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Recurrence and metastasis of an AB-type thymoma 16 years post-surgical resection: A case report

Yu Liu; Linlin Deng; Xiangrong Yu*

Department of Radiology, Zhuhai People's Hospital (Zhuhai Hospital Affiliated with Jinan University), Zhuhai, Guangdong, China.

***Corresponding Author: Xiangrong Yu**
Department of Radiology, Zhuhai People's Hospital (Zhuhai Hospital Affiliated with Jinan University), Zhuhai, Guangdong, China.
Tel: +86 135-3658-6162;
Email: yxr00125040@126.com

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Introduction

AB-type thymomas are generally considered non-invasive tumors, with most cases classified as Masaoka stage I or II. These tumors exhibit indolent progression, and instances of recurrence or distant metastasis are exceptionally rare. Here, we present a case of AB-type thymoma that recurred at the original thymectomy site 16 years post-surgery, accompanied by pleural and pulmonary metastases.

Case presentation

A 57-year-old female presented with a palpable mass on the left chest wall. Sixteen years earlier, at the age of 41, she had undergone surgical resection of a thymoma located in the anterior mediastinum. At that time, she was asymptomatic and showed no signs of myasthenia gravis. Upon her current admission, laboratory evaluations were unremarkable. Chest Computed Tomography (CT) revealed a large mass on the left anterior chest wall, irregular masses in the anterior mediastinum, and a round nodule in the lower lobe of the left lung (Figures 1A-1C). Surgical intervention included resection of the thymoma, excision of the chest wall mass, and removal of the pulmonary nodule. Gross examination of the resected specimens demonstrated multiple tumor masses (Figure 1D). Histopathological analysis with hematoxylin-eosin staining revealed spindle cells characteristic of type A thymoma and lymphocytes consistent with type B thymoma (Figures 1E). Certain type A regions exhibited atypical features such as nuclear enlargement, coarse chromatin, and occasional mitotic figures (Figures 1F). Pathological evaluation confirmed that the mediastinal, chest wall, and pulmonary lesions were all AB-type thymoma. The mediastinal lesion was diagnosed as recurrent thymoma, while the chest wall and pulmonary lesions were classified as pleural and lung metastases, respectively. Since the tumors were completely resected, no adjuvant therapy was administered.

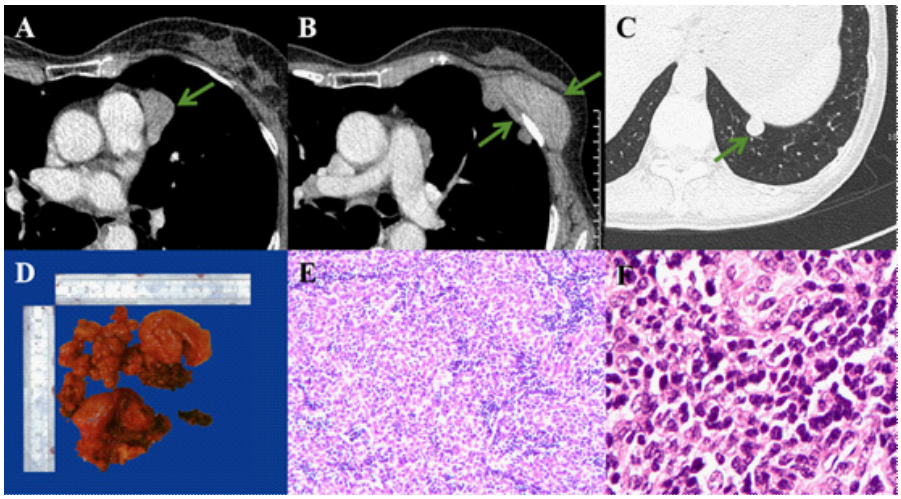

Figure 1: **(A)** Contrast-enhanced CT image of an anterior mediastinal mass, showing significant enhancement. The lesion measures approximately 37 mm × 20 mm × 25 mm. **(B)** Contrast-enhanced CT image of a left anterior chest wall mass, demonstrating marked enhancement. The lesion measures approximately 61 mm × 30 mm × 60 mm. **(C)** CT image of a nodule in the lower lobe of the left lung, measuring approximately 12 mm × 11 mm × 10 mm. **(D)** Gross specimens of multiple lesions resected during surgery. **(E)** Hematoxylin and eosin (HE) staining (×200) showing two distinct components of AB-type thymoma: spindle cells characteristic of type A thymoma and lymphocytes characteristic of type B thymoma. **(F)** High-power view (×400) of the type A component of the thymoma, highlighting regions with tumor atypia.

Discussion/conclusion

Thymomas, originating from thymic epithelial cells, are the most prevalent tumors of the anterior mediastinum and account for 0.2% to 1.5% of all malignancies [1]. According to the WHO classification, thymomas are subdivided into types A, AB, B1, B2, and B3 [2]. AB-type thymomas are typically non-invasive and exhibit almost benign behavior, with the majority of cases classified as Masaoka stage I or II. For stage I thymomas, complete surgical resection is generally curative [3].

Postoperative recurrence or metastasis of AB-type thymomas is rare. Possible mechanisms include incomplete resection of thymic or ectopic thymic tissue and intraoperative tumor cell seeding [4]. Recurrence or metastasis generally manifests within months to a few years post-surgery. This case is notable for the recurrence at the thymectomy site and metastases to the pleura and lung 16 years postoperatively-a remarkably prolonged disease-free interval. Reported recurrence rates for non-invasive thymomas after complete resection range from 0% to 10%, commonly presenting as localized mediastinal recurrence or pleural dissemination [4]. Hematogenous spread is uncommon, with the lungs being the most frequent metastatic site, followed by bones and the liver [5].

In comparison with previously documented cases of metastatic thymoma, this patient had an unusually extended disease-free interval before recurrence and metastasis, ultimately experiencing a poor clinical outcome. Unfortunately, no standardized strategies currently exist to prevent distant metastasis. This case highlights the critical importance of vigilant long-term follow-up for thymoma patients to enable early detection and management of recurrence or metastasis.

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