Lateral thyroid ectopia

Case Report

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(Received 3 April 2012, Revised 27 June 2012, Accepted 22 July 2012)

ABSTRACT

We report here a rare case of lateral ectopia of thyroid without orthotopic thyroid tissue in an Indian teenager, who was referred to our department for a thyroid scintigraphy. Technetium Pertechnetate ($^{99m}TcO_4^-$) scan showed uptake in laterally placed soft tissue structure along with functioning thyroid tissue in high anterior midline neck region in line with thyroglossal tract. There is no uptake in the normal anatomical thyroid bed region. Ultrasound study of the neck confirmed a soft tissue structure on the right of midline appearing coarse in echotexture with internal vascularity and absent native thyroid gland. Ectopic thyroid tissue lateral to midline associated with thyroglossal tract remnant and absence of orthotopic thyroid tissue is known to be very rare.

Key words: Ectopic thyroid, Absent orthotopic thyroid tissue, Technetium pertechnetate scan.

Iran J Nucl Med 2012;20(1):42-44

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INTRODUCTION

The incidence of ectopic thyroid gland is approximately 1 per 100,000 persons as per Mayo Clinic records [1]. Among all ectopic locations, laterally placed ectopic thyroid tissue with a normally located thyroid gland is reportedly a rare condition [2]. Even rarer is an ectopic thyroid lateral to midline with associated thyroglossal tract remnant and absent orthotopic thyroid tissue like the one being reported [3].

CASE REPORT

Our patient is a 17 years old, Indian male who presented with swelling in right lateral part of neck since 7 yrs with gradual increase in size. There is no family history of thyroid disease. He was referred to our department for a $^{99m}TcO_4^-$ thyroid scan to evaluate the same. On physical examination, the neck swelling was 3x3 cm in size situated in right lateral aspect of the neck with movement on deglutition and protrusion of tongue. It was soft in consistency with ill-defined margins and visible lower border. $^{99m}TcO_4^-$ SPECT/CT scan showed uptake to be corresponding to the laterally placed soft tissue structure right of midline and another focus of uptake to be corresponding to the midline anterior high cervical region in line with thyroglossal tract (Figs.1a, 1b and 3). There was no $^{99m}TcO_4^-$ uptake in the normal anatomical thyroid bed region .An USG neck done subsequently showed absence of native thyroid gland with a soft tissue structure measuring 38 x 15 x 11 mm in the right side of midline (Fig 2a) corresponding to the findings on $^{99m}T\ CO_4^-$ scan (Fig 1a and 3). It appears coarse in echotexture with internal vascularity (Fig. 2b).

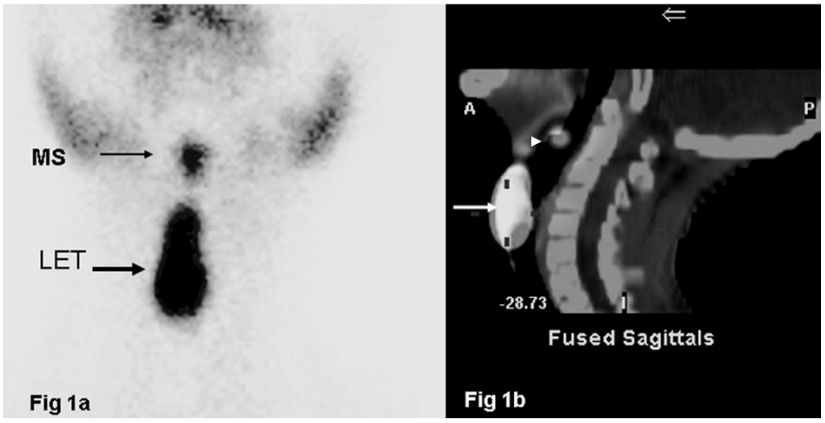

Fig 1a. ^{99m}Technetium Pertechnetate ($^{99m}TcO_4^-$) thyroid scan showing tracer uptake in the laterally placed linear ectopic thyroid (LET) along with focal functioning thyroid tissue in lingual region(MS-midline swelling), also shows absence of thyroid gland in its normal anatomical site; **Fig 1b.** Sagittal SPECT CT images showing the uptake of $^{99m}Tc\ O_4^-$ corresponding to the laterally placed soft tissue (arrow) and focal functioning thyroid tissue in lingual region (arrow head). Non contrast CT (non-diagnostic localizing CT with tube current of 2 mA) image showing the hyperdense thyroid tissue (due to native iodine concentration in thyroid tissue) to be corresponding to the $^{99m}TcO_4^-$ uptake.

