

Case Report

Management of a giant euthyroid goiter in limited resources settings: case report

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Received: 23 November 2019

Revised: 09 January 2020

Accepted: 10 January 2020

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ABSTRACT

The cases of giant multinodular goiter are rare clinical conditions nowadays. We present here a case of giant multinodular goiter successfully treated at Hôpital Provincial du Nord Kivu (Regional referral hospital and Goma teaching hospital). A 59 years old man with 40 years' history of gradual growing of an anterior cervical mass. The patient reported compressive symptoms such difficulty in breathing, hoarseness of the voice and difficulty in swallowing during the last nine months prior to our consultation. A total thyroidectomy was performed as well as a one year of follow-up, showing good evolution.

Keywords: Giant multinodular goiter, Total thyroidectomy, Compressive symptoms

INTRODUCTION

Benign nodular goiter is one of the most common endocrine disorder, especially in countries where iodine deficiency is endemic. Goiter is an enlargement of thyroid gland due to compensatory hyperplasia and hypertrophy of the follicular epithelium which occurs sporadically and usually of unknown etiology.¹ Nodular goiter is rare before middle age and female preponderance has been established. Adenomatous or colloid multinodular goiters (MNG) are common, occurring in three to five percent of the general population; haemorrhage, fibrosis and calcification are found within goiters and the incidence of malignant transformation approximates five to seven percent.² We present here a rare case of colloid multinodular goiter which presented as dyspnea and dysphagia. Ideally large goiter should be treated before they reach a substernal

component otherwise any sudden growth in gland size could seriously compromise respiration.

CASE REPORT

A 59 years old male consulted to our outpatient department of otolaryngology-head and neck surgery, Hôpital Provincial du Nord Kivu (Regional referral hospital and Goma teaching hospital), Democratic Republic of Congo. He had a large swelling over the anterior part of the neck right sided. 20 years ago, when he noticed the swelling it was as small as his thumb. It progressively increased in size until the present size. Physical examination revealed a firm lobulated solid mass approximately 25×18 cm in its largest dimensions and displayed multidirectional enlargement extending just below the chin to the suprasternal notch. The swelling moved with deglutition and dilated vessels were

seen over the swelling. No enlarged lymph nodes were palpated. A difficulty of swallowing was noted. The patient reported a history of shortness of breath for 5 days with hoarseness of voice since 5 years prior to our consultation. No night sweats, no other similar swelling noticed by the patient, no any chronic illness, no history of trauma or fractures, no history of surgery, no history of radiation exposure, no similar condition and chronic illness and tumours in his family were reported.

Some relatives and friends of him have been saying that someone cast to him a spell, so he has become a curse in the family. For this reason, he was taken to the traditional healer in order to get purified, unfortunately in vain after six months drinking unknown decoction. Thyroid function test (TFT) was normal. All other haematological and biochemical profile were within the normal range. Ultrasonography showed grossly enlarged thyroid with heterogeneous echotexture, small cystic areas and small specs of calcification.



Figure 1: Giant goiter before surgical excision, anterior view.

Computerized tomography (CT) and fine needle aspiration cytology (FNAC) were not done due to compressive symptoms he was clinically presenting and unavailability in our hospital. On the basis of above findings, the patient was planned for surgery.

A dissection total thyroidectomy was performed. During surgery, contrary to our expectations, we were able to smoothly intubate the patient. A transverse neck incision two finger width above the suprasternal notch was given. Anatomical landmarks were disturbed. The incision was

subsequently deepened up to subcutaneous fat level. Skin flaps were raised in subplatysmal plane superiorly to the thyroid notch and inferiorly to the sternal notch and dissection done between strap muscle and thyroid capsule. Gentle finger dissection was used to free the goiter circumferentially, from the surrounding soft tissues, anteriorly and proceeding laterally, posteriorly and inferiorly. The dissection is facilitated by simultaneous traction. The thyroid gland was totally removed.



Figure 2: Giant goiter before surgical excision, lateral view.



Figure 3: Giant goiter removed after excision.

