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Case report

Thymic Dermoid Cyst: A Rare Anterior Mediastinal Mass

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ABSTRACT

Background: Thymic epidermoid cysts are very rare. These masses arise from migration of ectodermal cells into the tissue that does not contain these cells. The imaging findings are non-specific and surgical excision is required to reach definitive diagnosis.

Case description: We describe an asymptomatic woman in her early 40s with an anterior mediastinal mass detected in the spiral chest CT scan for COVID 19. She underwent thymectomy and the histopathological exam revealed a dermoid cyst in thymus gland.

Conclusion: The dermoid cysts etiology is unknown and there are many unproven theories. The clinical sign, symptoms and location of the cyst can be variable. Our case was asymptomatic and the cyst was accidently found in the imaging. The initial diagnosis was a thymoma and at the patient's insistence, cystectomy was performed and pathological findings indicated a thymic dermoid cyst.

Keywords: Dermoid cyst; Histopathology; Mediastinal mass thymus.

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INTRODUCTION

Dermoid cysts are rare, benign cutaneous tumors (1-3), which are often congenital and present at birth (3-6). These cysts can contain all three embryonic layers, and their anomaly is caused by the migration of the ectodermal layer through the lines of skin's merger (3, 7, 8). Dermoid cysts are most commonly found in the ovaries, the testes, retroperitoneum, sacrococcygeal region and on the head, nose, neck as well as the frontal, orbital and oral cavities (3, 4, 9-11). Thymic dermoid cysts are extremely rare, the location in the thymus gland is atypical and imaging findings are nonspecific. They usually have a good prognosis, but to obtain tissue diagnosis and exclude other entities, surgical resection is required (12).

CASE PRESENTATION

A woman in her early 40s was admitted to the hospital for elective thymectomy because of presence of a 25×16 mm hypodense and heterogeneous mass in the thymus gland (Figure 1). The patient was asymptomatic and after taking a spiral chest CT scan for Covid-19, an anterior mediastinal mass was accidentally noticed.

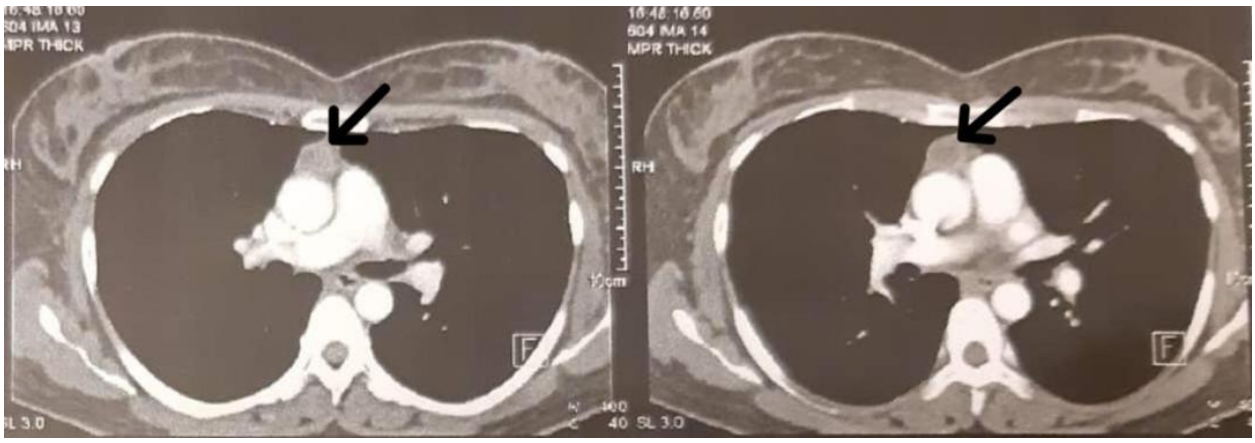

Figure 1. Spiral chest CT scan with IV contrast (Mediastinal view). A 25×16 mm hypodense and heterogeneous mass in the thymus gland (showed by arrow).

She also had a 12 mm pulmonary nodule in the right upper lobe (Figure 2). There was no history of chest trauma and surgery. All tumor markers were evaluated and reported in normal range. Mammography and abdominopelvic cavity CT scan with IV & oral contrast revealed no abnormality. CT guided biopsy of the right pulmonary nodule was negative for malignancy. Because of the patient's appetence for surgery, thymus gland was resected and submitted for histopathological analysis. Although we expected the mass to be a small thymoma, the pathology result indicated dermoid cyst in the thymus gland.

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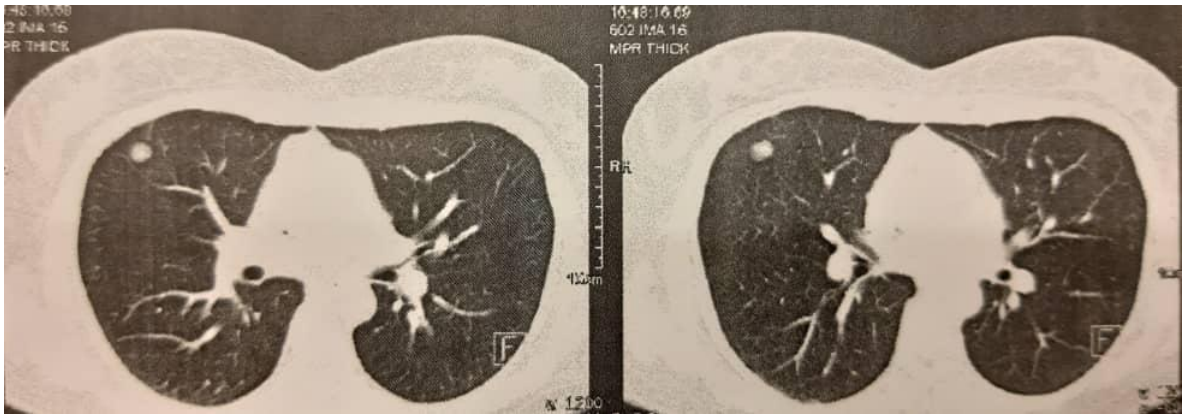

Figure 2. Spiral chest CT scan (Parenchymal view). A 12 mm pulmonary nodule in the right upper lobe.

DISCUSSION

Rare cases of thymic dermoid cysts have been reported, and thymus is an unusual location to form and contain these masses (12). Sequestration and proliferation of epidermal cells originating from ectoderm within the thymic tissue might be the main reason for the formation of these cysts in the thymus (8, 12, 13). It can be a rare differential diagnosis of anterior mediastinal masses such as neoplasm of thymus origin, thymoma, lymphoma and teratoma (12). Because of the small size and slow growing nature, the imaging findings are nonspecific and misleading (2, 12). There is no imaging modality to help toward a definitive diagnosis; therefore, surgical resection may be required (12). A cystic lesion filled with laminated keratin and lined by stratified squamous epithelium with granular layer is the pathological description for a dermoid cyst.

CONCLUSION

The dermoid cyst etiology is unknown and there are many unproven theories. The clinical sign, symptoms and location can be variable. Our patient was asymptomatic and the cyst was accidently found with imaging. The initial diagnosis was a thymoma and at the patient's insistence, cystectomy was performed and pathological findings indicated dermoid cyst.

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DECLARATIONS

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Not applicable.

Ethics approvals and consent to participate

Consent was obtained from the patient after ensuring the confidentially of personal information.

Conflict of interest

The authors declare that there is no conflict of interest regarding publication of this article.

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