

A rare tumour of the mediastinum: follicular thyroid adenoma

Introduction

Mediastinal masses account for approximately 3% of thoracic lesions (Aroor et al, 2014). This heterogeneous group includes thymomas, bronchogenic cysts, neurogenic tumours and thyroid tumours (Davis et al, 1987; Takeda et al, 2003). Ectopic thyroid can occur in any position from the foramen caecum at the base of the tongue to the mediastinum (Siddique and Bashir, 2018). Follicular adenomas are benign encapsulated tumours of the thyroid gland and the most common benign neoplasm of the thyroid gland (D'Avanzo et al, 2004). Publications describe the association of follicular adenomas with follicular carcinomas at a rate of 20% (Erikoglu et al, 2011). This article presents a rare case of a mediastinal mass with proven follicular thyroid adenoma in the mediastinum, with normal thyroid function tests and a normal thyroid gland in the cervical location.

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Case report

A 49-year-old woman was admitted to the authors' clinic with complaints of chest pain that had persisted for 2 months. Thoracic tomography showed a solid lesion of 77 × 65 mm, extending from the thymus localisation to the middle mediastinum, adjacent to the aortic arch and left brachiocephalic trunk (Figure 1). The lesion did not extend to the thyroid tissue. Preoperative examinations were performed. Thyroid-stimulating hormone, triiodothyronine and thyroxine levels were normal. The patient underwent complete mass excision and lymph node dissection by sternotomy. The sternotomy method was chosen because the lesion was 7 cm in size, extended to the middle mediastinum, was adjacent to the main vascular structures, and was suspected to be invasive. The patient was discharged without complications on the fourth postoperative day. The pathology result was reported as follicular thyroid adenoma (Figure 2). No malignancy was observed in the dissected lymph nodes. The pathology report confirmed that R0 resection had been performed on the lesion. Because of the thyroid-related lesion in the mediastinum, the patient underwent thyroid ultrasonography on follow up 10 days later. No pathology was observed in the thyroid gland and its size was normal. Blood levels of thyroid hormones were also normal.

Discussion

Ectopic thyroid is thyroid tissue located far from its normal anatomical location that has no vascular connection to the main gland (Consalvo et al, 2017). More than 99% of thyroid tumours occur in the thyroid glands (Thuillier and Venot, 2012) – ectopic thyroid tumours are extremely rare. They are either detected incidentally or show symptoms seen with other mediastinal lesions (Klubo-Gwiedzinska et al, 2011). This patient was admitted to the authors' clinic with chest pain and recurrent cough. One rare feature of this case was the association of ectopic thyroid tissue in the mediastinum and a thyroid gland with normal features in the neck; this is rarely described in the literature (Bano et al, 2019). Most patients with thyroid ectopia are asymptomatic, but obstructive symptoms and hypothyroidism have been observed (Guimarães et al, 2009). Hyperthyroidism is extremely rare (Abdallah-Matta et al, 2002). Thyroid size and function were normal in this case.

There is little information regarding the behaviour of these tumours, but it is likely to be similar to tumours of similar stage in the cervical thyroid gland (Klubo-Gwiedzinska et al, 2011). The gold standard treatment for these tumours in the mediastinum is surgical resection, especially in the presence of local compression symptoms (Guimarães et al, 2009). The preferred surgical approaches for the resection of mediastinal masses were median sternotomy, partial sternotomy, posterolateral thoracotomy and hemi-clamshell

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Figure 1. Preoperative computed tomography image.

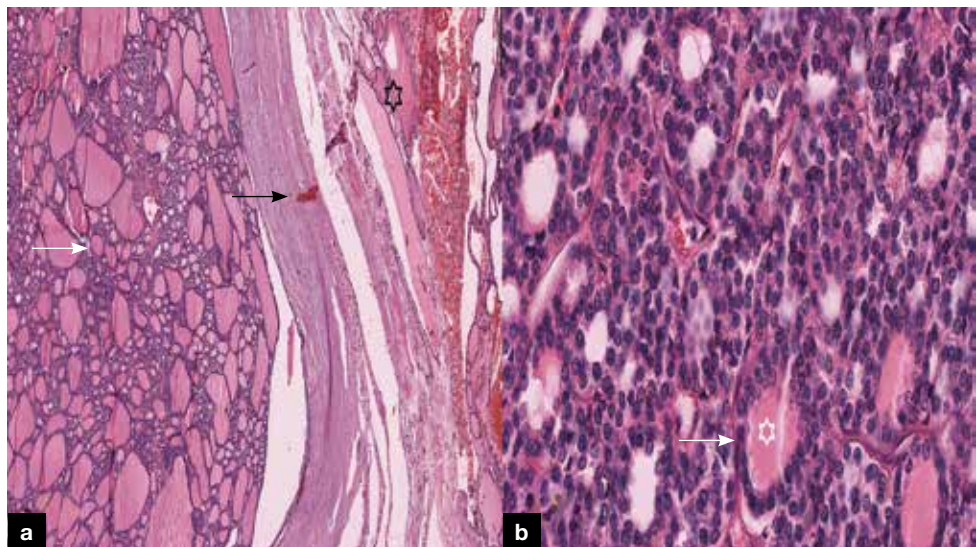


Figure 2. Pathology images. a. Follicular adenoma, well-demarcated from the surrounding thyroid tissue and surrounded by a thick fibrous capsule (indicated by black arrow). Follicles in the capsule are narrow and surrounded by a few follicle epithelial cells. (Microfollicular areas are indicated by the white arrow.) Extensive follicle structures filled with colloid and bleeding areas are observed outside the capsule. Surrounding thyroid tissue is indicated with a black star. b. The cells of the follicular adenoma are follicle epithelial cells (white arrow) with granular chromatin structure and endocrine features. Follicular adenoma consists of microfollicles containing dense eosinophilic colloid (white star). Haematoxylin and eosin, a x 200, b x 400.

sternotomy (Davenport and Malthaner, 2008), but the use of minimally invasive techniques has increased in recent years (Hwang et al, 2016). A sternotomy was used here because the tumour was larger than 7 cm, it extended from the anterior mediastinum to the middle mediastinum, and it was adjacent to the main vascular structures.

Learning points

- Follicular thyroid adenoma can be seen in the mediastinum in adults and should not be forgotten in the differential diagnosis.
- Complete resection is very important in the treatment of mediastinal masses.
- Complete resection will prevent mass recurrence and prevent benign lesions from transforming into malignant lesions, even with a low probability.

Conclusions

This article presents a rare case of a mediastinal mass with proven follicular thyroid adenoma in the mediastinum, with normal thyroid function tests and a normal thyroid gland in the cervical location. Although it is a rare tumour in the mediastinum, follicular thyroid adenoma should be kept in mind in the differential diagnosis. Complete resection is very important for effective treatment, especially as adenomas are likely to become malignant.

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