



CASE REPORT

Dual Ectopic Thyroid: An Uncommon Imaging Diagnosis

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ABSTRACT

Ectopic thyroid means presence of thyroid gland tissue in abnormal position. Dual ectopic thyroid is the presence of thyroid gland tissue in two different abnormal locations. It is a rare entity. We report a case of 17-year-old girl who presented with a gradually increasing swelling in the upper neck. Her thyroid tests were abnormal, with mildly reduced T3 and T4 levels and increased TSH levels. Ultrasound revealed an isoechoic homogenous lesion in the intermuscular planes, in the infrahyoid neck. Contrast-enhanced computed tomography (CECT) of neck was performed which showed two similarly homogeneously enhancing lesions, one in the base of tongue and another in the infrahyoid neck. Thyroid gland was not seen in its normal location. On the basis of these findings, diagnosis of dual ectopic thyroid was made. Patient was managed with thyroid hormone replacement therapy to manage hypothyroidism and decrease the size of swelling.

Keywords: Thyroid, Ectopic, Computed tomography.

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INTRODUCTION

Ectopic thyroid means presence of thyroid gland tissue in abnormal position. It is a well-known entity. However, the presence of dual ectopic thyroid tissue is rare. We report a case of 17-year-old girl, who presented with gradually increasing neck swelling. Computed tomography (CT) subsequently done for the patient showed presence of dual ectopic thyroid tissue, one in higher cervical region, in infrahyoid neck and one in base of tongue. Hence, for a proper evaluation of a suspected ectopic thyroid tissue, CT, ultrasonography (USG) or ^{99m}Tc pertechnetate scan should be done to prevent the misdiagnosis of dual ectopic thyroid tissue.

CASE REPORT

A 17-year-old girl presented to the outpatient department with the complain of gradually increasing swelling in

the upper neck, since 1 month. There was no complain of redness or pain associated with it. This swelling was not associated with dysphagia or any change in the voice. On clinical examination, thyroid was not palpable in its normal, position. Her thyroid tests were abnormal, with mildly reduced T3 and T4 levels and increased TSH levels s/o subclinical hypothyroidism. Ultrasonography was done which showed isoechoic homogenous lesion measuring 20 × 15 mm, in the intermuscular planes, in infrahyoid neck. This lesion showed mildly increased vascularity. Thyroid gland was not seen in its normal position. Contrast-enhanced computed tomography (CECT) of neck was done which showed two similarly homogeneously enhancing lesions, one in the base of tongue (measuring approximately 20 × 12 × 8 mm) and another in the infrahyoid neck (measuring approximately 20 × 15 × 8 mm). Thyroid was not seen in its normal location (Figs 1A to C). On the basis of these findings, diagnosis of dual ectopic thyroid was made. Patient was managed with thyroid hormone replacement therapy to manage hypothyroidism and decrease the size of swelling.

DISCUSSION

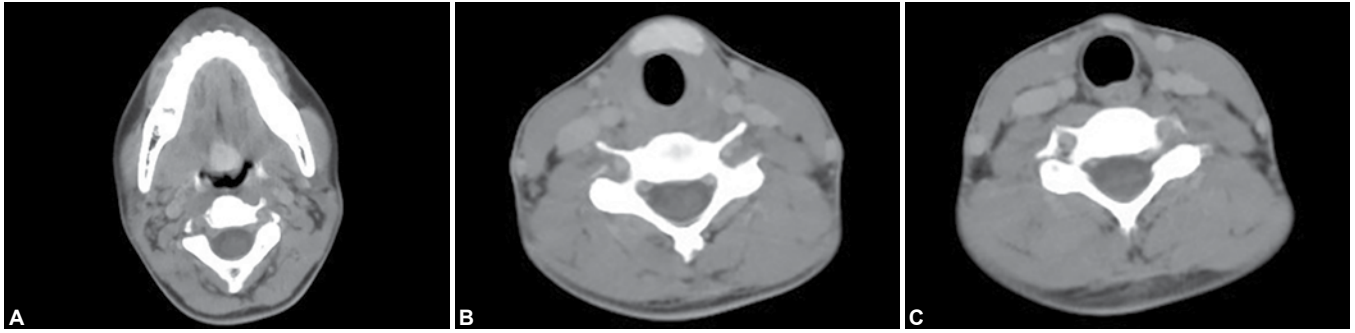
There are a number of known congenital anomalies of thyroid gland. They are basically divided into three types: agenesis of thyroid gland, dysgenesis of thyroid gland and persistence of the thyroglossal duct. Dysgenesis of thyroid gland includes hemigenesis or ectopic thyroid. Ectopic thyroid results due to abnormal embryonal migration of thyroid gland as it descends from foramen caecum till the level of thyroid cartilage, in front of hyoid bone and 2nd tracheal cartilage.¹ It can occur anywhere along the descent pathway of thyroid gland. Most common location is lingual or base of tongue. Other common locations are sublingual, higher cervical, intra-tracheal and mediastinal. Dual ectopic thyroid is rare, incidence ranging from one in 50,000 to 70,000.² The pathology is not well understood. One study says it is due to the two population of cells diverging at early stage of development which may be due to insufficient signalling gradients in surrounding tissues during early organogenesis or may indirectly support the polyclonal nature of thyroid.²

