Intrathoracic Goitre Presenting as Posterior Mediastinal Mass

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Abstract

Intrathoracic goitres represent intrathoracic extension of cervical thyroid tissue; although rarely, ectopic thyroid tissue gives rise to an intrathoracic goitre. A 68-year-old woman was evaluated for posterior mediastinal mass, discovered incidentally on a routine chest film; computed tomography showed the mediastinal mass to be contiguous with the cervical thyroid with areas of focal punctate calcification. The mass showed pronounced immediate and prolonged enhancement after bolus administration of contrast medium.

Key words: Posterior mediastinal, Intrathoracic goitre.

Introduction

Intrathoracic goitres represent intrathoracic extension of cervical thyroid tissue. Rarely, a completely intrathoracic goitre arising from ectopic thyroid tissue can occur. Most mediastinal goitres are found in the superior mediastinum; however, if large enough, they may extend into the anterior mediastinum. Around 1/5th of intrathoracic goitres extend into the posterior mediastinum, posterior to the trachea and oesophagus. We report a case of cervical multinodular goitre with posterior mediastinal extension.

Case report

A 68-year-old housewife presented with the complaints of diffuse, dull aching, non-radiating chest pain, difficulty in swallowing, dyspnœa on exertion, weight loss (about 8 kg in 3 months), increased sweating, malaise, and increased appetite. Pulse rate was 100/min, blood pressure 140/90 mmHg, respiratory rate 28/min; she had fine tremors of the hand.

Routine chest radiography (Fig. 1), incidentally showed a well defined opacity in posterior mediastinum. Computed tomography (Fig. 2), revealed a well defined, inhomogeneous solid mass extending into the posterior mediastinum towards the right. The mass was contiguous with the enlarged right lobe of the thyroid and showed focal punctate calcification. It showed pronounced immediate and prolonged enhancement after bolus administration of contrast material. Fine needle aspiration cytology of the mediastinal mass was performed, the finding of which was...
consistent with the diagnosis of a multinodular goitre.

Thyroid function tests were as follows: Total $T_4$ - 212 nmol/l, Free $T_4$ - 45 pmol/l, Total $T_3$ - 5.0 nmol/l, Free $T_3$ - 12.5 pmol/l, TSH - 0.09 mU/l.

**Discussion**

Intrathoracic goitre is a common cause of mediastinal mass. In selected series, mediastinal goitre constituted 5 - 11% of mediastinal masses resected at thoracotomy. According to Wakely and Mulvany, when most of the goitre is cervical with a small intrathoracic component, it is termed as a 'cervical goitre' with thoracic extension. A 'partial intrathoracic goitre' has a major part in the thorax and when the whole goitre is intrathoracic, it should be termed as a 'complete intrathoracic goitre'.

Mediastinal goitres are chiefly intrathoracic extension of cervical thyroid; although rarely, ectopic thyroid tissue can give rise to an intrathoracic goitre. The majority of these are placed anteriorly in the mediastinum, but in a few cases, the mass descends into the posterior mediastinum, posterior to trachea and oesophagus.

Iodine-131 scanning is capable of detecting mediastinal thyroid tissue in nearly all cases. Pre-and post-contrast computed tomography has emerged as the preferred imaging modality for the evaluation of intrathoracic goitres. Computed tomography is capable of specifically diagnosing mediastinal thyroid as the cause of a mediastinal mass. Glazer et al demonstrated characteristic CT features of a mediastinal thyroid. These included:

1. Anatomic continuity with the cervical thyroid.
2. Focal calcification in areas of scarring.
3. Relatively higher CT attenuation values than soft tissues such as muscles of thoracic cage.
4. Pronounced enhancement after administration of iodinated contrast medium.
5. Prolonged enhancement after contrast administration.

Bashisht et al have documented a few more criteria in addition to those described above for the diagnosis of intrathoracic multinodular goitres. These include:

1. Well defined borders.
2. Inhomogeneity often with discrete non-enhancing low density areas.
3. Characteristic patterns of goitre extension into the mediastinum are the cradling of the goitre by the right and left brachiocephalic vessels high in the mediastinum and extension behind the great vessels to the paratracheal or retrotracheal region; this type of extension, readily shown by CT, is not characteristic of other mediastinal masses and can be important in suggesting intrathoracic goitre as the correct diagnosis.

Most of the above mentioned criteria were fulfilled in our case and we were able to establish a specific diagnosis of posterior mediastinal intrathoracic goitre.

Surgical management was done in this patient. Thyroidectomy was performed in this case and resection was performed through a transcervical approach.

**References**