planned for surgery. Preoperative investigation revealed hypo-thyroidism, so she was referred to our department for the management of hypothyroidism prior to excision.

On examination, the general health condition of child was normal with height of 121 cm, weight of 22 kg, patient had pre-pubertal sexual maturity. A midline firm neck swelling 2×2 cm in size in the hyoid region moving with deglutition and protrusion of tongue was noted (**Fig. 1**). Systemic examination including cardiovascular and gastrointestinal systems were normal.

Routine hematology was normal, bone age was slightly delayed (7 yrs as determined by Greulich and

Pyle chart), TSH-35.71 mIU/mL (0.3-5.5 mIU/mL), Fine needle aspiration cytology –thyroglossal cyst, thyroid peroxidase antibody 20 U/mL (1-34U/mL). ⁹⁹Tc -thyroid uptake scan revealed that this midline mass was in fact the only functioning thyroid tissue. Replacement with L-thyroxine 50 mcg/day was started and no surgery was performed. On follow-up, patient is doing well, her TSH was 1.26 mIU/mL with slight reduction in the size of the gland.

DISCUSSION

The most common site of ectopic thyroid is a lingual thyroid. The wall of a thyroglossal duct cyst is the second most common site for ectopic thyroid tissue. Up to 1 to 2 percent of patients presenting with what appears to be a thyroglossal duct cyst TGDC have an ectopic thyroid gland [5,6]. Ectopic thyroid is mostly asymptomatic, but approximately a third of patients present with

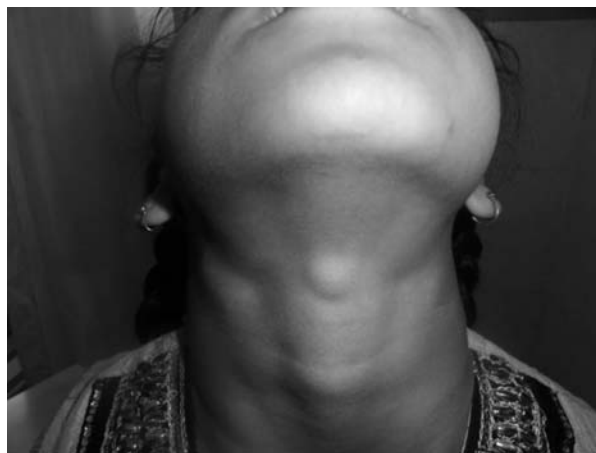


FIG.1 Showing midline neck swelling.

hypothyroidism, hyperthyroidism is exceptionally rare. These conditions cause enlargement of the gland thereby obstructive symptoms. With treatment size decreases, but surgical excision may become necessary in some cases.

Although most of the available literature state the incidence of ectopic thyroid tissue in presumed thyroglossal duct cyst is 1-2% [7]. Gupta, *et al.* [8] reported in their series that when screened by pre-operative ultra sound, this incidence is substantially less. Nevertheless to prevent inadvertent removal of only functioning thyroid tissue and subsequent complications, they proposed routine preoperative USG in suspicious thyroglossal duct cyst.

This case demonstrates clinical difficulty in differentiation of ectopic thyroid tissue with a thyroglossal duct cyst. Hence such suspected cases as TGDC should have thyroid function tests, ultrasonography and ⁹⁹Tc thyroid scan to locate additional functioning thyroid tissue which avoids subjecting the patient to inappropriate surgery and subsequent sequelae.

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Continuous Glucose Monitoring System for Congenital Hyperinsulinemia

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Blood glucose monitoring is a way of testing the concentration of glucose in the blood. The most recent advance is the development of continuous glucose monitoring system (CGMS) which gives 24 hour trend of blood sugar levels thus helping both the patient and the physician in achieving better glycemic control. CGMS in pediatric population is generally used for those on insulin pumps and those who are having fluctuating blood glucose levels. This case highlights the use of CGMS for a child with congenital hyperinsulinemia. It helped in close monitoring of blood glucose levels thereby identifying recurrent hypoglycemia, leading to a better control of blood glucose levels.

Key words: Blood glucose, Management, Monitoring.

One of the advancements for monitoring glycemic status is the development of continuous glucose monitoring system (CGMS) which gives 24 hour trend of blood sugar levels. The CGMS unit consists of a glucose sensor, inserted into the subcutaneous tissue which senses the interstitial fluid glucose levels electrochemically every 10 seconds and records an

average value every 5 minutes, thus giving 288 values per day. The sensor can be left *in situ* for upto 72 hours. Compared to CGMS, finger-stick blood glucose values are indicative of point of time values only rather than the real time measures. Studies have demonstrated that patients with continuous sensors experience less glycemic variability and a better glycemic profile.