

# Thyroid Hemiagenesis

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## ABSTRACT

**Introduction:** hemiagenesis thyroid is a malformation A rare congenital condition in which one of the thyroid lobes is abnormal. It doesn't develop and the cause is n't fully understood known

**Case Report:** due complaint of symptoms For nonspecific disorders, an investigation was carried out metabolic and hormonal, however, incidentally patient discovers variation anatomical congenital in thyroid after ultrasound evaluation, indicating hemiagenesis thyroid left with exams laboratory normal, revealing that the condition no suggested the triggering of diseases or neoplasms.

**Conclusion:** the presence of the anomaly stand up hypotheses which could be a factor trigger for others illnesses or will it have interference in patient 's long-term quality of life deadline, well such as variation needs to be known general by class doctor.

**Keywords:** Hemiagenesis Thyroid; Thyroid; Hemiagenesis; Variation Anatomical.

## Introduction

Thyroid hemiagenesis is a rare congenital anomaly defined by the absence of one lobe of the thyroid gland, with or without an isthmus and its corresponding occlusion in 0.05–0.2% of the population<sup>5</sup>. Several studies show that the left lobe is more prevalent in this condition than the right, with a ratio of 4:1 between the lobes. Furthermore, the condition is 3 times more common in females than in males, which may explain why thyroid diseases are more frequent in this sex<sup>1</sup>.

The gland thyroid derived from the diverticulum ventral endodermal layer of the first and second arches pharyngeal. The diverticulum descends from the base of the tongue up to the position pretracheal adult put middle of a median anterior pathway during the 4<sup>th</sup> and 7<sup>th</sup> week gestational. The cause of the malformation is unknown, although exist several explanations possible. Hemiagenesis it can be the result of a deficiency in descent or a defect in lobulation. Notably, the occurrence of hemiagenesis in twins monozygotic twins and members of the same family suggests a component genetic<sup>7</sup>. However, it is not a situation present in the report. The role of the factors humoral and environmental not quite clarified, but the age maternal advanced he can increase the possibility of new mutations in genes that encode some transcription factors associates to the gland development thyroid<sup>8</sup>.

Reports suggest that the deformity It could be more recurring in regions endemic for hypothyroidism<sup>2</sup>, where presumably occurs one stimulation chronic gland by TSH<sup>4</sup>. A thyroid developmental abnormality

tends to be discovered incidentally during cervical region imaging exams<sup>3</sup>, thus like the present report describes this finding in a way unexpected.

## Case Report

A 45-year-old white female patient, overweight, denied taking any continuous medication, was diagnosed with left thyroid hemiagenesis after routine examinations. She presented with nonspecific symptoms such as fatigue, weight gain, hair loss, and muscle pain, but no goiter was found on physical examination and she denied a family history of significant pathologies. To investigate metabolic and hormonal disorders, she underwent laboratory tests and a thyroid ultrasound (USG) in 2019. Thyroid hormone levels were within the reference range: free T4 0.86 ng / dL, total T3 0.91 ng / mL, and TSH 2.86 mIU /L, ruling out the initial suspicion of disease. hormonal, such as Hyperthyroidism and hypothyroidism . Thyroid ultrasound(USG)isalso used found right lobe measuring 4.2 x 1.3 x 1.6 cm and isthmus 0.3 cm, both with regular contours, dimensions normal, parenchyma texture preserved, without injuries Apparent dimensions and total volume 4.5 ml. However, absence of the left lobe was revealed. presenting one variation anatomical congenital ( Figure 1).

The tests were repeated in 2026, with thyroid hormone levels remaining within the normal range: free T4 at 0.96 ng / dL, total T3 at 0.93 ng / mL, and TSH at 3.78 mIU /L, once again ruling out the possibility of hormonal changes during that period. An ultrasound performed in the same year showed an increase in

the dimensions of the right lobe, measuring 4.8 x 1.5 x 3.4 cm, while the isthmus remained the same size at 0.3 cm. The left lobe was not apparent, and the total volume was 13.1 ml, a volume value within

the normal range and not considered a goiter. After medical evaluation, other pathologies were ruled out, and lifestyle changes were recommended to improve symptoms.

