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Case Report

A case of thyroid hemiagenesis with thyroiditis

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ABSTRACT

Thyroid hemiagenesis is a very rare congenital abnormality, in which one thyroid lobe fails to grow. Most of the patients are usually associated thyroid disease. The prevalence of thyroid hemiagenesis ranges between 0.05% and 0.2% within the literature. We hereby report a case of 29 years male with left lobe thyroid hemiagenesis with right lobe thyroiditis presented with a feature of hyperthyroidism. Thyroid hemiagenesis can be associated with hyper or hypothyroidism. In our case patient had a feature of hyperthyroidism with dearranged TFT. In our case we detected thyroid hemiagensis incidentally with the help of ultrasonography. Ultrasonography was the investigation that detected thyroid hemiagenesis. Ultrasonography is the most cost-effective means of diagnosing thyroid hemiagenesis. We further performed the thyroid scan to detect any hyperfunctioning thyroid gland or ectopic thyroid. Thyroid scan helped detect thyroiditis in the right thyroid lobe.

Keywords: Thyroid, Hemiagenesis, Thyroiditis

INTRODUCTION

Thyroid glands develop from the median diverticulum which is an endodermal thickening present on the floor of the pharynx. It grows caudally as bifurcating tubular ducts to make the lateral lobes and isthmus. Congenital thyroid anomalies may result from an abnormal gland descent, defective organogenesis, and incomplete genesis of a lobe with or without ectopic thyroid tissue.[1]

Thyroid hemiagenesis is a very rare congenital abnormality, in which one lobe of the thyroid fails to grow. Most of the patients are usually associated thyroid disease.[2] Hemiagenesis of the thyroid was first reported by Handsfield Jones in the year 1852.[3] Although most of the cases are euthyroid, thyroid hemiagenesis can be associated with hyper- or hypothyroidism. Euthyroid cases can be easily missed if they are not already evaluated for thyroid disorders.[4]

The prevalence of thyroid hemiagenesis ranges between 0.05% and 0.2% within the literature.[5,6]

CASE REPORT

Patient information

A 29 years male patient visited in out-patient ENT department in Karuna hospital, Kathmandu, Nepal with a complaint of weakness for 2-3 months associated with palpitation, loss of hair, unintentional weight loss of more than 4 kg within 3 months.

Clinical examination

On examination pulse rate was 97 per minute, tremor of the hand on extension, hand were warmth and moist, barely palpable left lobe of thyroid gland, eye signs were absent.

Diagnostic assessment

On ultrasonography: left lobe of the thyroid gland not visualized, right lobe measuring 33×26×20 mm, right thyroid gland and isthmus appear normal in size and

outline with homogenous parenchymal echotexture (Figure 1 and 2). Thyroid function test (TFT) was done and its report shown in Table 1. Anti-TPO was 14.8 u/ml. ESR was 10 mm/hr. 9 m Tc pertechnetate thyroid scintigraphy showed non-visualized left thyroid lobe and thyroiditis of right thyroid lobe.

Therapeutic intervention

As the patient was having a feature of hyperthyroidism we started our treatment with low dose prednisolone and low dose propranolol for 4 weeks. After 4 weeks there was improvement in his symptoms, pulse rate was 82 beats per minute, and his thyroid function test is shown in Table 2. Free T3 was 2.18 pg/ml. Free T4 was 1.08 ng/dl. TSH was 0.025 IU/ml.

Figure 1: Ultrasonography of thyroid gland.

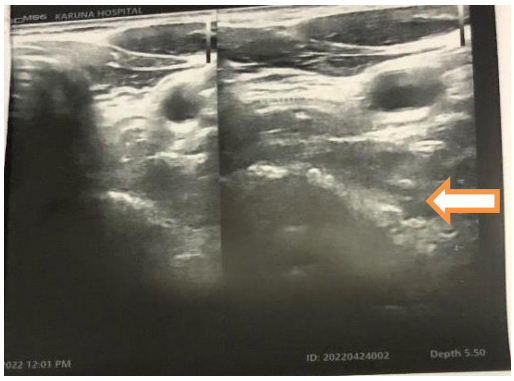

Figure 2: Ultrasonography of thyroid gland with absent left lobe.

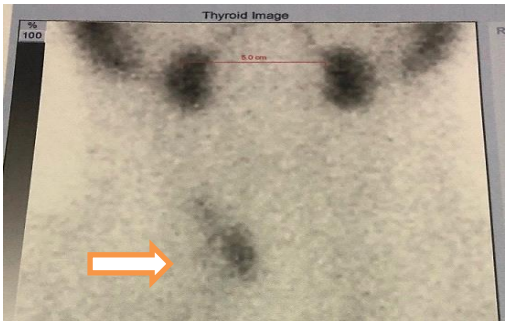

Figure 3: Ultrasonography of thyroid gland with absent left lobe.

Table 1: Thyroid function test.

Parameters	Values	Normal range
Free T3	8.65 pg/ml	2.0-4.4
Free T4	3.37 ng/dl	0.93-1.70
TSH (thyroid stimulating hormone)	<0.005 IU/ml	0.35-5.5

DISCUSSION

Thyroid hemiagenesis is a birth defect in which one thyroid lobe fails to develop with or without the absence of isthmus. Many times, it is an incidental finding. Coexisting thyroid disorders have been reported in the thyroid hemiagenesis including hyperthyroidism, hypothyroidism, multinodular goiter, chronic thyroiditis, adenocarcinoma, and papillary thyroid carcinoma in the normal thyroid lobe. The function of the thyroid is abnormal in 38-47% of the patients.[7]

Thyroid hemiagenesis is more common in females with a female-to-male ratio of 3:1.[8,9] Whereas we report a case of thyroid hemiagenesis in a male patient.

Thyroid hemiagenesis can be associated with hyper or hypothyroidism. In our case patient had features of hyperthyroidism with dearranged TFT. In our case, we detected thyroid hemiagensis incidentally with the help of ultrasonography. Ultrasonography was the investigation that detected thyroid hemiagenesis. Ultrasonography is the most cost-effective means of diagnosing thyroid hemiagenesis. We further performed the thyroid scan to detect any hyperfunctioning thyroid gland or ectopic thyroid. Thyroid scan helped detect thyroiditis in the right thyroid lobe.

CONCLUSION

As thyroid hemiagenesis is a rare case very few articles have been published. This case report will give an insight into the congenital anomaly of the thyroid and the need for routine screening in patients with features of hypo or hyperthyroidism.

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