

Redefining Anatomy in a Case of Midline Subhyoid Ectopic Thyroid

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ABSTRACT

Ectopic thyroid is an uncommon embryological aberration of the thyroid descent. Subhyoid median ectopic thyroid gland is a result of incomplete descent of the thyroid anlage and is characterized by a cosmetically unacceptable ovoid mass of thyroid tissue in the midline overlying the thyroid cartilage and thyrohyoid membrane. A normally placed thyroid gland is not detectable and in most cases all functioning thyroid tissue is located within the mass. Usually it is mistaken for a thyroglossal cyst and excised. Severe myxedema follows removal. Many cases have been reported in the literature, none of which was recognized prior to operation. All patients were operated upon for removal of a thyroglossal duct cyst. The diagnosis was missed at operation and in these cases severe myxedema was universal. The cause of the myxedema was not always immediately recognized. Therefore, many diagnostic tests including thyroid function test, ultrasound of the neck and thyroid scanning had been recommended in the preoperative evaluation of a thyroglossal cyst. Here, we present a case of ectopic thyroid mass which was the only thyroid tissue present in the neck. So division and repositioning of the thyroid mass thereby redefining the anatomy was done with good cosmetic result.

Keywords: Ectopic, Midline, Subhyoid, Thyroid, Surgical repositioning.

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CASE REPORT

A 14-year-old girl had noticed a mass in the anterior midline of the neck for 7 years. She had no pressure symptoms, and the mass had gradually increased in size over the years. She was first seen in the ENT clinic at Tumkur and was advised for a neck ultrasonography. Enlarged pyramidal lobe of thyroid was diagnosed on ultrasound. Then, the patient came to ENT clinic in AIMS where a 5.0 × 5.0 cm ovoid, soft, encapsulated mass was palpated overlying the thyrohyoid membrane in the midline (Fig. 1). It was freely movable in the horizontal plane but restricted in vertical motion. The thyroid gland could not be palpated in its normal position but the patient was clinically euthyroid with normal growth and development. However, the radioactive scintigram plainly revealed that all of the patient's functioning thyroid tissue was located within the midline mass. The ultrasound neck showed an ovoid mass in the midline just above the thyroid cartilage and both the thyroid

lobes were not visualized. Hence, a diagnosis of subhyoid midline ectopic thyroid was made and was prepared for surgical repositioning of the thyroid tissue.

A single collar incision was made and a solid mass of tissue identified. The mass was resembling normal thyroid tissue. No thyroid tissue could be found laterally (Fig. 2). The gland was split longitudinally (Fig. 3) and each half of the mass was then moved laterally into a tunnel created beneath the strap muscles without sacrificing the blood supply which appeared to enter predominantly from the inferolateral margins (Fig. 4). There were no complications



Fig. 1: Midline subhyoid thyroid

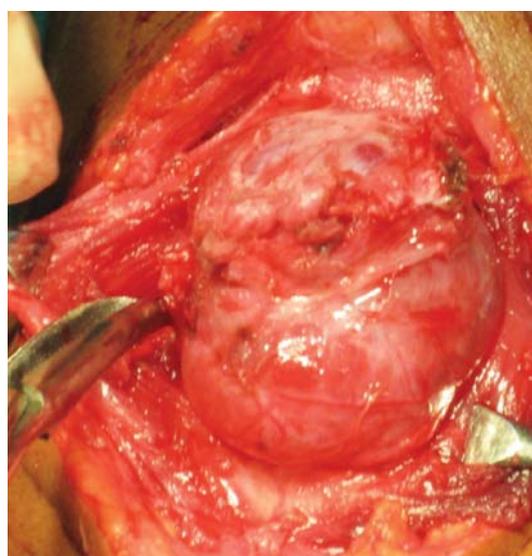


Fig. 2: Midline ectopic thyroid

and the patient has been well pleased with the cosmetic result (Fig. 5). Thyroid function tests were repeated at 1, 3 and 6 months postoperatively which were in normal limits

suggesting the normal functioning of the gland. Also ultrasound was repeated at 6 months postoperatively which suggested the presence of both neolobes with normal echotexture.