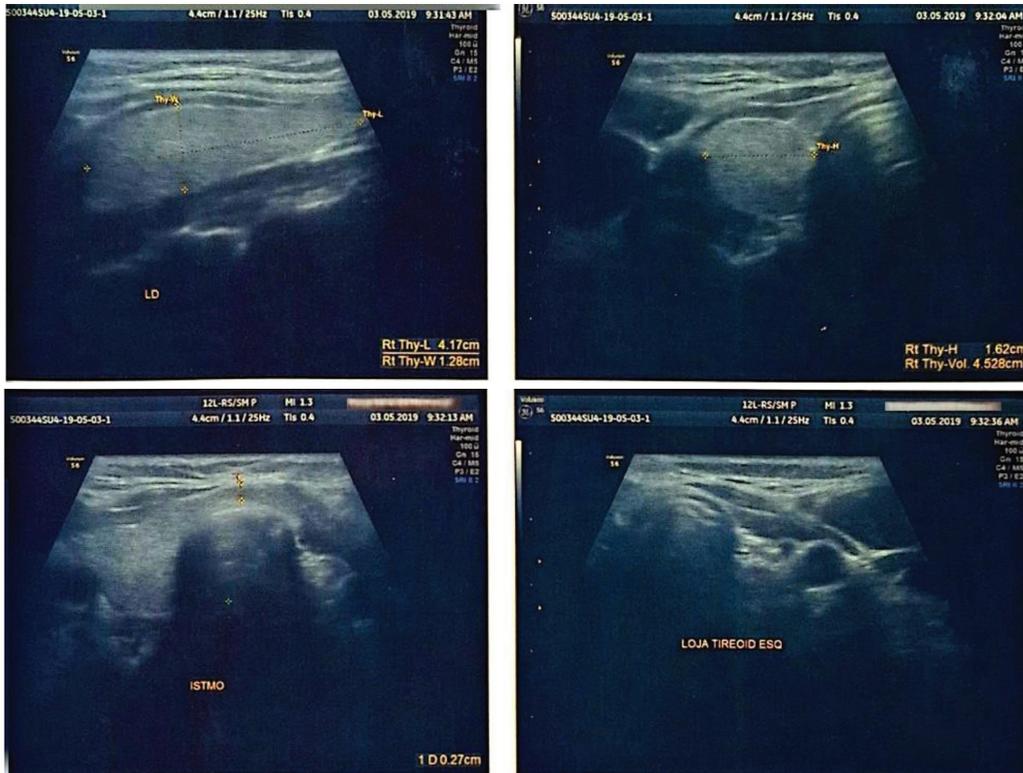


Figure 1. Patient's thyroid ultrasound in 2019.

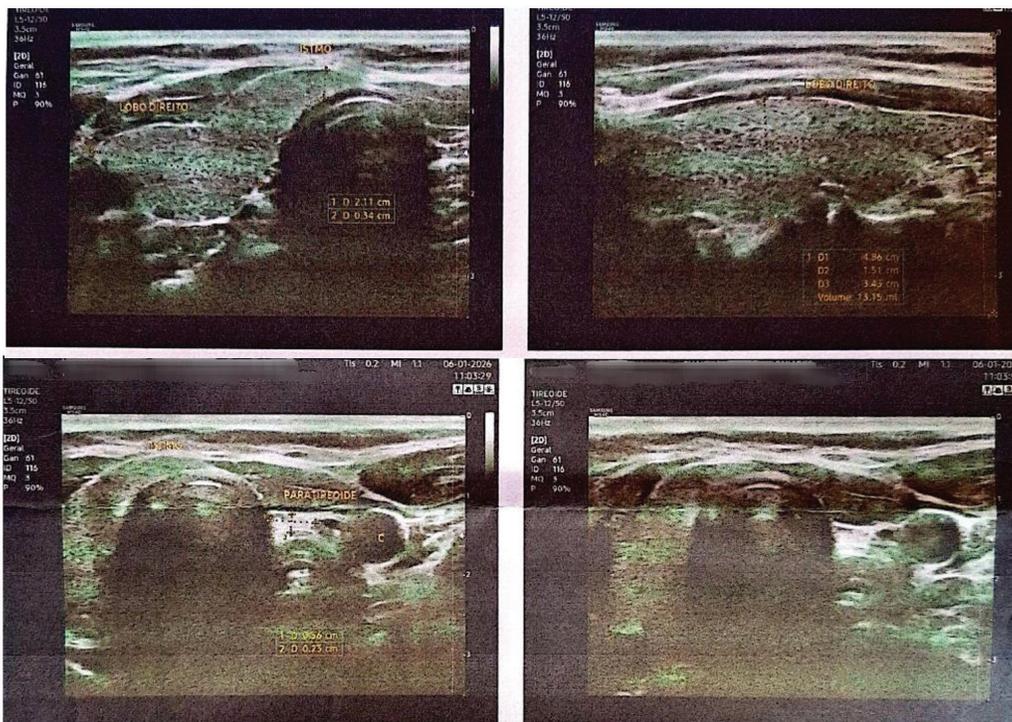


Figure 2. Patient's thyroid ultrasound in 2026.

## Discussion

Most patients do not present symptoms pathognomonic and the anomaly is discovered incidentally during exams or surgeries and generally this associated with the function Normal thyroid function, but can manifest as hypothyroidism in some reports<sup>2</sup>. Exactly as in the case, the first The suspected illness for the patient was diseases hormonal with symptoms Light. Like a remnant wolf. It is generally capable of sufficient hormone synthesis and secretion to maintain euthyroidism clinical the disease It rarely manifests with hypothyroidism<sup>3</sup>.

Goiter is described such as an increase in thyroid volume, with prevalence global of approximately 15% in population in In general, goiter is a major risk factor, with iodine deficiency being the primary cause. In adults, goiter is usually... defined put reference limits specific to each sex, > 18 mL in women and > 25 mL in men<sup>6</sup>, being Thus, despite the patient in the case having obtained The increase in total volume after 7 years does not qualify in that situation.

Since most patients are asymptomatic, no they exist recommendations Specific to the treatment. Thyroid ultrasound and scintigraphy with technetium or iodine they are useful in diagnosis<sup>2</sup>, in this way, the It is important to monitor the patient's progress in order to prevent... futures injuries what may emerge, but in the current not at the moment there is protocol of measures medications or Surgical interventions

are not indicated for this condition. The relevance of the study stems from the rarity of this clinical situation, raising hypotheses about triggering factors that are not fully explained and whether there will be interference with the patient's quality of life in the long term, demonstrating the importance of conducting in-depth studies for appropriate clinical application.

## Conclusion

The usefulness and popularity of thyroid ultrasound. They grew to the point of becoming almost a gold standard for hemiogenesis thyroid, due to its wide availability, character no invasive and low cost<sup>3</sup>, which he can to help new statistics and prevention of future diseases. A importance of that found in context anatomical and clinical impact directly in the knowledge medical, in which radiologists They need to have a look more attentive in the interpretations of imaging exams for identification of the deformity and essentially you surgeons They must have experience in cases of variations anatomical procedures to perform Precise procedures are crucial identifying the anomaly to understand the relationship with possible pathologies associated what they can impact on management clinical and decision therapeutic. An increase in data collection is expected in area scientific understanding better understanding the causes and therapies suitable for variation congenital.

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