Patient was sent to general otorhinolaryngology ward for observation, tracheomalacia was not observed so no tracheostomy was done. Resulting thyroid specimen was 23×17 cm in its largest dimensions and weighed 2.6 kg. Histopathological examination that revealed colloid goiter. There were no features of hypocalcemia

postoperatively. He stayed in hospital for seven days which were uneventful. Suture removal was done on 7th post-op day and was discharged on the same day. A year period of follow-up, showing good evolution.

DISCUSSION

Goiter refers to an enlarged thyroid gland. A multinodular goiter is simply a thyroid gland that is usually enlarged and contains multiple thyroid nodules. The nodules can be very small, often only a few millimeters in size, or can be larger, perhaps several cm each.^{1,3} The normal adult thyroid gland weighs 10 to 25 g.⁴ Worldwide; the most common cause of goiter is iodine deficiency. In fact, it has been estimated that goiters affect as many as 200 million of the 800 million people who have a diet deficient in iodine. Iodine deficiency has been shown to be associated with endemic cretinism, endemic goiter and subretinuous mental subnormalities.^{4,5} Thyroid gland disorder is among the most common endocrine disorder and occurs globally with an incidence of geographical variation and histopathological pattern related to age, sex, nutrition and environment-related factors.^{1,5,6} Various causes of goiter include defects in thyroid hormone synthesis, iodine deficiency, autoimmune disease, and nodular diseases. Endemic goiter is thought to be caused by TSH stimulation resulting from inadequate thyroid hormone and other paracrine growth factor synthesis. Thus, the thyroid gland enlarges in an attempt to maintain a euthyroid state. Thyroid nodules may be solitary or multiple, and they may be functional or nonfunctional. Diffusely enlarged thyroid glands can cause compressive symptoms involving the trachea, esophagus, and recurrent laryngeal nerve. Some of these compressive symptoms can include dyspnea, stridor, orthopnea, dysphagia, or hoarseness. This is particularly concerning when there is a substernal component to these lesions, because any sudden growth in gland size would occur within a confined space and could seriously compromise respiration.^{2,5,6} However, these specific symptoms can also occur in malignant goiters. The risk of malignancy in dominant nodules within multi-nodular goiters is approximately 10%. Such malignancies can be extremely slow growing and may be present for many years before being discovered.⁷ Surgical excision remains the best therapeutic option as it can immediately resolve compressive symptoms but based on the unfortunate outcome for such patients, one should avoid unnecessary and risky surgeries when there is a lack of facilities and well trained personnel for proper postoperative care.^{8,9} Although goiters have been reported to decrease by up to 40% after RAI treatment, such therapy may not sufficiently diminish the size of the gland and could even cause temporary gland enlargement due to subsequent oedema.⁸⁻¹⁰ This treatment is not easily available in many low income countries such the Democratic Republic of Congo. These enlarged thyroid glands can also be of cosmetic concern for some patients, who opt for surgical excision of the lobe or gland for this reason.

CONCLUSION

Some preventive pathologies are still found in some parts of the globe, especially areas suffering from a lack of primary health care services, as a result of social, cultural, economic, and political problems. Goiter can be prevented even managed easily if diagnosed at early stage. WHO has published guidelines to prevent iodine related disorders that are required to be followed in rural areas, for which awareness programs, camps, etc. can be conducted time to time to prevent such presentations. In the case study presented here, total thyroidectomy was performed smoothly and successfully. Although the surgical technique used was routine; the operative challenge was the big size of the gland and the disturbance of the anatomical landmarks in the location where vital structures are situated. To improve the outcome of total thyroidectomy, which is commonly performed worldwide, such huge goiter must be taken seriously. In particular, the establishment of safety measures and proper facilities (both equipment and personnel) should be considered beforehand. A part compressive symptoms and cosmetic purpose, giant goiters should be treated before substernal extension because any sudden growth in gland size could seriously compromise with patient's life. Total thyroidectomy is a useful, safe and justified procedure in patient with giant multinodular goiter with compressive symptoms.

ACKNOWLEDGEMENTS

We are grateful to Mrs .Namushukuru Yvette and Mbindule Eugénie and Dr Jeef Mutambala, for helpful work regarding data collection.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Jason NK, Akomu M, Safari S, Sosthene TV, Namwagala J. Management of a giant euthyroid goiter in limited resources settings: case report. *Int J Otorhinolaryngol Head Neck Surg* 2020;6:574-7.