

## Emergency Thyroidectomy Due to Obstruction of the Trachea- A Case Report

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### Abstract

### Case Report

We report a case of a 69-year-old man, who came to the emergency department with reported shortness of breath and syncope. A 69-year-old man came to the emergency department with reported shortness of breath and syncope. His condition was deteriorating, and intubation was considered necessary. The axial neck and chest revealed a giant thyroid goitre, not posterior, which exerts pressure on the trachea, and concomitant pneumonia. Following a surgical assessment, a thyroidectomy was considered necessary. Subtotal thyroidectomy is a safe treatment choice for possible recurrent laryngeal nerve injury, in an emergency operation. Complete preoperative assessment of each case is necessary for a safer outcome. Thyroid function testing, imaging of the neck structures, suspicion and possible confirmation of the existence of anaplastic carcinoma, and neurostimulation, if possible, will determine the type of surgery, total thyroidectomy or superficial thyroidectomy.

**Keywords:** Giant goiter; Laryngotracheal compression; Respiratory failure, Thyroidectomy.

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## INTRODUCTION

A non-toxic goitre is diffuse or nodular swelling of the thyroid gland that does not result from an inflammatory or neoplastic process and is not associated with abnormal thyroid function. Endemic goitre is defined as an enlargement of the thyroid gland that occurs in more than 10% of the population, and sporadic goitre is the result of environmental or genetic factors that do not affect the general population. The prevalence of goitre can be estimated based on the iodine intake of the population. Diagnosis will be made in a random check for another lesion in the neck area, or it will be after symptomatology due to external pressure of the trachea due to the size of the thyroid gland.

## CASE PRESENTATION

A 69-year-old man came to the emergency department with reported shortness of breath and syncope. He was examined in the cardiology department and was admitted to the cardiology unit for follow-up and further control. Blood tests showed hyperthyroidism. His condition was deteriorating, and

intubation was considered necessary. After all the necessary tests, the computed tomography scan of neck and chest revealed a giant thyroid goitre, not posterior, which exerts pressure on the trachea, and concomitant pneumonia, and this was the cause of the patient's difficulty breathing (Figure 1). Following a surgical assessment, a thyroidectomy was considered necessary. Carbimazole was given to control hyperthyroidism as much as possible. The patient was intubated and transported to the operating room. Stylistic thyroidectomy was performed, removing the right lobe of the thyroid that was exerting pressure and displacing the trachea. The patient was transported intubated back to the intensive care unit, from which he was discharged on the second postoperative day and returned to the clinic. The patient was discharged on the 5th postoperative day, without changes in his voice and his blood calcium levels remained normal. He did not show tracheomalacia. The histopathological report showed a thyroid lobe measuring 8.5 x 5 x 4 cm, with a histological picture of goiter and Graves' disease.



**Figure 1: Computed tomography of the neck showing the large goiter which causes displacement and stenosis of the trachea**

## DISCUSSION

Acute respiratory failure is a condition that occurs as a result of much pathology, whether it is the cause of the central nervous system, or the respiratory system, or systemic disease. Obstruction, injury, acute respiratory distress syndrome are the causes of acute respiratory failure.

In modern times, cases of goitre that cause acute airway obstruction are rare due to the evolution of medical science. The clinical picture of patients with multinodular goitre is variable and depends on the size, location and function of the gland. 25% of patients presenting with symptomatic goitre have hyperthyroidism [1]. It has been reported that multinodular goitre can rarely occur with acute airway obstruction requiring urgent intervention, occurring in 0.67% of cases [2, 3].

It is reported that up to 25-33% of patients with giant goitre have symptoms of upper airway obstruction and 10% of these patients need urgent airway intubation. It is also reported that the symptoms are usually not due to the size of the gland, but rather to the compression of vital structures at the level of the bony thoracic entrance [4].

Diagnosis is not tricky; other conditions that cause acute respiratory failure should be ruled out first. It is reported that standard posterior-anterior and lateral chest radiographs are considered the most valuable diagnostic tools in the study of intrathoracic bronchi, as these radiographs can provide valuable information about tracheal compression [5]. In emergencies, however, it is necessary to perform a computed tomography scan for more objective findings.

If it turns out that the respiratory failure is due to compression of the trachea by the thyroid gland, we must proceed with an emergency thyroidectomy. Evaluations of thyroid function and if there is time to correct any hyperparathyroidism. The procedure of thyroidectomy is the same as in selective thyroidectomy procedures. What we note is that for a safer operation, if we have a clear picture that one of the two lobes is the one that causes the compression of the trachea, we proceed to lobectomy without operating on the other lobe. Subtotal thyroidectomy is a safe treatment for possible recurrent laryngeal nerve injury, in an emergency operation without the use of intraoperative neuromonitoring, as well as postoperative hypothyroidism due to injury to the parathyroid glands. Another postoperative complication is tracheomalacia. It is not very common, with an incidence of 0.001% and 1.9% [6].

If the upper airway obstruction is due in no small goitre is an indication of thyroidectomy. Most of these cases have an intrathoracic or massive swelling of the thyroid gland. It is known that in emergency surgeries, especially in elderly patients, postoperative morbidity and mortality increases [7]. Thyroidectomy under selective conditions has low mortality rates and an acceptable morbidity rate. However, emergencies increase not only the mortality associated with comorbidities but also the rate of postoperative complications.

Removing the cause of the airway obstruction is the first priority. If the pressure comes from one lobe of the thyroid gland, it is advisable to have a stylistic thyroidectomy, the lobe that puts pressure on the trachea, to avoid complications from nerve and parathyroid gland injury. This is because the ability to use neurostimulation in an emergency operation is not

always possible in every hospital. However, if the whole gland has to be removed, then we proceed to a total thyroidectomy.

## CONCLUSION

Due to the low frequency of emergency thyroidectomy needs, the surgeon should be informed about these cases' management. Careful and complete preoperative assessment of each case is necessary for a safer outcome. Thyroid function testing, imaging of the neck structures, suspicion and possible confirmation of the existence of anaplastic cancer, and neurostimulation, if possible, will determine the type of surgery, total thyroidectomy or superficial thyroidectomy.

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