

## Case Report

### **An unusual presentation of a Goitre which could be missed; Primary Intrathoracic goitre**

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#### **Abstract**

A 62-year-old female was planned for total thyroidectomy; her clinical and ultrasonographic assessment did not reveal any retrosternal extension. Incidentally the preoperative chest radiograph revealed a retrosternal mass (Primary Intrathoracic goitre). Surgery included a total thyroidectomy, sternotomy and ICU care. She made an uneventful recovery after two days in ICU.

**Keywords:** Goitre, Retrosternal extension, Isolated mass in the chest, Thoracotomy, Primary intrathoracic goitre.

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## Introduction

Primary Intrathoracic goitre is a rare but potentially serious condition<sup>(1)</sup> which could be missed easily in the formal evaluation of a goitre. Usual clinical assessment and the ultrasonographic findings will not reveal this entity. If the intrathoracic goitre is small, it may not produce any symptoms. If undetected it may later be diagnosed as a Forgotten Retrosternal goitre <sup>(2)</sup> with mediastinal compression symptoms.

Secondary Intrathoracic goitre has a connection to the cervical thyroid; from which it has descended to the thorax maintaining the vascular connection; where as in Primary Intrathoracic goitres, the blood supply comes from intrathoracic vessels. Primary Intrathoracic goitres are commonly found in the superior mediastinum, but they may occur in the anterior or posterior mediastinum (15%) making the diagnosis far more challenging. Thyrothymic thyroid rests are implicated in the aetiology <sup>(3,7)</sup>. It can give rise to the same pathological outcomes as any goitre; neoplastic, infectious, or mass effects like compression of the trachea and other mediastinal structures. Surgical resection is the treatment option which commonly includes a thoracotomy.

## History

A 62-year-old lady was investigated for a goitre and was planned for total thyroidectomy. She was clinically and biochemically euthyroid. On clinical examination, there was a grade three goitre with a significant cosmetic concern to the patient. There were no palpable cervical lymph nodes and the lower border of the gland was palpable. The ultrasound assessment revealed a multi-nodular goitre without retrosternal extension. There were no hypo echoic nodules or nodules with increased vascularity to suggest malignancy. There were no pathologically enlarged cervical lymph nodes. She was ASA- I on pre-anaesthetic assessment; total thyroidectomy was offered and a date was given for admission.

On the day prior to surgery the blood investigations were repeated, blood was sent for grouping and save, and a chest radiograph was taken. The chest radiograph showed a retrosternal mass with clear margins which could be a Secondary Intrathoracic goitre or rarely a Primary Intrathoracic goitre in the background of a cervical goitre and the possibility of another mediastinal tumour.

An <sup>131</sup>I uptake scan was not possible in our setup. A MDT meeting was held to this regard and the cardiothoracic team was put on standby for a sternotomy at the same setting. (The ENT team was to do the cervical part and the thoracic surgeon will join for the sternotomy) A total thyroidectomy was done and the gland was removed. There was no vascular connection from the gland to the retrosternal mass. A midline sternotomy was done by the thoracic surgeon and it revealed a retrosternal multi-nodular goitre in the superior and anterior mediastinum. It was about 3.5cm\*3.0cm\*3.0cm in size and had a blood supply from the aorta (possibly thyroidea ima site).

The patient was monitored in the ICU and the chest drain was removed on the second post-operative day. She made an uneventful recovery. The pathological report of the neck gland and the retrosternal mass revealed, colloid cysts of varying sizes and nodular hyperplasia in keeping with a multi-nodular thyroid gland.

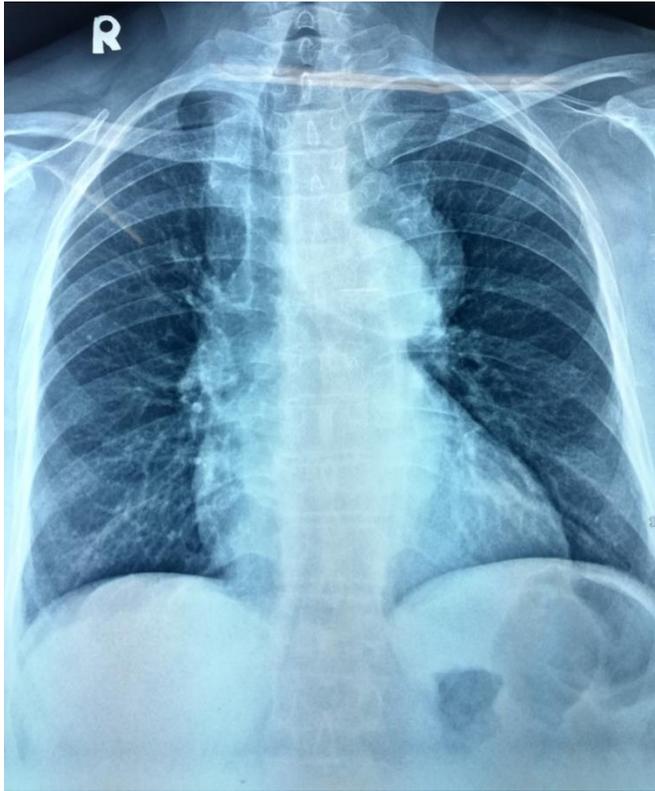


Fig 1- X ray PA view showing the retrosternal mass.

## Discussion

Primary Intrathoracic goitre is rare and could easily be missed in the routine clinical examination and investigations for a goitre. It has serious consequences if missed as it can have all the complications of a goitre including mass effect and malignancy. Incidental finding of a mediastinal mass in a chest radiograph is common and it needs further imaging, which includes a contrast enhanced computed tomography and a  $^{131}\text{I}$  uptake scan.<sup>(3,4)</sup>

In most hospitals in Sri Lanka, cardiothoracic surgeons are not available; they are confined to a few tertiary care centres. Imaging facilities such as computed tomography and MRI scan facility is equally confined to certain centres and such scans cannot be done easily on demand unless in emergency situations. Radio isotope scan facility is even difficult to be obtained as only a few centres are available for the whole country. In the National Hospital Kandy, we are fortunate in having a cardiothoracic unit and a dedicated surgical ICU where impromptu requests could be entertained. We were able to accommodate the surgery in the same operation list within the limited time period.

The multidisciplinary team discussion considered all the possible consequences of a retrosternal mass and the delay in obtaining imaging. We did not have the option of thoracoscopic assistance in mobilizing the tumour, but we had the theatre facility and the surgical team to do a combined surgery. In many hospitals in Sri Lanka, these facilities are not available to make early surgical plans. A thoracotomy could be avoided if there are facilities for thoracoscopic resection; provided the mass is small. Then it could be delivered through the cervical incision.

## Conclusion

Thyroidectomy is a commonly performed surgery in hospitals. Evaluation of a goitre includes clinical assessment, biochemical assessment (eg.TSH, T4), pathological assessment (FNAC) and radiological assessment (Ultrasound scan); which are available for all ENT units in our country.

The importance of a plain chest radiograph should not be overlooked as it may detect a rare mediastinal mass. It may avoid a surgical complication or a forgotten intrathoracic goitre. Such patients could be managed in tertiary care units where all the facilities are available. Therefore, doing a plain chest radiograph at the clinic may assist proper planning of surgery.

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