

## A Comprehensive Guide to Managing Voluminous Goiters: A Case Study and Expert Recommendations

Saad SLAIKI\*, Jihad JAMOR

Visceral surgery department, CHU Hassan II, Morocco, Fes

\*Corresponding author: SAAD SLAIKI, visceral surgery department, CHU Hassan II, Morocco, Fes. Email: saad.slaiki@hotmail.com

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### Abstract

Goiters are a common thyroid disorder that can cause significant morbidity if left untreated. While most goiters are benign and asymptomatic, a voluminous goiter can cause compression symptoms such as dyspnea and dysphagia, which require prompt evaluation and management. In this case report, we describe a 62-year-old female patient who presented with a voluminous goiter and underwent a total thyroidectomy. The histopathological examination confirmed the diagnosis of multinodular goiter, and the postoperative course was uneventful. This case report highlights the importance of timely evaluation and management of a voluminous goiter and provides insights into the diagnosis, treatment, and postoperative course of this condition.

**Keywords:** voluminous, goiters, recommendations.

### Introduction

Goiters are a common thyroid disorder characterized by an enlargement of the thyroid gland. While goiters are usually asymptomatic, a voluminous goiter can cause compression symptoms, such as dyspnea, dysphagia, and hoarseness. Voluminous goiters can also lead to hormonal abnormalities, such as hyperthyroidism or hypothyroidism, and increase the risk of thyroid cancer (1,2). Through a case report and review of literature, we aim to highlight the importance of early diagnosis and management of voluminous goiters to prevent potential complications and improve the quality of life for affected patients.

### Case presentation

we present the case of a 62-year-old female patient who was diagnosed with a voluminous goiter. The patient reported a 3-year history of a progressively enlarging neck mass, associated with dyspnea and dysphagia. On examination, a firm, non-tender, and mobile thyroid mass was palpable, extending from the thyroid notch to the sternal notch (figure 1).



**Figure 1:** Voluminous goiter.

The thyroid function tests were normal, and the ultrasound revealed a heterogeneous thyroid mass with multiple nodules. The patient underwent a total thyroidectomy (figure 2), and the histopathological examination confirmed the diagnosis of multinodular goiter. The postoperative course was uneventful, and the patient reported a significant improvement in her symptoms.



**Figure 2:** Resected specimen.

### Discussion

Goiters are a common thyroid disorder characterized by an enlargement of the thyroid gland. While most goiters are benign and asymptomatic, a voluminous goiter can lead to significant morbidity and mortality if left untreated (1,2).

In our case, the patient reported progressive neck swelling associated with dyspnea and dysphagia, which are typical symptoms of a voluminous goiter (3,4). The ultrasound revealed a heterogeneous thyroid mass with multiple nodules, which is consistent with the diagnosis of multinodular goiter. The treatment options for multinodular goiter include observation, surgery, and radioiodine therapy, depending on the severity of symptoms and the risk of complications (5).

In our case, the patient underwent a total thyroidectomy, which is the preferred treatment option for voluminous goiters that cause compression symptoms, cosmetic concerns, or hormonal abnormalities (6). The histopathological examination confirmed the diagnosis of multinodular goiter, and the postoperative course was uneventful. The patient reported a significant improvement in her symptoms and was advised to follow up with regular thyroid function tests and neck ultrasound to monitor for potential recurrence or complications.

The management of voluminous goiters is complex and requires a multidisciplinary approach involving endocrinologists, radiologists, and surgeons (5). The American Thyroid Association and other expert groups have issued guidelines for the diagnosis and management of thyroid nodules and differentiated thyroid cancer, which provide evidence-based recommendations for the evaluation and treatment of voluminous goiters (3,6).

The initial evaluation of a patient with a voluminous goiter should include a detailed medical history, physical examination, and laboratory tests, including thyroid function tests, thyroid autoantibodies, and fine-needle aspiration biopsy (FNAB) (1,6). Imaging studies, such as ultrasound and computed tomography (CT) scan, can provide useful information on the size, location, and

characteristics of the goiter and help guide treatment decisions.

Observation is a reasonable option for patients with small, asymptomatic goiters and no evidence of thyroid dysfunction or cancer. However, close monitoring with regular thyroid function tests and imaging studies is necessary to detect any changes in the size or characteristics of the goiter (1,6).

Radioiodine therapy is a non-invasive option that involves the administration of radioactive iodine to destroy the overactive thyroid tissue and reduce the size of the goiter. This treatment is typically reserved for patients with hyperthyroidism or autonomously functioning nodules (5).

Surgery is the preferred treatment option for voluminous goiters that cause compression symptoms, cosmetic concerns, or hormonal abnormalities. Total thyroidectomy, which involves the removal of the entire thyroid gland, is usually recommended for patients with multinodular goiters, while lobectomy or hemithyroidectomy may be sufficient for patients with solitary nodules (1,5,6).

Potential complications of surgery include bleeding, infection, injury to the recurrent laryngeal nerve, and hypoparathyroidism, which can cause low calcium levels in the blood. These complications can be minimized by careful preoperative evaluation, surgical planning, and experienced surgical techniques (1,7).

### Conclusion

A voluminous goiter can cause significant morbidity and should be promptly evaluated and managed to prevent potential complications. The treatment options for voluminous goiters depend on the underlying etiology, the severity of symptoms, and the risk of complications. Surgery is the preferred treatment option for voluminous goiters that cause compression symptoms, cosmetic concerns, or hormonal abnormalities, but the choice of treatment should be individualized based on the patient's clinical and radiological characteristics and preferences.

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