

Case Report

Ectopic thyroid mass separately present in mediastinum and not a retrosternal extension: a rare case report

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Received: 14 April 2023

Accepted: 15 June 2022

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ABSTRACT

Retrosternal extension of goiter is one of the most common types of masses in the superior mediastinum. These types of goiters classically present with compressive symptoms such as dyspnoea, dysphonia, dysphagia, or sleep apnea. Surgical treatment with a total thyroidectomy and complete removal of the intrathoracic portion of thyroid is the gold standard treatment. These cervico-mediastinal lesions at times may not be continuous, and a sternotomy may be required for complete and safe excision of the mediastinal mass to achieve decompression of the surrounding structures and preventing the hemorrhagic complications if attempted from cervical incision.

Keywords: Thyroid, Retrosternal extension, Dyspnoea, Dysphonic, Dysphagia

INTRODUCTION

Retrosternal extension of goiter is one of the most common types of masses in the superior mediastinum.^{1,2} It denotes the extension of thyroid tissue from its cervical portion in continuity passing into the anterior mediastinum, anterior to the arch of aorta.² Patient complains with compressive symptoms such as dyspnea, dysphonia, dysphagia, or sleep apnea, and less likely, these masses can compress the neurovascular structures resulting in superior vena cava syndrome and Horner's syndrome.^{3,4}

Therefore, surgical treatment with a total thyroidectomy and complete removal of the intrathoracic portion of thyroid is the gold standard treatment via a cervical approach or in rare circumstances a partial or complete median sternotomy may be required for complete and safe excision of the mediastinal mass to prevent further damage.^{5,6} One of the interesting features of these cervico-mediastinal lesions is that they may not be continuous. We have a case report of such a case.

CASE REPORT

This 34-year-old female, with no known comorbidities, presented to us with complaints of anterior neck swelling, in midline which has gradually increased in size over the last 1 year accompanied with odynophagia especially while climbing stairs which has progressively worsened since the onset of symptoms. She also complains of pain in neck which radiates to shoulders with increase in swelling when patient walks. On examination, a midline anterior neck swelling was present which was firm, approximately 5 cm in size, non-tender, non-compressible, and appears nodular, with overlying skin normal. The rest of the systemic examination was normal. She underwent fine needle aspiration cytology which showed a benign colloid nodule. Computed tomography scan was done which showed enlarged thyroid gland with multiple hypodense nodules and a well-defined lobulated cystic heterogeneously enhancing mass lesion of size 9×8.8×5.9 cm (Figure 1).

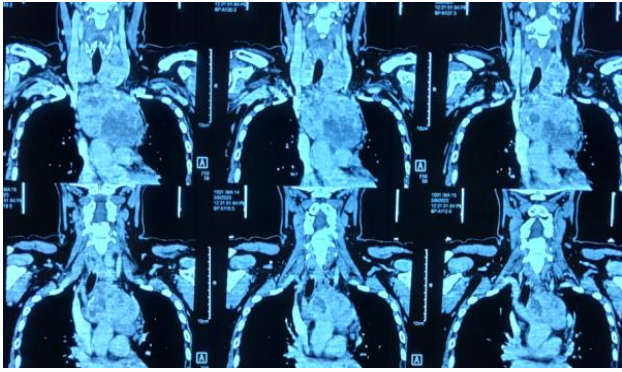


Figure 1: Coronal cuts of CECT neck.

She was admitted electively and underwent total thyroidectomy with midline sternotomy for removal of retrosternal mass (Figure 2a-d).

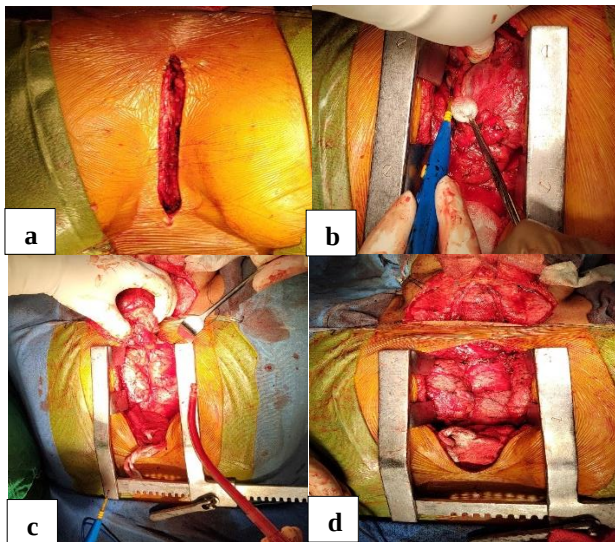


Figure 2: (a) Mid line sternotomy incision given, (b) intra op pic showing the retrosternal mass, (c) showing retrosternal mass, and (d) after removal of thyroid and retrosternal mass.



