ORIGINAL RESEARCH

AN UNUSUAL GIANT RECURRENT GOITER: A CASE REPORT AND LITERATURE REVIEW

https://doi.org/10.60787/ajrmhs.v2i2.38

Rex Friday Ogoronte A. Ijah[1*], Itekena E. Wakama[1], Isesoma Gbobo[2], Ibifuro A. Green[3]

[1]Rivers State University / Consultant General Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Nigeria
[2]Rivers State University / Consultant Paediatric Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Nigeria
[3]Consultant General Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Nigeria
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***Correspondence:** Rex Friday Ogoronte A. Ijah; **Email:** rexijah@gmail.com

Abstract

Introduction: Giant goiter is a rare disease condition, and is defined by an enlargement of the thyroid gland of at least 10 g/kg body weight or a thyroid tumour larger than 10 cm in diameter.
This case report presents an unusual giant recurrent goiter observed at the Surgery Out-patient Clinic of Rivers State University Teaching Hospital, Port Harcourt.

Case Presentation: A 30-year-old female who presented to our centre on account of anterior neck swelling lasting 10 years. The patient showed no toxic or compressive symptoms, had no weight loss, and had previously undergone goitre surgery. Examination revealed a massive, asymmetrical anterior neck mass (20 cm x 20 cm) that moved with swallowing but not with tongue protrusion, accompanied by palpable cervical lymph nodes. The neck CT-Scan dimensions were 168.2 x 206.7 x 210.7mm, and the thyroid function test was normal. A neck CT scan showed dimensions of 168.2 x 206.7 x 210.7 mm, and thyroid function tests were normal. The diagnosis was giant recurrent non-toxic multinodular goitre.

Conclusion: The patient's surgical care was challenged by various individual socioeconomic and healthcare givers, and health system factors. There is a need for political and administrative efforts to address the health needs of the Nigerian population adequately.

Keywords: Giant, Goiter, Recurrent, Unusual, Port Harcourt, Nigeria.

Cite as: ***Ijah RF, Wakama IE, Gbobo I., Green IA. An Unusual Giant Recurrent Goiter: A Case Report and Literature Review. AJRMHS. 2024;2(2):32-38***

INTRODUCTION

Giant goitre is a rare occurrence and is defined by an enlargement of the thyroid gland of at least 10 g/kg body weight or a thyroid tumour larger than 10 cm in diameter.[1] There is increased risk of intra-operative and post-operative complications associated with giant goitre,[2-4] hence unique surgical considerations and intensive care unit admission are necessary for good outcome.[5, 6] A multidisciplinary team approach involving endocrinologists, otorhinolaryngologists (ENT surgeons), anaesthetists and general surgeons, is recommended for safe management. While goitre is a known global disease, giant goitre appears to be more frequently seen in some parts of the world than others. A mini-review is therefore presented.

A giant recurrent intrathoracic goitre in a 59-year-old man was reported at King's College Hospital London in the year 2014, for which surgery was successfully done.[7] A similar goitre was reported in a 57 year-old female in Kanagawa Japan in year 2018.[8] A huge goitre was reported in Koltata India in the year 2016 with CT Scan measured dimensions of 17×12.2×13.5cm and the weight was 3.1kg.[9] There are other reported such cases in Pakistan,[10] India,[11, 12] Western Nepal in South-East Asia.[13] A giant posterior mediastinal goitre has also been reported in India.[14] In the African continent giant goitre has been described in Egypt,[15] Jimma in Ethiopia,[16] Democratic Republic of Congo,[17] Morrocco.[18] In Nigeria, thyroid surgeries had been done using general, regional, and local anaesthesia.[19-21] In the year 2019 in North-Western Nigeria, a chronicle of 97 patients operated for goitre was reported, out of which 19.6% (n = 19) had giant goitre with weight varying between 900g and 3200g.[22] Sub-total thyroidectomy for giant goitre was also carried out under local anaesthesia in a pregnant woman who presented with compression symptoms.[20, 23] There were still other Nigerian reports.[2, 24]

Occurrence of goitre in African setting has been widely reported,[25-30] and in Nigeria some regions are described as goitrous zones or thyroid belt.[31-33] Malignancy has also been described among some of the endemic goitres.[34] However, when giant goitre occurs, it is a function of accessibility, affordability, and quality of available health services. The known problems of giant goitre when seen in a patient with significant socio-economic concerns (indigent patient), rather multiplies the challenges. The motivation for reporting this occurrence is the combination of factors in this single case of giant goitre experienced in our health system. This study therefore aimed to report an unusual presentation of a giant recurrent goitre - seen at the Surgery Out-patient clinic of the Rivers State University Teaching Hospital in Port Harcourt in year 2023.

