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Letter to the Editor

Ectopic thyroid tissue with normally located thyroid gland

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Dear Editor

In this article, we wanted to share a rare case with you. Ectopic thyroid tissue, which is a developmental anomaly of thyroid development, is usually a rare asymptomatic congenital anomaly. The embryological development of the thyroid gland begins as an epithelial proliferation at the foramen caecum, located medially at the junction of the anterior two-thirds and posterior one-third of the tongue, at approximately Day 24 of fetal life (1,2). Thyroid tissue develops in embryonal life and then descending towards its normal anatomic location moving anterior to the larynx and hyoid bone (and sometimes posteriorly) and finally to the front of the trachea. A number of anomalies may occur during this migration and during the development of the thyroid gland.

Developmental abnormalities may be partial or complete. In partial developmental anomalies, there is agenesis of the isthmus or one of the lateral lobes. Complete agenesis of thyroid gland can also occur. Other abnormalities of the thyroid gland are the anomalies related with the descent of the thyroid from the foramen caecum and partial or full persistence of the thyroglossal duct (3,4).

Thyroid tissue reaches its final location anterior to the trachea in the seventh week of fetal life (1,2). Ectopic thyroid tissue occurs as a result of incomplete migration of the thyroid gland and can be located anywhere between the base of the tongue and trachea. Ectopic thyroid tissue is seen mostly in the midline cervical region (90% of cases) (5). Its prevalence is approximately 1 in 100,000 to 300,000 (1). In this case report, we present a patient with suprahyoid ectopic thyroid tissue in the setting of normal thyroid.

A 40-year-old female presents to a tertiary care health center with a neck mass which has been present since childhood and has been enlarging in the past 3 months. She was admitted for management of neck swelling and dysphagia. On physical examination, a painless mass measuring 1.5 cm by 2 cm of the left lateral neck, anterior to corpus of hyoid bone is noted to be mobile with swallowing and protrusion of the tongue.

Thyroid tissue could not be palpated on physical examination. The mass was well-circumscribed, mobile and soft. The patient was presumed to have a thyroglossal cyst and ultrasonography (USG) and Doppler ultrasound were performed to confirm the diagnosis. Neck ultrasonography revealed an anechoic appearance with a 10 mm by 20 mm mass anterior to the corpus of the hyoid bone. Multiple isodense echoic signals appeared around the cyst within thyroid tissue. On USG, ectopic thyroid tissue with normal thyroid anatomy was reported in the suprahyoid region.

Both lobes of the thyroid were similar in size .On color Doppler ultrasound examination, it was reported that vascularity of this region was very obvious and equivalent to thyroid tissue. Thyroid scintigraphy was performed for differential diagnosis of the thyroglossal cyst. Thyroid scintigraphy with Tc-99m pertechnetate revealed a normal thyroid gland and an amorphous, intense radioactive uptake in the left lateral region of the suprahyoid region. The left suprahyoid region has relatively low and heterogeneous uptake compared to normal thyroid tissue suggesting ectopic thyroid tissue (Figure 1-2).

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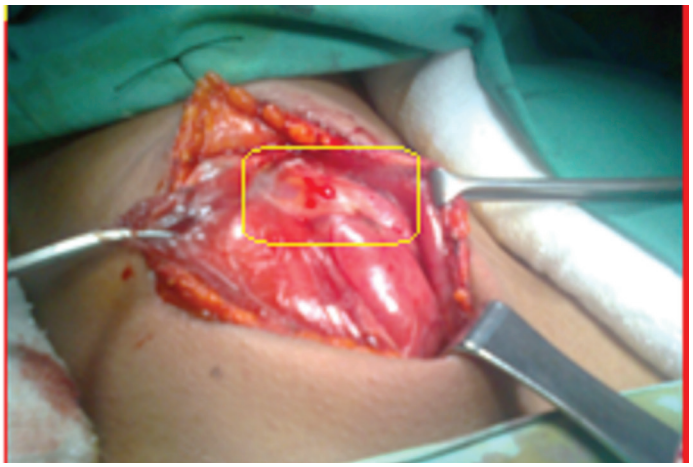

Figure 1. Ectopic thyroid tissue in the neck is seen with normal thyroid gland during the operation

Figure 2. Preoperative scintigraphy appearance Although there was activity of the normal thyroid on scintigraphy examination, increased activity was observed in a distinct, non-contiguous location which is compatible with ectopic thyroid tissue.

The patient's preoperative thyroid hormones and biochemical parameters were normal. Because of globus sensation and poor cosmesis, the patient elected to remove the mass. Ectopic thyroid tissue was dissected from the surrounding tissues and completely excised under general anesthesia. There were no postoperative complications and pathology specimen was reported as normal thyroid tissue without evidence of malignancy.

Thyroid gland is the first endocrine gland to develop during the embryonic period (6). The embryological development of the thyroid gland begins at the foramen caecum, located medially at the junction of the anterior two-thirds and posterior one-third of the tongue. During embryological development, the thyroid tissue descends through the thyroglossal duct to the normal pretracheal position (7). The thyroid gland develops from endodermal diverticulum which embriyologically presents between the first and second pharyngeal pouches. The diverticulum opens through the foramen cecum at the root of the tongue. Ectopic thyroid tissue develops as a result of migratory halt from the foramen cecum to the normal neck position until the seventh week of embryological life (8).

Any abnormality during embryonic development and migration of thyroid gland can result in ectopic thyroid tissue (ETT). ETT is a rare thyroid pathology and can be seen in any location along the midline of neck from the root of tongue to the anterior mediastinum (9,10). Its prevalence is approximately 1 in 100,000 and 300,000. In patients with thyroid disease, the prevalence can be as high as 1 in 4000 to 8000 (1). It is more common in women and usually is asymptomatic. Ectopic thyroid tissue may become symptomatic if thyroid stimulating hormone (TSH) becomes elevated or there is hyperplasia of thyroid tissue particularly during puberty and pregnancy (9). Only in 70 % of cases, ETT includes thyroid tissue(10).

ETT is more prevalent in women, as much as seven times more common compared to men (9,10). Although ETT is a rare and benign congenital anomaly, it can lead to serious problems due to its location. Thyroid scintigraphy is a specific and sensitive method for diagnosis of ETT. Although medical treatment can be used to reduce disease burden, like many other authors, we believe that surgical treatment is a more practical and accurate method Asymptomatic ETT can be excised only if there is functional thyroid tissue present. Therefore, clinicians should be diligent in preoperative planning. Diagnosis of ETT is important to protect the patient from unnecessary surgery and for early diagnosis of malignancy which can develop from ectopic thyroid tissue. In this patient, pathological examination of the lesion confirmed that the lesion was ectopic thyroid tissue that had widespread degeneration without malignant transformation. Lymphadenopathy, adenoma, fibroma, thyroglossal duct cyst, granular cell myeloblastom, mass lesions such as squamous cell carcinoma should be considered in the differential diagnosis. Complete clinical, radiological and laboratory investigation in our patient provided convincing evidence that ectopic thyroid tissue can occur in the presence of normal thyroid tissue.

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