

# Management of a Long-Standing Huge Goiter During a Humanitarian Mission: A Case Report

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Review began 05/06/2023

Review ended 05/18/2023

Published 05/23/2023

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## Abstract

Giant goiters are still encountered in low-income countries where diagnosis and management remain challenging. The authors report a case of an endemic giant goiter, treated during a humanitarian mission. A 50-year-old female with no particular history presented during a humanitarian mission with a giant nontoxic goiter evolving for 30 years. She underwent a total thyroidectomy removing a 3 kg thyroid gland. The postoperative period was uneventful. Giant goiters are not exceptional in goiter-endemic areas. Diagnostic and surgical management do not require particular technology. Surgery remains feasible even in countries with limited resources.

**Categories:** Otolaryngology, Public Health, Nutrition

**Keywords:** africa, humanitarian mission, thyroidectomy, endemic goiter, giant goiter

## Introduction

Thyroid diseases are one of the most common endocrine disorders worldwide. Endemic goiter due to iodine deficiency remains a public health concern in sub-Saharan Africa. In these areas, given the lack of available health care and socioeconomic issues, many patients often neglect their diseases and can present with enormous goiters. These massive goiters may result in significant pressure symptoms like dyspnea and dysphagia and sometimes be the cause of stigma and rejection. Surgical removal is the treatment of choice in such cases. It provides instant relief from the effects of pressure and ensures good cosmetic results.

However, in developing countries, due to delayed diagnosis and lack of qualified human resources, surgical management of these goiters remains challenging [1-3]. Here, the authors report a case of endemic giant goiter operated during a humanitarian mission.

## Case Presentation

During a surgical humanitarian mission in a low-income Sub-Saharan African country, a 50-year-old female, with no past medical history, who was not taking any medications, presented with a large cervical mass evolving for nearly 30 years. The patient complained of heaviness-like pain without dysphonia or dysphagia. She reported feeling moderate dyspnea when walking or during household activities. Aesthetic and social embarrassment was very important and associated with ostracism.

On physical examination, she had a huge hypertrophy of the thyroid gland, occupying the whole neck, and overflowing laterally (Figure 1) measuring 23 cm x 17 cm x 15 cm. This firm goiter was painless, not fixed to the underlying structures, and without thrill or vascular murmur. There was no proptosis, no tachycardia, and no palpable lymph nodes. From the clinical findings, the diagnosis of huge, nontoxic, multinodular goiter was retained.

### How to cite this article

Lame C, Atila M, Dembele B, et al. (May 23, 2023) Management of a Long-Standing Huge Goiter During a Humanitarian Mission: A Case Report. Cureus 15(5): e39365. DOI 10.7759/cureus.39365



**FIGURE 1: Anterior view of patient with huge multinodular goiter**

Total thyroidectomy was performed under general anesthesia after the identification and preservation of recurrent laryngeal nerves and parathyroid glands. It allowed the excision of a bulky, firm, multi-nodular thyroid weighing 3 kg (Figure 2).



**FIGURE 2: Total thyroidectomy specimen weighing 3 kg**

Postoperative recovery was uneventful without dyspnea or muscle cramps. The patient was discharged three days later, with levothyroxine replacement therapy (100 micrograms per day), and placed under the supervision of the general practitioner.

## Discussion

Giant goiters can still be encountered in goiter-endemic areas [1-3]. These enormous goiters exceeding 500 grams are extremely rare and often found in sub-Saharan Africa and in some Asian countries [1-3]. Their occurrence in developing countries increases the complexity of the management [4].

In these places, the management of giant goiters often comes up against a diagnostic delay, a lack of qualified human resources, and an insufficient technical platform [2,3,5,6]. This was the case of our patient who lives in a remote area of a sub-Saharan African country marked by difficult access to healthcare facilities.

Technology to support medical decision-making is often lacking in these places [2]. For our patient, in the context of a humanitarian mission, and in the absence of biology and imaging assessments, we contented ourselves with anamnestic data and physical examination to make a diagnosis of huge non-toxic multinodular goiter and decide for intervention.

Total thyroidectomy is the best treatment modality for giant goiter [7]. It does not require any special conditions other than a sterile operating room, lights, and the availability of conventional soft tissue surgery instruments [2,5]. Anesthesia for patients with huge goiter can face intubation difficulty [8-11]. This exigent surgery is very challenging. It imposes perfect control of the thyroidectomy technique [9]. Morbidity and mortality linked to this surgery remain significant whatever the working conditions [2,12]. In the described case, no postoperative complications developed. The patient was discharged home on the hospital day 3.