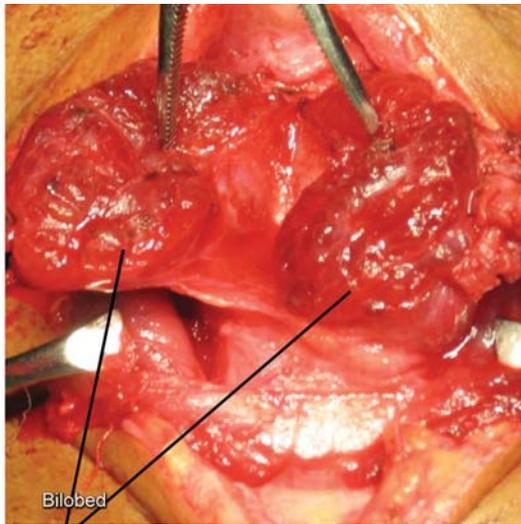


Fig. 3: Bisected longitudinally

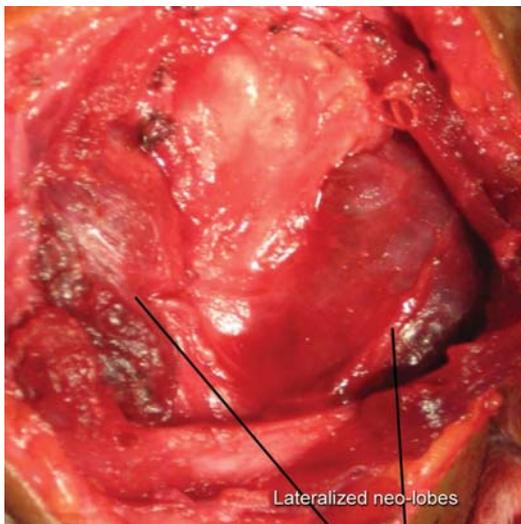


Fig. 4: Repositioning the lobes



Fig. 5: Postoperative neothyroid

DISCUSSION

Ectopic thyroid is an uncommon embryological aberration of the thyroid descent and characterized by the presence of thyroid tissue in a site other than its usual pretracheal region. It occurs along the path of descent of the developing thyroid primordium from the foramen caecum. Most commonly, the gland completely fails to descend and presents as a lingual thyroid and this is the only thyroid tissue in 70% of cases.¹ This is in contrast to a sublingual thyroid; in which case, there is incomplete descent of the gland where the final resting point may be high in the neck or just below the hyoid bone.² When the thyroid gland is located in its normal position in the lower neck, fragments of the thyroid tissue representing ectopic thyroid may still be found anywhere along its course.

More than 400 cases of lingual thyroid have been documented in the literature, but the reported cases of sublingual thyroid are substantially lower. Ectopic thyroid is subject to same diseases as the anatomically correctly positioned thyroid, such as nodular hyperplasia and rarely neoplastic degeneration.³ Asymptomatic mass lesion is the usual presentation of ectopic thyroid, but obstructive symptoms, hypothyroidism and very rarely hyperthyroidism have been documented.⁴

We believe that the preoperative recognition of such an anomaly is mandatory not only to avoid the mistaken diagnosis of thyroglossal duct cyst and thus render the patient myxedematous by removal of his only thyroid tissue, but also to assure the patient of a well planned, elective, cosmetic procedure. During examination the surgeon must make a definite decision as to whether a given mass is solid, either in part or in whole, and determine by palpation if a normal thyroid gland is present. If there is any doubt concerning either of these structures, a radioactive iodine scintigram should be done. Thyroid scintigraphy is the best method in identifying all sites of functioning thyroid tissue, but routine thyroid scan is not necessary.⁵

Having determined that the midline mass contains all of the patient's thyroid tissue, we believe a safe cosmetic procedure can be recommended to the patient if he so desires. We would agree with Gross and Haller that the gland should be split longitudinally in the midline and each half moved laterally to a normal position beneath the strap muscles.⁶

McCirr and Hutchison⁷ (1954) believe that minimal hypothyroidism is an essential feature of ectopic thyroid anomalies, and that the ectopic thyroid becomes prominent because of excessive stimulation by thyrotropic hormone. If the mass is not excised, they predict the future possibility of hyperplastic changes including nodular goiter and carcinoma.

We do recommend that follow-up be continuous and if any hyperplastic changes are detected, thyroid extract should be given in order to reduce thyrotropic stimulation.

SUMMARY

A subhyoid median ectopic thyroid gland is a rare anomaly which must be distinguished from a thyroglossal duct cyst either prior to or at the time of operation in order to avoid excision with subsequent myxedema. If a midline subhyoid mass is suspected of containing a solid component or if a normally placed thyroid cannot be palpated, a radioactive iodine scintigram should be done. Thus, if all of the patient's thyroid tissue is proven to be contained within the midline tumor, a safe cosmetic operation can be offered. The gland should be split longitudinally in the midline and each half moved laterally to its normal position beneath the strap muscles. Hypothyroidism has not been encountered following this plastic procedure and if future hyperplastic

changes should be encountered treatment with thyroid hormone is recommended.

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