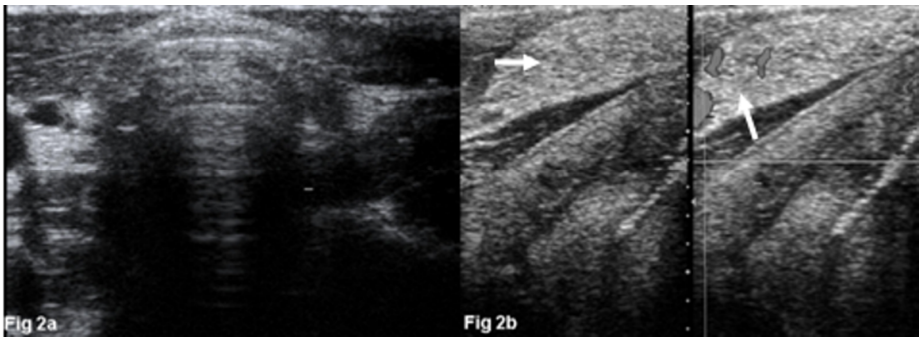

Fig 2a. USG neck showing absence of thyroid gland in the lower anterior neck; **Fig 2b.** USG neck showing a soft tissue structure measuring 38 x 15 x 11 mm on right of midline appearing coarse in echotexture with internal vascularity (arrow).

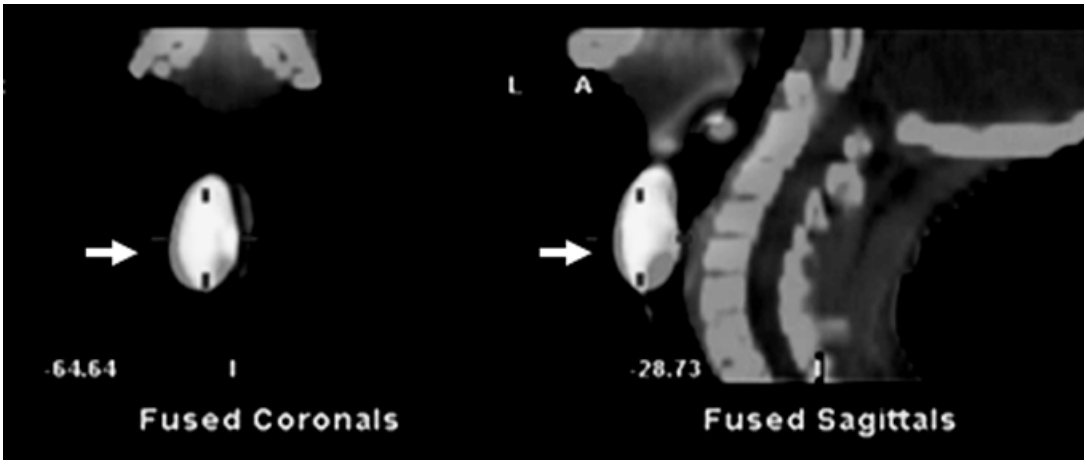

Fig 3. $^{99m}TcO_4^-$ SPECT CT coronal and sagittal sections showing $^{99m}TcO_4^-$ uptake in linear soft tissue on the right side of the midline (arrows).

DISCUSSION

Among all the congenital abnormalities, thyroid anomalies are known to be one of the most uncommon [4]. Possible sites of ectopic localization are along the course of thyroglossal duct or around the two lobes of the gland, anterior tongue, larynx, esophagus, mediastinum, diaphragm and, rarely, neck branchial cyst [1]. Ectopic thyroid tissues in trachea [5], heart [6] and gallbladder wall [7] have also been reported. Embryologically, the thyroid gland develops from 2 anlages: a large median endodermal anlage and two lateral anlages. The median anlage produces most of the thyroid parenchyma, while the lateral anlage is derived from the fourth pharyngeal pouch and contributes 1% to 30% of the thyroid weight [8]. In rare cases, failure of the lateral anlage to fuse with the median anlage can result in lateral ectopic thyroid gland. Commonly, failure in the descent of the median anlage results in a lingual thyroid gland [9]. Ectopic thyroid tissue found in the midline as also seen in our case is quite common. However, very rarely ectopic thyroid tissue in lateral part of neck is also seen [1, 10, 11]. This case is a unique combination of laterally placed ectopic thyroid with a midline ectopic thyroid tissue and absent native thyroid gland. However, a hypertrophied ectopic thyroid tissue from the median anlage along the course of the thyroglossal duct with some displacement to the right side is also a possibility and cannot be ruled out.

This case highlights that though ectopia of the thyroid gland is usually found along the course of the thyroglossal duct, we should be aware of the other possible sites of ectopia and also that although lateral ectopic thyroid gland with no orthotopic thyroid tissue is extremely rare, it may be encountered.

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