CASE PRESENTATION:

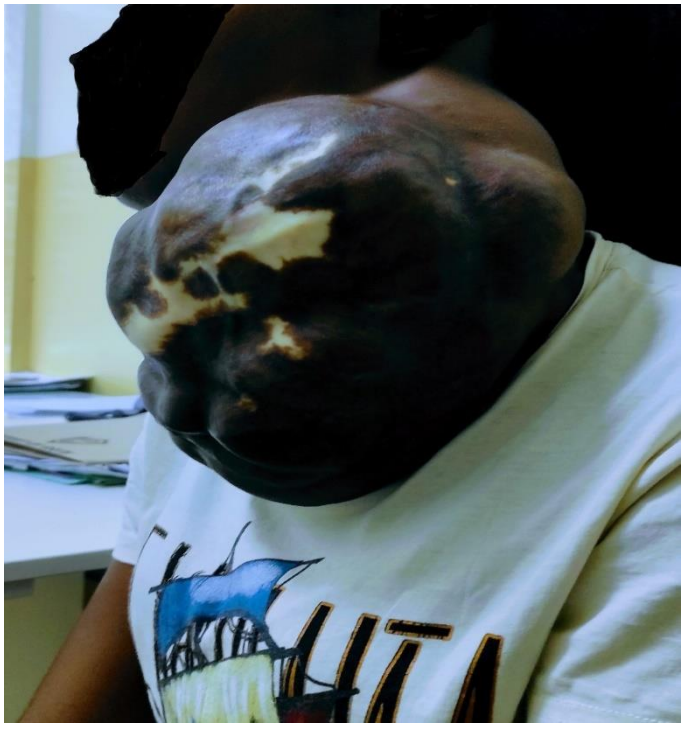
Clinical History: A 30-year-old single female from Enugu State Nigeria, a teacher and a Christian of the orthodox denomination, presented to the Surgery Department of the Rivers State University Teaching Hospital on account of anterior neck swelling of 10 years duration. There was no associated weight loss, toxic or compression features, and no ulceration or discharges from the swelling. The systemic review was unremarkable. She had a similar swelling in year 2005 (when she 10 years of age) which was surgically removed (without histologic confirmation), however the mass reoccurred in 2014 when she resorted to application of some herbal concoctions on the surface of the mass and ingested some. She had been treated for tuberculosis for uncertain duration. The patient is the second child in a family of five children (2 females and 3 Males), all alive and well. No family history of similar swelling, and no history of similar swelling in her neighbourhood.

Physical Examination Findings: Significant examination findings include: a young lady with a huge asymmetrical muti-lobulated anterior neck mass occupying the whole anterior and lateral sides of the neck. There was a traverse scar, with variegate skin pigmentation, and presence of prominent veins. The mass measured about 20cm by 20cm (see the clinical photograph), firm in constituency, non-tender, stretching and underlying the sternocleidomastoid. The trachea was central, no retrosternal extension, however, the cervical lymph nodes were enlarged (felt in the posterior triangle). Other systems were unremarkable.

Clinical Photograph (Front View)
Taken with Patient's Written Consent

Clinical Photograph (Front View)

Clinical Photograph (Right Side View)
Taken with Patient's Written Consent



Clinical Photograph (Left View)
Taken with Patient's Written Permission

Clinical Investigation Results: *The computerized axial tomography scan of the neck* revealed a huge multinodular thyroid mass measuring 168.2 x 206.7 x 210.7mm in anterior-posterior, transverse, and craniocaudal dimensions respectively. There were few necrotic foci and calcific deposits. There was also displacement of adjacent vessels, tracheal deviation to the right, slight displacement of the esophagus to the right, no retrosternal extension, and no regional lymph nodes. A *computerized axial tomography scan of the chest* was done which revealed presence of multiple pulmonary nodules of varying sizes within the lung fields: the largest on the right measured 24.7x26.0mm, and on the left measured 12.9x14.9mm. There was no pleural thickening or collection. The *thyroid function test* showed T3 = 1.5ng/ml (0.6-.9ng/ml), T4 = 6.9ug/dl (5-13ug/dl), TSH = 2.0mIU/L (0.4-4.0mIU/L). The full blood count showed normal white cell count ($3.5x10^9$/L) with relative lymphocytosis (lymphocyte 57%, neutrophil 37%, others 6%).

Intraoperative Findings: There were no intraoperative findings or postoperative care details, as the patient did not return for surgery.