## Conclusions

Giant endemic goiters still exist in sub-Saharan Africa. Surgery is the main treatment modality in such cases. Subtotal thyroidectomy, with its long-term risk of recurrence, is an option but total thyroidectomy is

the preferred one. The volume and the weight of these huge goiters might involve some surgical difficulties. However, the procedure does not require any particular technology and can be performed regardless of the work context.

## Additional Information

### Disclosures

**Human subjects:** Consent was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

## References

1. Agarwal A, Agarwal S, Tewari P, et al.: Clinicopathological profile, airway management, and outcome in huge multinodular goiters: an institutional experience from an endemic goiter region. *World J Surg*. 2012, 36:755-60. [10.1007/s00268-012-1447-x](https://doi.org/10.1007/s00268-012-1447-x)
2. Watters DA, Wall J: Thyroid surgery in the tropics. *ANZ J Surg*. 2007, 77:933-40. [10.1111/j.1445-2197.2007.04286.x](https://doi.org/10.1111/j.1445-2197.2007.04286.x)
3. Zahra A, Abdallah O, Farag GA: Giant cervical goiter with posterior mediastinal extension. *Cureus*. 2017, 9:e1450. [10.7759/cureus.1450](https://doi.org/10.7759/cureus.1450)
4. Dedhia PH, Stoeckl EM, McDow AD, Saruni S, Schneider DF, Long KL: Preoperative surgeon-performed ultrasound of massive thyroid goiter in rural Kenya. *Am J Surg*. 2021, 221:925-6. [10.1016/j.amjsurg.2020.09.035](https://doi.org/10.1016/j.amjsurg.2020.09.035)
5. Jafari A, Campbell D, Campbell BH, et al.: Thyroid surgery in a resource-limited setting. *Otolaryngol Head Neck Surg*. 2017, 156:464-71. [10.1177/0194599816684097](https://doi.org/10.1177/0194599816684097)
6. Pauleau G, Goin G, Cazeres C, Sebag F, Balandraud P: Thyroid surgery applicable in developing countries (Article in French). *Med Sante Trop*. 2015, 25:23-8. [10.1684/mst.2014.0364](https://doi.org/10.1684/mst.2014.0364)
7. Tao T, Gang Y, Ji S, et al.: Giant cervical goiter in Hashimoto's thyroiditis: a case report. *J Int Med Res*. 2022, 50:3000605221096379. [10.1177/03000605221096379](https://doi.org/10.1177/03000605221096379)
8. Alaguvelsamy S, Pal Singh S, Ramalingam R, Kombupalayam Komarappa Gounder R: Giant toxic multinodular goiter with dyspnea: a case report. *Int J Surg Case Rep*. 2020, 73:190-5. [10.1016/j.ijscr.2020.07.017](https://doi.org/10.1016/j.ijscr.2020.07.017)
9. Mabewa AA, Njile J, Mushi A, et al.: A two kilograms euthyroid goiter in Singida Regional Referral Hospital, Central Tanzania: case report. *Int J Surg Case Rep*. 2020, 77:430-3. [10.1016/j.ijscr.2020.11.010](https://doi.org/10.1016/j.ijscr.2020.11.010)
10. Olusomi BB, Aliyu SZ, Babajide AM, Sulaiman AO, Adegboyega OS, Gbenga HO, Adebisi RG: Goitre-related factors for predicting difficult intubation in patients scheduled for thyroidectomy in a resource-challenged health institution in North Central Nigeria. *Ethiop J Health Sci*. 2018, 28:169-76. [10.4314/ejhs.v28i2.8](https://doi.org/10.4314/ejhs.v28i2.8)
11. Chung MY, Park B, Seo J, Kim CJ: Successful airway management with combined use of McGrath(®) MAC video laryngoscope and fiberoptic bronchoscope in a severe obese patient with huge goiter -a case report. *Korean J Anesthesiol*. 2018, 71:232-6. [10.4097/kja.d.18.27203](https://doi.org/10.4097/kja.d.18.27203)
12. Pereira Pérez F, Calvo Espino P, Sánchez Arteaga A, et al.: Thyroid surgery at a volunteer program in Sub-Saharan Africa. *Cir Esp*. 2016, 94:404-9. [10.1016/j.ciresp.2016.05.017](https://doi.org/10.1016/j.ciresp.2016.05.017)