Short Research Communication

INTERNATIONAL JOURNAL OF CURRENT ADVANCED RESEARCH
ISSN: O: 2319-6475, ISSN: P: 2319-6505
Available Online at www.journalijcar.org
Volume 14; Issue 10; October 2025; Page No.543-545
DOI: http://dx.doi.org/10.24327/ijcar.2025.0545.0086

Subject Area : Surgery of Neck

COMPRESSIVE GOITERS REVEALED BY ACUTE DYSPNEA: EXPERIENCE FROM THE ENT AND CERVICO-FACIAL SURGERY DEPARTMENT OF MOULAY ISMAIL MILITARY HOSPITAL IN MEKNES (A SERIES OF FIVE CASES)

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ARTICLE INFO

Received 18th September,, 2025
Received in revised form 28th September, 2025
Accepted 16th October, 2025
Published online 28th October, 2025

Key words:

Compressive goiter; Acute dyspnea; Tracheal compression; Total thyroidectomy; ENT emergency; Retrosternalgoiter.

ABSTRACT

Introduction: Compressive goiter is a rare but life-threatening ENT emergency. Its presentation as acute dyspnea indicates advanced tracheal compression, requiring rapid and multidisciplinary diagnostic and therapeutic management. **Patients and Methods:** This was a retrospective descriptive study conducted over a 5-year period, including 5 patients managed for acute dyspnea revealing a large compressive goiter. Epidemiological, clinical, paraclinical, therapeutic, and outcome data were analyzed. **Results:** The mean age of the patients was 65 years, with a clear female predominance (80%). All had multinodular goiters evolving for over 20 years. Acute dyspnea was the constant reason for admission, classified as stage 3–4 on the ATS dyspnea scale. Cervico-thoracic computed tomography (CT) was the key examination, demonstrating severe tracheal compression with >70% reduction in lumen in all cases, and retrothyroidism in 3 cases. Emergency total thyroidectomy was performed in all patients, resulting in immediate tracheal release. Postoperative outcomes were uneventful in 4 cases; one case presented with transient hypocalcemia. Histopathological examination concluded benign goiter in all cases. **Conclusion:** Compressive goiter is a serious complication of neglected goiters. Its revelation by acute dyspnea constitutes a life-threatening emergency. Cervico-thoracic CT is the gold standard for assessing compression and guiding surgical strategy. Emergency total thyroidectomy remains the treatment of choice, ensuring effective and definitive decompression, with excellent outcomes when performed by an experienced team.

INTRODUCTION

Goiter, defined as an enlargement of the thyroid gland, is a common pathology, especially in iodine-deficient areas [1]. The majority of goiters are asymptomatic or paucisymptomatic. However, a significant minority may evolve into large compressive forms, leading to potentially severe mechanical complications on adjacent cervical and mediastinal structures, notably the trachea, esophagus, and major vessels [2].

Among these complications, dyspnea due to tracheal compression is the most formidable. It most often results from a long process of silent evolution, where compression develops gradually, allowing for some patient adaptation. Acute decompensation, manifesting as severe dyspnea, stridor, or respiratory distress, then constitutes a critical turning point and an absolute therapeutic emergency [3]. This situation is often the consequence of a long-standing, "historical," neglected, or unrecognized goiter.

The management of these compressive goiters in an emergency setting is complex and requires close collaboration between anesthesiologists-intensivists and ENT surgeons. Imaging, particularly computed tomography (CT), plays a crucial role in lesion assessment and surgical planning [4].

Through this retrospective study of five cases, we report our department's experience in managing compressive goiters revealed by acute dyspnea, emphasizing diagnostic and therapeutic aspects, as well as the particularities of surgery in an urgent context.

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Patients and Methods

This was a retrospective descriptive study conducted in the Department of ORL and Cervico-Facial Surgery of Moulay Ismail Military Hospital in Meknes over a 5-year period (January 2020 – September 2025). Five patients admitted as emergencies for acute dyspnea and managed for a large compressive goiter were included.

For each patient, the following data were collected from medical records:

- **Epidemiological data:** Age, sex, medical history.
- **Clinical data:** Reason for consultation, duration of goiter, compressive symptoms (dyspnea, dysphonia, dysphagia), thyroid-related signs, dyspnea classification (ATS scale).
- **Paraclinical data:**
  - Biology: TSH, fT4, calcemia.
  - Imaging: Cervical ultrasound, cervico-thoracic CT with contrast injection (measurement of tracheal narrowing, plunging character, vascular relationships).
  - Laryngo-tracheal endoscopy: Vocal cord mobility, appearance of the tracheal lumen.
- **Therapeutic data:** Time to management, type of intervention (total or subtotal thyroidectomy), intraoperative difficulties, associated procedures.
- **Outcome data:** Postoperative course, complications, histopathological results.
- Data analysis was descriptive, using means and percentages.

RESULTS

1. Epidemiological and Clinical Data

The mean age of the patients was 65 years (range: 58–72 years). There were 4 women (80%) and 1 man (20%). All patients had a known and neglected multinodular goiter, evolving for an average of 22 years. **Acute dyspnea** was the constant reason for admission, classified as stage 3 or 4 on the ATS scale. Inspiratory stridor was present in 3 patients. Other associated compressive signs were dysphagia (2 cases) and dysphonia (1 case). No signs of hyperthyroidism were noted.