DISCUSSION

The challenges of managing giant goitre are magnified when seen in patients with significant socioeconomic concerns (indigent patients). These challenges are multidirectional, including some strain on the caregivers and drainage of resources from the health system administrators' perspective. The patient had surgical treatment for goitre at 10 years of age, and the details of the type of goitre was not available. The area described as the thyroid belt in Nigeria is inclusive of some parts of Enugu from where this patient hails from. The thyroid belt in Nigeria includes communities in the following areas: Akoko-Edo local government area (LGA) in Edo State; Igboetiti and Uzo-uwani LGAs in Enugu State; Kastina-Ala in Benue State; Mangu and Bassa in Plateau State; Obudu and Abalinku in Cross Rivers State; Okpokwu, Ankpa, Idah, and Oturkpo in Benue State; and Ifedapo in Oyo State.[35] Occurrence of goitre at 10 years may therefore imply the possible role of goitrogens or iodine deficiency in the area of residence.[33] This patient declined occurrence of neck swelling in the neighborhood, although the patient may have been too young to know at the time and the introduction of iodized salt may have changed the possibility of this finding. Another possible reason for goitre occurring in a ten-year-old female could be dyshormonogenesis from the role of genetic factors. This childhood goitre occurrence is similar to earlier reported iodine deficiency among some school children in northern, western and eastern Nigeria.[36-39]

In this patient there was no significant weight loss, and the thyroid function tests were normal. There were few enlarged cervical lymph nodes and chest CT scan findings of multiple pulmonary nodules of varying sizes within the lung fields in this patient with giant goitre. It could be explained that there were residual findings pointing to old tuberculous lesions in the lungs, in a patient who had had treatment for pulmonary tuberculosis. It is also possible that the cervical lymph nodes may have resulted from skin excoriations following usage of topical herbal medications which the patient used. It is possible that there was malignant focus in the giant recurrent goitre, especially papillary thyroid cancer as this is commoner in younger age group and often associated with lymph node enlargement.[40] Without being restrictive in the differential diagnosis, although rare the likelihood of tuberculous giant goitre may not be ruled out in a patient with a history of previous treatment for tuberculosis. This line of thought is strengthened by available reports in the literature within Nigeria,[41, 42] and outside Nigeria.[43-48]

Histologic diagnosis of the goitre that was operated at 10 years of age was not done in this patient. As unacceptable and unkind as this observation seem to be, it not only at the patient and the healthcare provider, but at the regulatory administrators of our health system. The reasons span from inability to afford the cost of histopathologic analysis (a blind focus on taking off the unsightly neck mass); lack of discernment on the side of the surgeon in emphasizing the importance of histopathologic analysis (and hence appear to be helping the patient); and the regulatory authorities who allow substandard practices in the name of showing understanding in a low-income setting. Similar concerns on lost surgical specimens have been raised in the literature within and outside Nigeria.[49, 50] In this patient, there was recurrence of goitre after the first surgery at 10 years, and

there was a significant delay in seeking for conventional orthodox treatment after the recurrence. While it is not unusual to find cases of recurrent goitre in our practice which has been severally reported,[51, 52] for which many reasons could be adduced, a recurrence to the point of occurrence of giant goitre was unusual. Combination of unanalyzed surgery specimen, delay in seeking for care, occurrence of recurrent giant goitre, and inability to come back for the intended treatment, all pointed to the prevalent poor socioeconomic condition of the patient and consequent inability to afford needed care.

Although inability to come back for intended hospital treatment could also be as a result of the fact that the patient had completed the mandatory post-graduation national service and returned to her home state, it could not hide the fact that there is some form of failure in the healthcare delivery system resulting in a disappointment of this patient, who had weathered through the university environment with this giant goitre and volunteered for the compulsory national service even in her necessity. The experience of this patient is a tip of the ice-berg, as evident in the works of other researchers in our setting highlighting the negative role of poverty in the presentation of surgical diseases.[53-56] This report also brings to the fore the resilience of this Nigerian youth, who despite the social and psychologic setback of disfiguring giant goitre, shielded herself in the camouflage of her dressing and passed through the rigors of the university environment, graduated and got posted for national service. This resilience that is typical of the earlier reported resilience of the Nigerian citizen that is worthy of emulation,[57-60] and deserve to be saluted, and commended.

Limitations: We are unable to provide information on intraoperative findings, postoperative care and outcome of care since the patient did not come back for surgery.

Conclusion

A report of a young Nigerian female to had surgery for goitre at 10years of age and subsequently developed a giant recurrent goitre was presented. There were multiple challenges in the pathway of surgical care, including individual socioeconomic, healthcare giver's factor and health systems factors. There is need for concerted effort by political and administrative actors to adequately address the health needs of the Nigerian people.

OTHER INFORMATION

Acknowledgement: We acknowledge the patient who graciously granted permission for a report of this case to be presented.

Research Ethics Considerations: A written permission was obtained from the patients for the use of their medical history without identifiers, for public good. The approval of the Research Ethics Committee of the Rivers State University Teaching Hospital was obtained before commencement of t
he study.

Source of Funding: The research was self-funded by the authors.

Conflict of Interest: None declared.

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