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Giant intrathoracic goitre: The challenges

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ABSTRACT

Intrathoracic goitre is defined as goitre in which at least 50% of the thyroid mass lies below the thoracic inlet. Here we report the case of a 43-year-old female, with history of left thyroid lobectomy 15 years earlier, who presented with dyspnoea. CT scan showed huge bilateral intrathoracic masses. Through median sternotomy, the masses were successfully excised, though with difficulty due to their hypervascular nature, along with completion thyroidectomy. Histopathology of the specimens showed multinodular goitre with no evidence of malignancy. The patient recovered well and one year after discharge, delivered a healthy baby.

1. Introduction

There are more than 10 definitions for intrathoracic goitre [1]. The one most commonly quoted is that provided by Katlic et al., who defined it as goitre in which most of the thyroid mass, arbitrarily at least 50%, lies below the thoracic inlet [2].

These goitres may be primary, arising from embryonic remnants and have no connection with the cervical thyroid, or secondary, when they represent a downward growth of the thyroid gland. By far the vast majority are of the secondary variety [3], which derive its blood supply from the thyroid arteries in the neck [4]. In contrast, the primary type has separate blood supply from the intrathoracic vessels. Consequently, secondary intrathoracic goitre of average size could be removed through a cervical incision, whereas the primary variety as well as the secondary variety with enormous dimensions necessitate a thoracic approach for their removal.

2. Case summary

A 43 year old female, with history of left thyroid lobectomy 15 years earlier, presented with right neck swelling associated with shortness of breath, with no suggestive symptoms of hypo- or hyperthyroidism.

On examination, she looked overweight and her blood pressure was 100/70 mm Hg, pulse 92/min, temperature 36.6 °C, respiratory rate 24/min and oxygen saturation 95%. Neck examination showed an old collar incision and a swelling on the right side of the neck with no palpable lymph nodes.

Laboratory works showed normal haemogram, urea, creatinine and electrolytes as well as the thyroid and liver functions.

Radiologic investigations including chest X ray, ultrasound (US) and computerized axial tomography (CT) scans showed right sided cervical goitre and huge bilateral intrathoracic masses, measuring 12.5×19.5 cm on the right side and 9.5×10 cm on the left side in the greatest dimensions, which appeared connected to the cervical goitre through a narrow isthmus (Figs 1, 2, 3, 4).

Fine needle aspiration (FNA) of the cervical goitre showed follicular lesion with colloid and cystic changes.

The patient was counselled regarding the necessity for surgery and its potential risks, but she remained reluctant for several months before she finally accepted. Expectedly, the surgery was difficult and massive bleeding was encountered at different stages of the

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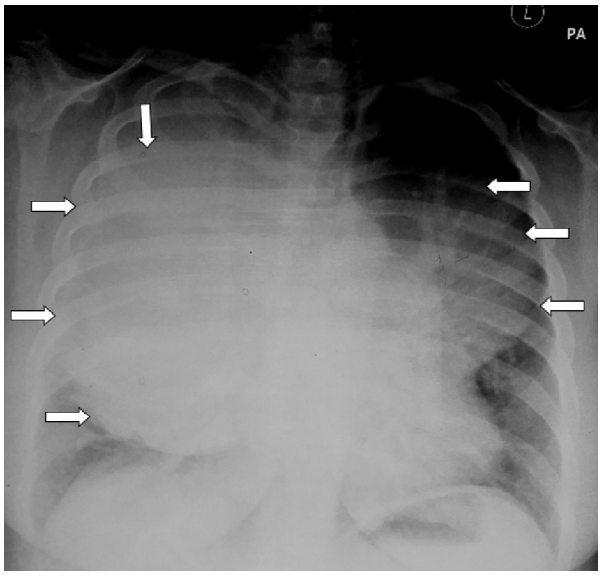

Fig. 1. Chest X ray showing huge bilateral intrathoracic masses.

procedure, necessitating much effort for control and several units of packed red cell transfusion.

2.1. Operative details

A median sternotomy was performed with the patient in the supine position. Grossly, the masses had the appearance of vascular thyroid tissue. The left mass was dissected first to free it from the surrounding structures and it was enucleated in toto. On the right side, several large collateral veins were found and had to be divided between ligatures. Dissection caused bleeding from minor tributaries of the superior vena, which had to be controlled and the situation was complicated more by injuring the innominate vein which had to be ligated. Finally, after tedious dissection, the mass was excised and haemostasis was achieved, followed by bilateral chest drain insertion and closure of the sternotomy wound. Completion thyroidectomy then followed through a cervical collar incision to remove the right thyroid remnant after identification and preservation of the recurrent laryngeal nerve. The patient was then shifted intubated and ventilated to the intensive care unit. Her postoperative investigations showed mild drop of serum calcium (2.9 mmol/L, reference range 2.12–2.60 mmol/L) and supplemental calcium was given.

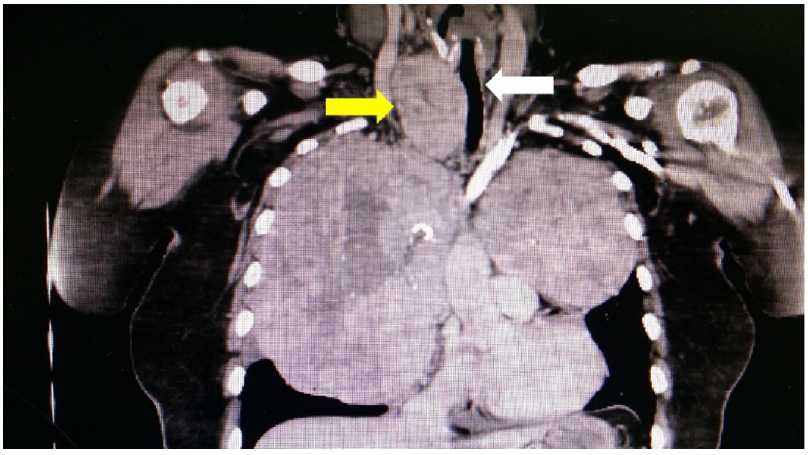

Fig. 2. Right thyroid remnant (yellow arrow) shifting the trachea to the left (white arrow), with huge bilateral intrathoracic masses.

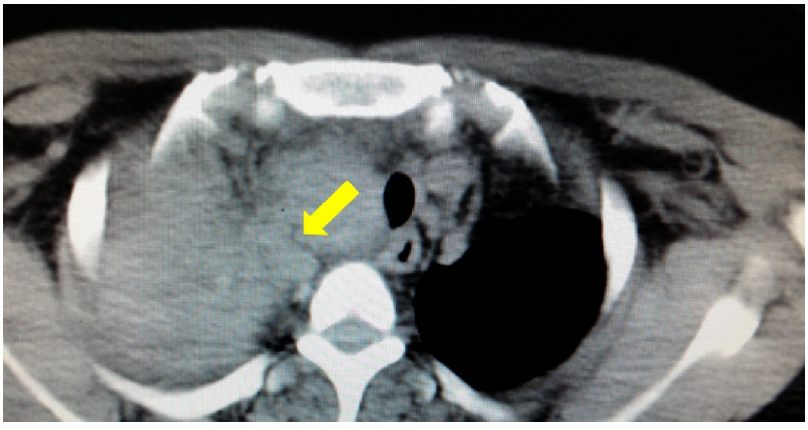

Fig. 3. Extension of the cervical goitre into the right side of the thorax (yellow arrow).