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Primary Thymic Adenoid Cystic Carcinoma Mimicking a Teratoma: A Case Report

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ABSTRACT

Adenoid cystic carcinoma is a malignant tumor usually located in the salivary glands. We report a case of primary adenoid cystic carcinoma of the thymus in a 37 year-old woman who was admitted for chronic cough and dyspnea. Computed tomography (CT) scan of the lung showed a cystic and solid anterior mediastinal mass compatible with a teratoma. The patient underwent surgical excision of the mediastinal tumor. Histological and immunophenotypic features were characteristic of adenoid cystic carcinoma. Adenoid cystic carcinoma must be differentiated from thymic teratoma. Clinical and radiographic examination should exclude a metastasis to the thymic region from an unusual site of involvement by an adenoid cystic carcinoma. ***(Tanaffos 2008; 7(1): 68-70)***

Key words*: Adenoid cystic carcinoma, Histopathology, Thymus*

INTRODUCTION

Tumors of the thymus are among the rarest neoplasms. Adenoid cystic carcinoma belongs to the non-papillary adenocarcinomas of the thymus. Only a few cases have been reported in the literature. We present a primary adenoid cystic carcinoma of the thymus in a young woman that radiologically mimicked a teratoma.

CASE REPORT

A 37 year-old non-smoker Caucasian woman with no medical or surgical history of relevance was admitted in our unit for a several-month history of chronic cough and dyspnea. Clinical examination showed decubitus wheezing. There was no autoimmune disease and laboratory findings were normal. Chest x-ray showed an anterior mediastinal mass. Chest CT scan revealed an anterior cystic and solid mass in the mediastinum compatible with a teratoma and a pericardial effusion (Figure 1). The positron emission tomography (PET) scan showed a moderate fixation of the mediastinal mass without distant metastasis or mediastinal node. The patient underwent sternotomy. A lobulated and light-tan, firm mass showing adherence to the pericardium was resected together with the adherent patch of pericardium. Histological examination showed a composite tumor with cribriform, tubular and solid

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patterns consisting of epithelial and myoepithelial cells (Figure 2). There was perineural and vascular invasion as well as minimal invasion to the pericardium. Immunohistochemical study revealed positivity for CK 5/6 in the myoepithelial cells and positivity for CK 7 in the epithelial cells. Synaptophysin, chromogranin, N-CAM and TTF1 were negative in the solid pattern. The patient benefited from radiotherapy and chemotherapy after surgery.

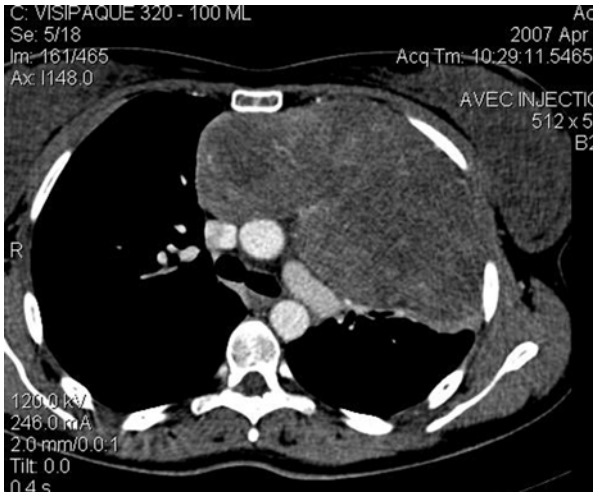

Figure 1. Chest computed tomography scan revealing an anterior necrotic and solid mass of the mediastinum compatible with a teratoma.

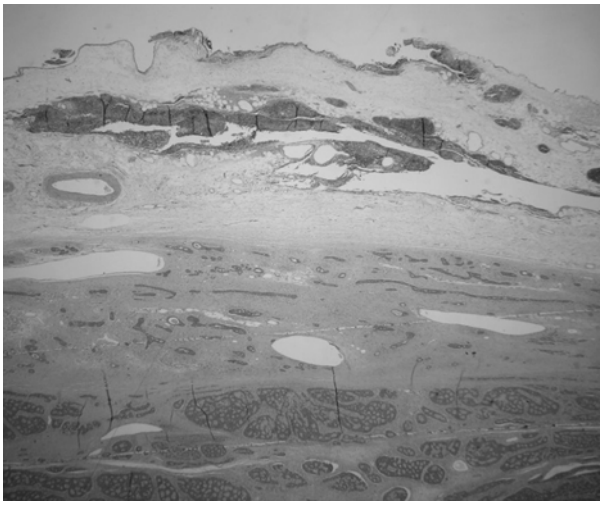

Figure 2. Low magnification showing adenoid cystic carcinoma below and the residual thymus upside (Hematoxylin eosin saffron stain, magnification x40).

DISCUSSION

Tumors of the thymus are among the rarest human neoplasms comprising less than 1 % of all adult cancers (1). Carcinomas of the thymus are now well-recognized as distinctive but rare entities, and several clinico-pathological variants of such neoplasms have been described. These include squamous cell carcinoma, basaloid carcinoma, mucoepidermoid carcinoma, lymphoepithelioma-like carcinoma, sarcomatoid carcinoma, clear-cell carcinoma, papillary adenocarcinoma, carcinoma with t(15;19) translocation, neuroendocrine carcinoma and adenocarcinoma not otherwise specified. Adenoid cystic carcinoma (AdCC) belongs to the non-papillary adenocarcinomas (1). There are only a few reported in the literature (2,3). The etiology of thymic tumors is largely unknown.

AdCC is usually an epithelial salivary neoplasm. The distinction between primary thymic carcinoma and carcinomas that involve the thymic region by metastasis from other sites is difficult, and ultimately must be predicated on detailed clinical and radiographic information.

Patients may present symptoms related to local mass effect (chest pain, respiratory insufficiency because of pericardial or pleural effusions) as well as systemic symptoms such as weight loss or fever. Thymic carcinomas are not associated with myasthenia gravis nor hypogammaglobulinemia, but occasionally with other autoimmune diseases (1).

Thymic carcinomas present as an anterior mediastinal tumor that may involve the adjacent structures like the pericardium in our case. Because of its cystic and solid pattern, AdCC may mimic a teratoma on chest computed tomography scan, as in our case.

Histological features of AdCC are equivalent to the analogous salivary gland carcinoma and may show several architectural patterns. Immunohistochemistry may be performed in the

solid pattern areas so as to exclude a combined thymic epithelial tumor, including neuroendocrine carcinomas. The differential diagnosis includes a thymic carcinoma with hyaline stromal material (4). There are no histopathological prognostic factors of AdCC of the thymus because of the rarity of cases described.

Concerning the clinical management of a patient that presents with a resectable anterior mediastinal mass, resection is indicated. But, if adenoid cystic carcinoma involves the thymic gland, metastasis from other sites, including the mammary glands, the mucous glands of the upper and lower respiratory tract, and the salivary glands, should be dismissed by clinical and radiographic examination.

In our case, the thymic adenoid cystic carcinoma was primary. The histopathological analysis showed perineural and vascular invasion and invasion into the pericardium. Therefore, our patient was given complementary treatment (radiotherapy and chemotherapy) and is alive now 7 months after diagnosis.

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