

## Agensis of the left thyroid lobe (thyroid hemiagenesis): a case report

IGNAZIO SPARACIO

via Principe di Paternò 3, 90144 Palermo, Italy; e-mail: studio.sparacio@libero.it

### SUMMARY

Thyroid hemiagenesis is a rare anomaly defined by the congenital absence of one of the thyroid lobes. A 43 year old woman with clinical symptoms related to thyroid disease came to our service. A diagnostic thyroid ultrasonography (US) revealed the absence of left thyroid lobe. In the follow-ups, the patient still had hypothyroidism and was treated with medical therapy. In this paper, clinical, pathological, and radiologic data are reported.

### KEY WORDS

Thyroid diseases; hemiagenesis; anomalies; ultrasonography.

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### INTRODUCTION

Thyroid diseases are common (approximately in 1% of the female population) (FRANKLYN & BOELAERT, 2012). It presents itself with wide-ranging and often nonspecific symptoms - so it needs to be considered in many different symptomatologies and, once diagnosed, it needs to be regularly monitored to optimize the therapy.

Thyroid ultrasonography and thyroid function tests are among the most commonly requested laboratory examinations in both primary and secondary care (KOULOURI ET AL., 2013).

Thyroid hemiagenesis is a rare anomaly defined by the congenital absence of one of the thyroid lobes with an unknown etiology and an estimated prevalence rate of 0.02% (KARABAY ET AL., 2003).

Congenital thyroid anomalies may be caused either by abnormal descent of the gland or by incomplete genesis of a lobe. There may be a genetic component to the etiology as this pathology has been documented in monozygotic twins (CAKIR ET AL., 2009).

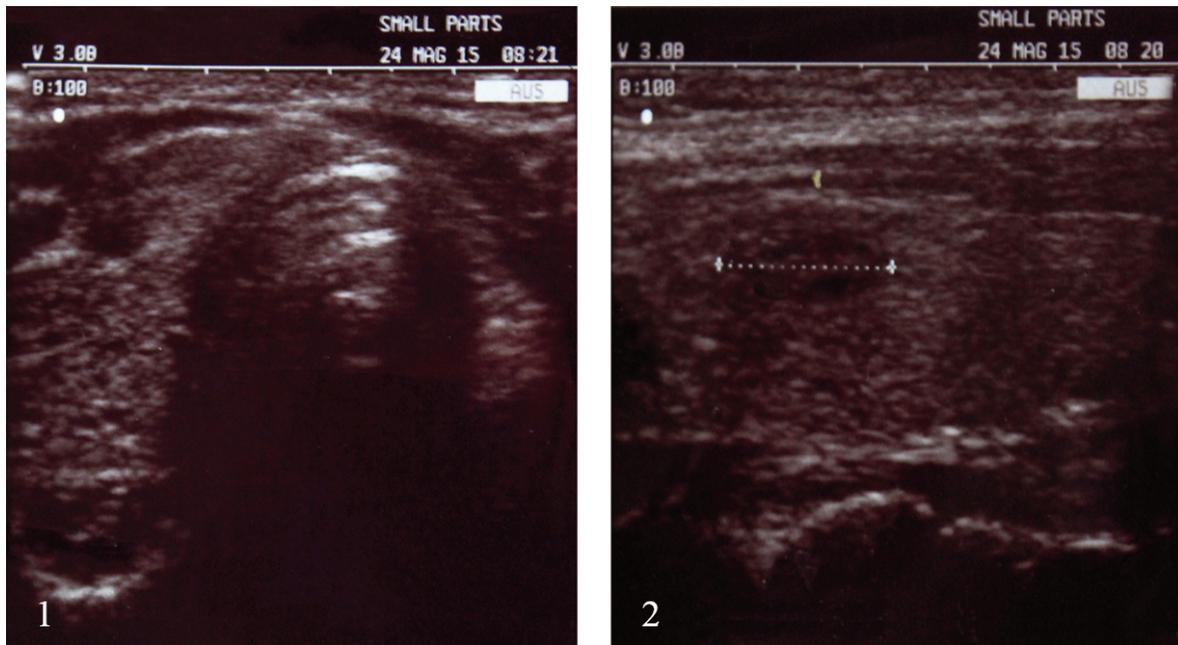
The first case of hemithyroid agenesis has been reported in 1866 (CAKIR ET AL., 2009). To date, approximately 300 cases have been reported worldwide in current literature (KARABAY ET AL., 2003). Below, we report a patient in which we incidentally found a left thyroid lobe agenesis.

Usually, hemithyroid agenesis is most commonly associated with hyperthyroidism, although, hypothyroidism has been reported. The pathologies that can develop in the remnant thyroid lobe include adenocarcinoma, adenoma, multinodular goiter, and chronic thyroiditis.

### CASE REPORT

A 43 year old woman with clinical symptoms related to thyroid disease came to our medical clinic. Medical examination were within normal limits. We reported that she was easily fatigued. Thyroid function tests showed an increase in autoantibodies (thyroid peroxidase antibodies, TPOAb = 250 UI/ml range 0–100) and a condition of hypothyroidism (high levels of TSH = 5.7 mIU/ml range 0.50–4.80). A diagnostic thyroid ultrasonography (US) revealed an absent left thyroid lobe and right thyroid lobe modestly increased in size to uneven homogeneity due to the presence of a benign nodule (the maximum diameter was 10 mm) (Figs. 1, 2).

In the follow-ups, the patient still had hypothyroidism and was treated with medical therapy (levothyroxine). She will need to do a thyroid ultrasound



Figures 1, 2. Ultrasonography of the case report: right thyroid lobe and absent left thyroid lobe (Fig. 1) and right thyroid lobe with a benign nodule, maximum diameter = 10 mm (Fig. 2).

each year and a thyroid function test every three months.

Hypothyroidism is a common condition of thyroid hormone deficiency and it is based on ranges of biochemical parameters. The most common symptoms are fatigue, lethargy, cold intolerance, weight gain, constipation, change in voice and dry skin, but clinical signs may differ with age and sex. Hypothyroidism can be asymptomatic. The standard treatment is thyroid hormone replacement therapy with levothyroxine.

## DISCUSSION AND CONCLUSIONS

Hemithyroid agenesis with rare congenital anomaly of the thyroid has been found to be three times more common in females than in males (KOCAKUSAK ET AL., 2004; PEÑA ET AL., 2011). In 80% of the cases, the left thyroid lobe is absent and about 50% of patients with left hemithyroid agenesis will also have an absent thyroid isthmus (BERGAMI ET AL., 1995). Coexisting thyroid disorders in the remaining lobe are common occurrence with hemigenesis. Disorders that have been reported in the remnant thyroid lobe include hyperthyroidism, hypothyroidism, multinodular goiter, chronic thyroiditis, adenocarcinoma, and papillary thyroid carcinoma (HUANG

ET AL., 2002; ÇAKIR ET AL., 2009). Hyperthyroidism is the most prevalent disorder associated with thyroid hemigenesis, and, as noted in our patient, hemithyroid agenesis can also be associated with a hypothyroid or euthyroid state as well (KOCAKUSAK ET AL., 2004; HUANG ET AL., 2002; ÇAKIR ET AL., 2009). Many different diagnostic methods have been helpful in diagnosing thyroid hemigenesis such as ultrasonography, magnetic resonance imaging (MRI), and thyroid scintigraphy using radioisotopes.

Ultrasonography can demonstrate, as in this case report, an absent lobe and is also helpful in the follow-ups of euthyroid patients (MIKOSCH ET AL., 1999).

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