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RETROSTERNAL GOITER A DESCRIPTIVE ANALYTICAL STUDY FROM NORTHERN BORNEO, SABAH

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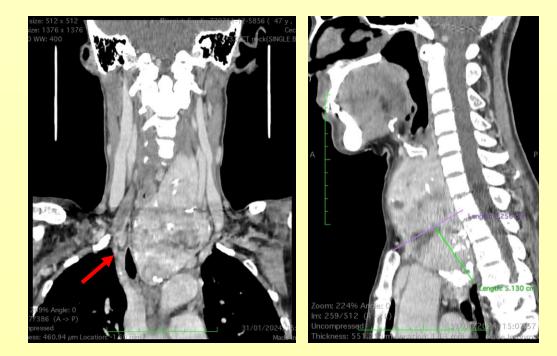
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INTRODUCTION

Retrosternal, substernal, or intrathoracic, goiter was first described by Haller in 1749¹. Retrosternal goiter (RSG) is a condition whereby 50% or more of the thyroid gland's volume extends below the clavicle and beyond the sternum into the thoracic inlet². Reported incidence rates of RSG were between 5-20% of all total thyroidectomy cases. Most are slow growing and are often benign in nature³.

CASE STUDY

We would like to report our local experience here from the Breast and Endocrinology Surgical department at Queen Elizabeth II Hospital in the surgical management of RSGs, with regards to clinical presentation, size, surgical approach, as well as surgical outcomes and recovery. This is a retrospective descriptive analysis included whom which all patients underwent thyroidectomy from January to December 2023. A total identified of 147 patients were (total and hemithyroidectomies), out of which 8 cases (5.44%) were RSGs. All 8 cases of RSGs were successfully operated via the conventional cervical approach without the need for midline sternotomy, despite the huge size of the retrosternal components. All cases were performed by a breast & endocrine consultant with continuous intraoperative neuromonitoring (Medtronic NIM 3.0/ NIM Vital).



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Figure 3. CECT neck and thorax showing the retrosternal extension

DISCUSSION

There were no clinical as well as statistical significance found between the age of the patient and the duration of disease to the size of the RSGs. However we realized all our RSG patients were female. We are still in the very early phase of determining the role played by genetics in RSGs patients. Even with such huge mass occupying a limited space, increasing the risk of many surrounding structures being compressed, none of our patient exhibited any obstructive symptoms, in fact two patient with the mass size of 10-12cm were 100% asymptomatic. Majority of RSGs can be resected from the conventional cervical approach, however, in cases where the retrosternal component is huge, thoracic access is determined by the pattern of extension. The anatomy of recurrent laryngeal nerve (RLN) is also variable, particularly in huge goiters and RSGs. We found the use of IONM in operating such huge RSGs has its benefit in avoiding RLN injury and to anticipate injury early that allows for adjunct management. All 8 cases operated upon did not have any aberrant or additional feeding vessels, although there have been published literature on it.



Figure 1. Physical presentation of our patient

OUTCOME

All 8 (100%) cases were of female, age range of 36 to 75 years old, with a median age of 55 years old. The size of the RSGs operated at our centre ranged between 5cm and 12cm. All 8 cases had retrosternal extension into the anterior mediastinum, with the largest retrosternal component measuring 9cm below the sternal notch. Of the 8 cases of RSGs, two (25%) patients exhibited clinical symptoms (breathlessness and drooping of eyelids) whereas the remaining six (75%) patients remained asymptomatic preoperatively. The most common preoperative findings was painless neck swelling in 6 patients (75%), while the remaining 2 patients (25%) were discovered as an incidental findings secondary to another medical procedure. CT scan data analysis revealed 6 patients had their trachea compressed, 2 patients with oesophageal compression and 1 patient had left brachiocephalic vein compression. None of the 8 patients exhibited obstructive symptoms. All 8 cases reported benign post resection histology; six were nodular hyperplasia (75%), one adenomatoid nodule (12.5%) and one non-invasive follicular thyroid neoplasm with papillary nuclear features (NIFTP) (12.5%). All the above patients were discharged well by post operative day 4 to 5.

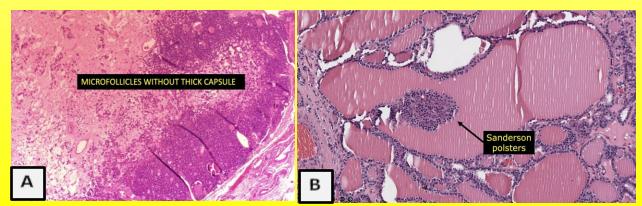




Figure 4. Gross specimen of the removed thyroid gland

CONCLUSION

RSGs are not uncommon and most cases are asymptomatic, and some are identified incidentally on imaging. Most RSGs will be successfully resected via cervical approach, but some may require chest approach. Classification system may aid in decision making on the preferred surgical approach. C-IONM is useful in aiding surgeons to locate and preserve the recurrent laryngeal nerve function or anticipate complications early.

REFERENCES

- Bizakis J, Karatzanis A, Hajiioannou J, Bourolias C, Maganas E, Spanakis E, et al., Diagnosis and management of substernal goiter at the University of Crete. Surg Today. 2008; 38:99-103.
- Goncalves J., Kowlski L.P. Surgical complications after thyroid surgery performed in a 2. cancer hospital. Otolaryngol. Head. Neck Surg. 2005;132:490-494. [PubMed] [Google Scholar]
- 3. Agha A., Glockzin G., Ghali N. Surgical treatment of substernal goiter: an analysis of 59 patients. Surg. Today. 2008;38(6):505-511. Epub 2008 May 31. [PubMed] [Google **Scholar**

Figure 2. Histopathological slide exhibiting (A) adenomatoid nodule (B) nodular hyperplasia