Figure 3: Retrosternal mass after excision.

Initially, thyroid was mobilized with transverse neck incision. Subsequently, the sternotomy was performed and the retrosternal component that was not adherent any

major vessels and mediastinal fat was mobilized. The intraoperative findings were enlarged right lobe of thyroid of about 5 cm and left lobe of about 5 cm in size. The mass appeared in continuity from neck to mediastinum but separately capsulated sizing to 9 cm (Figures 3 and 4). The postoperative course was unremarkable.

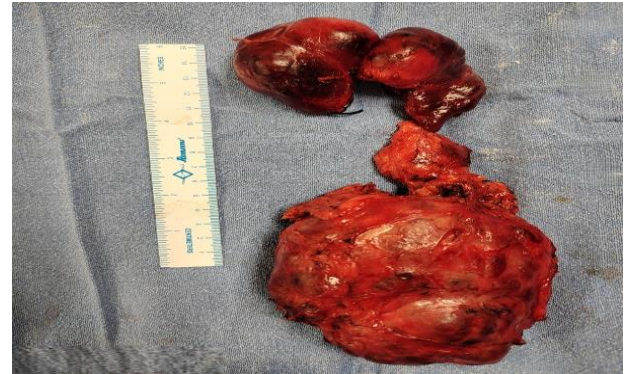


Figure 4: Excised thyroid with retrosternal mass.

DISCUSSION

The cervicomedastinal goiters, which are usually the extension of a single lobe of thyroid gland into the mediastinum, usually present with compressive symptoms of upper airway and esophageal tract with rapidly expanding size mimicking a malignant disease.¹ Recent studies reported that patients with cervicomedastinal thyroid masses most commonly present with neck mass and shortness of breath in more than 65% of cases with dysphagia occurring in about 25-30% of cases and thyrotoxic symptoms occur in only about 10-12.5% of patients.^{1,2} Therefore, these thyroid masses with or without respiratory distress require surgical excision as the only method of treatment as there is no other way of halting its progress and preventing it from compression of other mediastinal structures.^{1,5} In our patient she experiencing odynophagia.

Computed tomography (CT) scan remains the standard imaging conducted before operating on the cervicomedastinal thyroid masses to determine the size and extent of the mass and its relation to the surrounding mediastinal structures. It therefore helps in preoperating planning for anesthesia and surgical access either through cervical collar incision or cervicosternotomy for safe and complete removal of the mass.^{5,6} We anticipated that this patient will require sternotomy, and a multidisciplinary approach was used. In literature, a criterion has been defined for selecting patients for sternotomy based on CT features which include the volume of thyroid gland and whether it has extension below the carina, the source of its blood supply and the risk of hemorrhage, and the presence of enlarged mediastinal lymph nodes as in the presence of malignancy.⁶ Although 97% of mediastinal goiters can be delivered through cervical approach, it is sometimes evident from imaging to predict the need of sternotomy for the complete and safe resection with recent studies

reporting the rate of sternotomies to be about 3-8%.⁵ Even with combined cervicosternotomy approach, the prognosis of the patients in our cases as well as in literature has been excellent with almost zero percent mortality resulting in immediate resolution of symptoms.^{1,5,6} These separately capsulated masses if attempted to pull through cervical incision may possibly result in catastrophic bleeding with grave consequences.

This standard approach described above also eliminates the risk of “forgotten goiter” which is an extremely rare condition, a thyroid mass not directly in connection with cervical goiter, but present in mediastinum, separately encapsulated, as the two cases that we described above. If not removed and missed at the time of initial excision of cervical thyroid may result in reoperation later on, increasing the risk of morbidity and mortality from the procedure, and has been associated with higher risk of complications.^{2,6,7} Therefore, detailed examination and extensive imaging preoperatively keeping in mind the possibility of a separate retrosternal thyroid mass can result in better preoperative planning and patient counselling, hence further reducing the morbidity and risk of complications from the procedure.

CONCLUSION

These patients presenting with a cervicomedial masses usually need multidisciplinary team approach in the setting of a tertiary care hospital. These two cases highlight the importance of multidisciplinary approach keeping in mind the possibility of retrosternal extension as a separate entity and attempt to deliver through cervical approach may lead to increased complications.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Budhiraja G, Singh H, Harpreet, Prabhjot, Goyal N. Ectopic thyroid mass separately present in mediastinum and not a retrosternal extension: a rare case report. *Int J Otorhinolaryngol Head Neck Surg* 2023;9:590-2.