

## Accessory Thyroid Gland In A Patient with Hypothyroid State

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### Abstract:

*A 40 yrs female muslim housewife attended Endocrinology department of Dhaka Medical College Hospital with the complaints of swelling in front of neck, alone with dryness of the skin, cold intolerance, constipation and menorrhagia. Physical examination and laboratory investigations substantiated the diagnosis of accessory thyroid gland in front of neck above the isthmus of the thyroid gland. RAIU and scanning showed normally present thyroid gland with accessory thyroidal nodular swelling in the midline in the upper part of front of neck .USG of the thyroid gland showed normal size of thyroid gland with coarse echo texture. A hypo echoic solid thyroid nodule was also seen above the isthmus of the thyroid gland, measuring about 2.4 cm 2.2cm. Thyroid function tests revealed hypothyroidism. She is on thyroid hormone replacement therapy. This rare presentation of accessory thyroid gland with hypothyroid state led us to report the case.*

**Keywords:** Accessory thyroid gland, Hypothyroidism, Ectopic, Bangladesh

### Introduction:

The organogenesis of the thyroid gland in human is often disturbed leading to a variety of morphological variation of the gland, such as hypoplasia, ectopy, hemiagenesis and agenesis. Thyroid gland is the first endocrine gland to appear during the embryogenic period. It begins to develop about 24 days after fertilization, from a median endodermal thickening in the floor of the primitive pharynx between the first and second branchial arches, just caudal to future site of the medial tongue bud. This thickening soon forms a down growth known as thyroid diverticulum. As the embryo elongates and the tongue grows, the developing thyroid gland descends into the neck, passing ventral to the developing hyoid bone and the lateral cartilages. The developing thyroid gland is connected to the tongue by the thyroglossal duct. The opening of this duct in the tongue is called the foramen cecum. The thyroid diverticulum is first hollowed but soon becomes solid and divides. The right and left lobes are connected by isthmus that lies anterior to the second and third tracheal rings. By 7<sup>th</sup> wk the thyroid gland has usually reached its final site in the neck. By this time the thyroglossal duct has normally degenerated and disappeared. A pyramidal lobe is present in about 50% of cases and may be attached to hyoid bone by fibrous or muscular tissue. The pyramidal lobe represents a persistent portion of the inferior end of the thyroglossal duct. The small opening of the

thyroglossal duct persists as a small pit, the foramen cecum of the tongue. The lateral Anlage arises as a diverticulum from the fourth and fifth pharyngeal pouches and forms the para-follicular cells which produce calcitonin.<sup>1</sup>

Rarely the thyroid gland fails to descend, resulting in a lingual thyroid.<sup>2</sup> Accessory thyroid tissue may appear in the tongue or in the neck superior to the thyroid gland. Carotid body tumor sometimes may confuse with an accessory thyroid gland of the neck. Carotid body is a pinkish grey structure located within the adventitial layer of the posterior medial aspect of the common carotid bifurcation. Tumors arising from this body are called paragangliomas, because they arise from paraganglioma cells. No relation to the development of the thyroid gland is known.<sup>3</sup>

### Case report:

A female Muslim housewife of age 40 yrs, hailing from Madanpur, Chittagong road, Dhaka was referred to the Department of Endocrinology, Dhaka Medical College Hospital with the complaint of neck swelling. The swelling had been present and asymptomatic for years with no progression. Family history did not reveal any thyroid disorder in 1<sup>st</sup> degree relatives. She gave history of dryness of the skin, cold intolerance, constipation, menorrhagia and dysmenorrhoea. Clinically she was mildly anemic and non-icteric, and she had mild ankle edema. Body hair distribution