Most of the ectopic thyroid gland are asymptomatic benign. Two cases of dual ectopic thyroid with malignancy have been reported.^{3,4} Dual ectopic thyroid can present in the neonatal period with congenital

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Figs 1A to C: Axial CECT images of a 17-year-old girl: (A) Homogeneously enhancing lesion s/o ectopic thyroid tissue in the base of tongue (lingual thyroid), (B) another similar lesion s/o ectopic thyroid tissue in higher cervical location, in infrahyoid region and (C) absent thyroid tissue in its normal location

hypothyroidism. One in 10 children of congenital hypothyroidism due to ectopic thyroid have dual ectopic thyroid.² However, it more commonly presents in the adolescence or after pregnancy when the requirement of thyroid hormone increases and there is increase in the size of ectopic gland. This may lead to dysphagia if there is lingual thyroid or visible increasing swelling in the neck. Dual ectopic thyroid is more common in females. Female to male ratio is 1.25:1.⁵

The diagnosis of high cervical ectopic thyroid can be made on USG, which will show homogenous isoechoic lesion in neck, with the absence of normally located thyroid gland. However, it is difficult to diagnose lingual thyroid on USG. Computed tomography is another modality which will show clearly the anatomy of neck, with ectopic thyroid gland location. Both lingual thyroid and high cervical thyroid can be seen clearly on CT. However, thyroid ⁹⁹Tc pertechnetate scan is the modality of choice which will show absent thyroid gland in its normal location and will show any ectopically located thyroid gland whether single or multiple.¹ Fine needle aspiration cytology (FNAC) is not advisable in a neck swelling in which there is the possibility of ectopic thyroid gland, as they are vascular and may lead to excessive bleeding. Management of ectopic thyroid gland depends on the symptom it produces. As most of the ectopic thyroid glands are asymptomatic, no treatment is needed for them. They can present with clinical or subclinical hypothyroidism which has to be treated with hormone replacement therapy. If they lead to visible swelling in neck or dysphagia as in lingual thyroid, that can also be treated with thyroid hormone replacement therapy which will lead to decrease in TSH levels and decrease in size of ectopic thyroid tissue. Or they can be surgically removed, considering the complication of hypothyroidism in view. Another option is radioactive iodine ablation in elderly patient who are unfit for surgery.

Common differential diagnosis of ectopic thyroid gland in neck presenting as swelling are thyroglossal

duct cyst, dermoid, epidermoid cyst, lymphadenopathy and lipoma. Most important is thyroglossal duct, which will also present as midline swelling along the pathway of descent of thyroid gland and will move with deglutition. Ectopic thyroid gland can mimic complicated thyroglossal cyst, especially if it undergoes colloid degeneration. The differentiation between them is important as the management varies for both and can result in medicolegal implications for the doctor. There have been reported cases in literature, in which ectopic thyroid in neck has been surgically removed due to mistaken diagnosis, leading to hypothyroidism of the patient.⁶

Hence, it is important to know this entity, i.e. dual ectopic thyroid so that in presence of one ectopic thyroid tissue, presence of thyroid tissue in other ectopic locations can be ruled out. Ultrasonography CT or thyroid nuclear scan can be helpful in making the diagnosis, to avoid unnecessary mismanagement.

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