Table 1. Patient Characteristics and Clinical Presentation (n=5)

Case	Age/Sex	Goiter Duration	Dyspnea (ATS Stage)	Associated Signs
1	72 / F	25 years	Stage 4	Stridor, Dysphagia
2	58 / F	20 years	Stage 3	–
3	65 / F	20 years	Stage 4	Stridor
4	68 / M	30 years	Stage 3	Dysphonia
5	62 / F	15 years	Stage 4	Stridor, Dysphagia

2. Paraclinical Data

- **Biology:** Thyroid function was euthyroid in all cases. Preoperativecalcemiawas normal.
- **Cervico-thoracic CT:** This examination was performed emergently on all patients. It revealed:
  - A large multinodular goiter in 100% of cases.
  - **Retrosternal extension** (posterior component developed in the retro-tracheal groove) in 3 cases (60%).
  - A **plunging goiter** (infraclavicular extension) in 2 cases (40%).
  - **Severe tracheal stenosis** with reduction of the sagittal diameter >70% in all cases.
  - No major vascular compression (deviation without compression of the carotid or jugular) was noted.
- **Endoscopy:** Showed significant reduction of the tracheal lumen in all patients. Vocal cord mobility was symmetric and normal in 4 cases; one case had a preoperative unilateral recurrent laryngeal nerve palsy.

3. Therapeutic and Intraoperative Data

All patients underwent **emergency total thyroidectomy** within 24 hours of admission, under general anesthesia. The surgical approach was a classic transverse cervicotomy. **Intra operative difficulties** noted were:

- Identification and preservation of the recurrent laryngeal nerves, made difficult by anatomical distortion and compression (one case of postoperative transient recurrent palsy).
- Hemostasis of the large and vascularized superior poles.
- Dissection of the retro-tracheal and plunging components, requiring careful lobe mobilization. No preventive tracheotomy was necessary.

4. Outcomes and Postoperative Course

Immediate postoperative course was marked by **immediate resolution of dyspnea and stridor** in all patients. Postoperative complications were:

- **Transient hypocalcemia** medically treated in 1 case (20%).
- Dysphonia due to transient recurrent palsy in 1 case, which resolved within 3 months. No cases of compressive hematoma or surgical site infection were reported. Definitive histopathological examination concluded **benign multinodular goiter** in all 5 cases.

Table 2. Summary of Management and Outcomes (n=5)

Case	Imaging (CT)	Intervention	Post-op Complications	Histopathology
1	Retrosternal, Stenosis>70%	Total Thyroidectomy	None	Benign-Goiter
2	Plunging, Stenosis>70%	Total Thyroidectomy	Transient-hypocalcemia	Benign-Goiter
3	Retrosternal, Stenosis>70%	Total Thyroidectomy	None	Benign-Goiter
4	Stenosis>70%	Total Thyroidectomy	Transient-dysphonia	Benign-Goiter
5	Retrosternal, Plunging	Total Thyroidectomy	None	Benign-Goiter

DISCUSSION

Although limited in number, our series perfectly illustrates the classic presentation of historical compressive goiter revealed by acute respiratory decompensation. The profile of our patients (elderly, female predominance, long-neglected goiter) is consistent with that described in the literature [5, 6].

The crucial point of management is **rapid lesion assessment**. Cervico-thoracic CT with contrast has established itself as the key, indispensable, and irreplaceable examination [4, 7]. It not only confirms the thyroid origin of the compression but, more importantly, details its characteristics: degree of tracheal stenosis, existence and importance of retrosternal extension (a major surgical difficulty factor), plunging nature, and relationships with vascular structures. These elements are essential for planning surgical strategy and anticipating difficulties.

Treatment is **exclusively surgical and urgent**. Total thyroidectomy is the reference procedure as it ensures complete and definitive decompression, eliminating the risk of recurrence on thyroid remnants [2, 8]. As in our series, surgery is often technically difficult due to anatomical distortion, hypervascularization, and the retro-tracheal component, requiring surgeon experience. Preservation of the recurrent laryngeal nerves and parathyroid glands is a priority, explaining the non-zero rate of transient complications (20% hypocalcemia in our series, compared to 1–10% described elsewhere for total thyroidectomy [9]).

Preventive intraoperative tracheotomy, once systematic in such cases, is now much less frequently performed [10]. Tracheal release after goiter excision most often allows immediate resumption of satisfactory ventilation, as was the case for all our patients. The decision for tracheotomy should be individualized in cases of a severely weakened trachea ("tracheomalacia").

Finally, the benign histopathological result in all our cases underscores that the urgency is dictated by volume and compression, not malignancy. However, the risk of follicular or papillary carcinoma within long-standing multinodular goiters is not negligible, reinforcing the indication for total excision [11].

Study Limitations: The retrospective nature and small sample size limit the scope of statistical conclusions. However, it reflects real clinical experience with a rare emergency.

CONCLUSION

Compressive goiter revealed by acute dyspnea is a serious complication of long-standing neglected goiters. Its management is a medico-surgical emergency based on rapid and precise CT assessment of tracheal compression. Total thyroidectomy, performed by an experienced team, is the treatment of choice as it ensures immediate and definitive tracheal decompression. Functional outcomes are excellent, with an acceptable complication rate. This pathology highlights the importance of regular follow-up and early treatment of large goiters, before the onset of severe compressive complications.

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How to cite this article:

Moussaoui Abdeljabbar et al. (2025). Compressive Goiters Revealed by Acute Dyspnea: Experience from the ENT and Cervico-Facial Surgery Department of Moulay Ismail Military Hospital in Meknes (A Series of Five Cases), International Journal of Current Advanced Research, 14(10), pp.543-545.

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