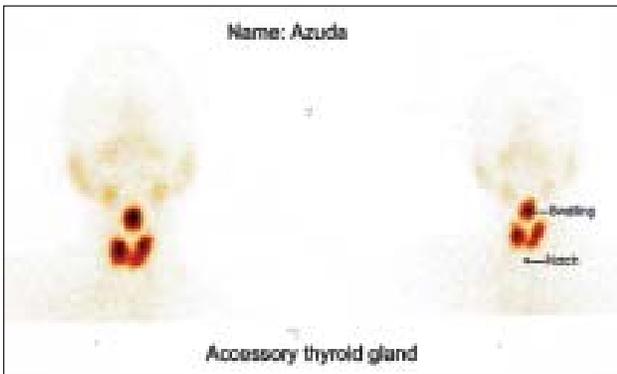
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was normal. There was no lymphadenopathy. Thyroid gland was normal in size and position. There was a small nodular swelling above the isthmus of the thyroid which was non tender but fixed to the underlying structures. The patient did not give any history of operation in the past. Her pulse rate was 80/min, blood pressure was 120/80 mm Hg, and skin was dry, pale and rough. System examinations revealed no other abnormalities.



**Fig.-1.** USG of thyroid gland showing a hypo echoic solid nodule just above the isthmus measuring about 2.9×2.2 cm.



**Fig.-2.** Thyroid Scan with 99m Tc showing extra thyroidal swelling above the thyroid gland.

#### Investigations showed:

Hb 65%, WBC 7000/cu mm with N-70%, L- 26%, E-4%, B – 0%. Blood sugar - fasting 5.0 mmol/L, and 2hr after 75gm glucose 7.2 mmol/L. S creatinine 0.7gm/dl and S. Urea 23mg/dl. Urine R/M/E – normal. CXR and ECG- normal. S electrolytes: Na- 141 mmol/L/l, K- 4mmol/L, Cl- 104 mmol and TCO<sub>2</sub>- 25 mmol/L. USG of whole abdomen – normal USG of thyroid gland – normal in size, course in echo texture. A hypo echoic solid nodule was seen just above the isthmus

measuring about 2.9×2.2 cm (Fig.1). Thyroid function test- S TT4 53.04 nmol/l (normal 55-173 nmol/L). S TT3 1.24 nmol/L (normal 1.32-3.75 nmol/L), S TSH 87.62 mU/L (normal 0.3-5.0 mU/L). FNAC of the nodular swelling – thyroid follicular cell with colloid material. Radioactive Iodine Uptake of Thyroid : 2 hr = 15% , 24 hr = 48%. Thyroid Scan with 99m Tc 2 mCi I/V - extra thyroidal swelling above the thyroid cartilage (Fig.-2).

#### Discussion:

Ectopic thyroid tissue is defined as thyroid tissue located other than anterolaterally to the second to fourth tracheal cartilages. Since 1869, Hickmann first reported lingual thyroid, and then several reports of ectopic thyroid tissue have been published.<sup>4</sup> The lingual location is most common, accounting for 90% of reported case.<sup>5,6</sup> Other rare sites of ectopic thyroid are mediastinum, esophagus, lung, heart, aorta and abdomen.<sup>7,11-14</sup> In 70% to 80% of cases ectopic thyroid tissue is the only functional thyroid tissue.<sup>4,15,16</sup> But in our case we did not find a proper functioning thyroid gland which is evidence clinically and biochemically. A submandibular ectopic thyroid tissue with a normally functioning thyroid gland in its proper location has been reported only once.<sup>19</sup> Sambola –Cabrer et al<sup>20</sup> first reported ectopic thyroid tissue in the sub mandibular location in combination with a normally located but atrophic thyroid gland. In 1988, Ruben-field et al reported ectopic thyroid tissue at the carotid bifurcation contrast to our case; they did not find a proper functioning thyroid gland in its normal position. Several theories have been postulated to explain the origin of the ectopic thyroid tissue<sup>17-20</sup>. Displacement during the course of embryonal development seems a logical explanation. Nicastrì et al.<sup>21</sup> reported that benign thyroid tissue may also metastasize to the cervical lymph nodes. Lastly we should follow up the case in a regular interval for future management including thyroid hormone replacement.

**Conflict of Interest:** None

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