

# Multi Nodular Goiter with Acute Dyspnea: Is Tracheostomy Mandatory?

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## Abstract

A marked thyroid enlargement and upper airway compression is predominantly caused by benign diseases and can present as chronic dyspnea or as acute dyspnea requiring immediate intervention. We encountered a 48-year-old female, who presented to us with acute life threatening airway distress requiring emergency intubation. Emergency thyroidectomy was carried out to relieve tracheal compression. The patient was successfully extubated after surgery and did well without tracheostomy.

## INTRODUCTION

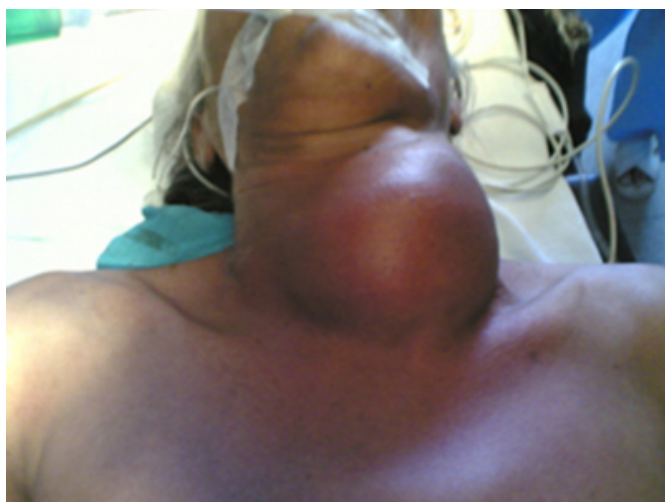
Patients with multinodular goiter or related thyroid disorders can rarely present with acute airway distress due to tracheal deviation or compression. Many of these patients are associated with weakness in the tracheal wall (tracheomalacia) making tracheostomy mandatory in the postoperative period.

## CASE SUMMARY

A 48-year-old female presented to the emergency department with severe dyspnea and marked cyanosis. On examination, she was having a huge thyroid swelling which was present for the last 20 years (Fig.1).

### Figure 1

Figure 1: Showing the intubated patient with huge thyroid swelling.



The swelling suddenly increased in size over the preceding 24 hours. Her cardiovascular and other systemic examination was normal. Immediate resuscitation was started and emergency intubation had to be carried out. Emergency thyroidectomy was done in elective operation theatre after optimizing the patient and assessment by anaesthetist. On exploration, the left lobe was markedly enlarged containing large amounts of colloid and altered blood (Fig.2).

### Figure 2

Figure 2: Operative photograph showing an enlarged left thyroid lobe.



After left lobectomy, the trachea was palpated for its elastic strength which appeared slightly abnormal. We decided to do simultaneous tracheostomy on table, but resisted on the advice of the anaesthetist who performed fiber-optic bronchoscopy and found the tracheal condition healthy, and

convinced us against tracheostomy. The patient was extubated about 15 minutes after completion of surgery and she recovered well in the immediate postoperative period and thereafter.

### **DISCUSSION**

A marked thyroid enlargement and upper airway compression is predominantly caused by benign disease; however, when there is associated recurrent laryngeal nerve dysfunction, carcinoma is more common. Goiters with progress of tracheal compression symptoms can present as chronic dyspnea without cyanosis or as acute dyspnea requiring immediate tracheal intubation. Tracheostomy is very rarely required preoperatively when emergency intubation is not possible because of significant narrowing of tracheal lumen.<sup>1</sup> In such patients preoperative investigations are kept to a minimum and emergency thyroidectomy is carried out but in the elective operation theatre where satisfactory operating room conditions and facilities for interpretation of the pathologic specimen are present.<sup>2</sup> Thyroidectomy alone is effective in relieving compressive symptoms in the majority of patients.

In large goiters, if the rigid strength of tracheal cartilages has been lost (tracheomalacia), tracheal collapse is the possible complication in the immediate postoperative period and tracheostomy is mandatory in these patients.<sup>3</sup> Other indications of tracheostomy after thyroid surgery are injury to bilateral recurrent laryngeal nerves, incompletely resected cancer, anticipated postoperative radiation treatment, etc.<sup>4</sup> A very wise aphorism about this is: "If a tracheostomy comes into one's mind then that is the time to do it." Tracheostomy facilitates control of airway, allows the airways to be suctioned by nursing staff and also prevents a difficult reintubation, should any problem occur in the immediate postoperative period. The need for elective tracheostomy to prevent airway complications was about one percent in one of the thyroid surgery series.<sup>4</sup>

Recent studies suggest an even lesser incidence of elective

tracheostomy after thyroid surgery, if patients are carefully monitored by expert anaesthetists in the immediate postoperative period.<sup>5</sup> The patient in consideration was a 40-year-old female with a huge goiter with respiratory compromise. On preoperative examination after thyroidectomy, the condition of the tracheal rings was not very good and we were in favour of doing an elective tracheostomy. But our anaesthetic teammate assessed the tracheal lumen and wall by fiber-optic bronchoscopy and decided against it. The patient was carefully monitored, and was successfully extubated after surgery and recovered well in the immediate postoperative period and thereafter.

The case is being reported to highlight the following points:

- An emergency elective thyroidectomy is indicated for patients with MNG at the first site of tracheal compression.
- The majority of such cases can be managed without tracheostomy if they are properly assessed and carefully monitored by an expert anaesthetist.

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