Available online at www.sciencedirect.com

SciVerse ScienceDirect

Annals of Diagnostic Pathology 16 (2012) 392 – 396

Annals of DIAGNOSTIC PATHOLOGY

Thymomas diagnosed during pregnancy: two cases in young women without paraneoplastic or autoimmune disease

Jaclyn F. Hechtman, MD*, Julie A. Chepovetsky, MD, James A. Strauchen, MD, David E. Burstein, MD, Mary B. Beasley, MD

Department of Pathology, Mount Sinai School of Medicine, New York, NY, USA

Abstract We report 2 cases of thymomas diagnosed during pregnancy. Neither of these 2 patients had paraneoplastic autoimmune conditions or previous neoplasia. The first patient had a 7.3-cm lymphocyte-predominant thymoma with capsular invasion. The second patient was diagnosed through fine needle aspiration biopsy after computed tomography showed multiple mediastinal masses. Although cases of thymoma during pregnancy have been reported, the exact cause has yet to be elucidated. We review the clinical, radiologic, pathologic, and immunohistochemical findings—including those of podoplanin, estrogen receptor, and progesterone receptor—of 2 previously unreported cases, as well as discuss the relationship of malignancy and pregnancy and review the available literature regarding pregnancy and thymoma.

Keywords: Thymoma; Pregnancy; Podoplanin

1. Introduction

Epithelial tumors of the thymus are rare neoplasms, comprising less than 1% of all adult cancers and having an incidence of 1 to 5 cases per million population per year. Most primary thymic epithelial tumors are classified either as thymomas (World Health Organization [WHO] types A, AB, B1, B2, and B3) or as thymic carcinomas (formerly known as WHO type C) [1]. Presenting symptoms often include pain, respiratory insufficiency, superior vena cava syndrome, as well as nonspecific symptoms including fever and weight loss [2]. Using the Masaoka staging system for thymomas, stage I tumors are entirely encapsulated and may invade into, but not through, the capsule. Stage II, III, and IV tumors show capsular invasion or direct invasion into the adjacent pleura, pericardium, or adipose tissue (II); invasion of neighboring organs (III); and pleural/pericardial and/or hematogenous or lymphatic dissemination (IV).

Histopathologic classification of thymomas is descriptive based on the predominant component (epithelial, lymphocytic, and spindle) [1]. Thymomas are different from thymic carcinomas in that thymomas have organotypic histology with a dimorphic population of lymphocytes and epithelial cells that vary in population. The cortical-type epithelial cells characteristic of type B thymomas have bland nuclei with prominent nucleoli and moderate cytoplasm. Spindle (medullary) cells characteristic of type A thymomas have granular chromatin in an elongated nucleus with inconspicuous nucleoli [1,2]. Both types of epithelial cells are keratin positive. The lymphocytic population in all types largely consists of small mature lymphocytes with a minor component of immature T cells. The lymphocytic component may express terminal deoxynucleotidyl transferase (TdT), CD1a, and CD99. In contrast, thymic carcinomas exhibit loss of organotypic growth and are overtly malignant cytologically, frequently showing features of squamous cell carcinoma or lymphoepithelioma-like carcinoma. Thymic carcinomas are also frequently positive for CD5 and CD117, which is not typical of thymoma.

Thymomas occur more commonly in association with conditions including myasthenia gravis, aplastic anemia, systemic lupus erythematous, multiple endocrine neoplasia 1

* Corresponding author. One Gustave L Levy Place, Box 1194, New York, NY 10029, USA. Tel.: +1 (786) 525 5689; fax: +1 (212) 534 7491.
E-mail address: jaclyn.hechtman@mountsinai.org (J.F. Hechtman).

1092-9134/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
doi:10.1016/j.anndiagpath.2011.03.003

syndrome, and hypogammaglobulinemia [2]. Although these tumors are the most common primary tumors of the anterior mediastinum, few cases have been described in pregnancy [3-11].

In these 2 case reports, we describe the histology of a surgically resected thymoma in a pregnant patient and the fine needle aspiration biopsy cytology and pleural fluid cytology of a pregnant woman with a rapidly growing thymoma. Clinical history, radiology, immunohistochemical results, and review of the literature are also discussed.

2. Case reports

2.1. Case 1

The first patient is a 25-year-old woman without significant medical history, no history of autoimmune disease, and a family history of lymphoma. She was admitted with chest pain and shortness of breath. The patient was at 34 weeks gestational age of her first pregnancy. A computed tomography (CT) scan to rule out a pulmonary embolus revealed a 7.3-cm anterior mediastinal mass (Fig. 1A). A CT-guided biopsy and a right anterior mediastinoscopy were nondiagnostic. Labor was induced, and after a successful delivery, the patient underwent a median sternotomy and removal of the mass.

Histopathologic assessment revealed the mass to be a predominantly lymphocytic epithelial thymoma (WHO type B1) with capsular invasion (Masaoka stage II) (Fig. 1B and C). The patient did not receive adjuvant therapy, and she has since undergone regular radiologic imaging and has no residual masses or symptoms 4 years postoperatively.

2.2. Case 2

The second patient is a 34-year-old woman with a medical history of asthma and thalassemia trait, no history of autoimmune disease, and a recent smoking history. She was at 38 weeks gestational age of her first pregnancy. She was admitted with a headache, blurry vision, blood pressure slightly above baseline (131/66 mm Hg), and proteinuria. Her obstetrical history was remarkable for gestational diabetes, controlled by diet. She underwent a cesarean section the next day, indicated for a fetus in a transverse lie position. The patient complained of increasing shortness of breath with wheezing and difficulty talking for all 4 postoperative days.

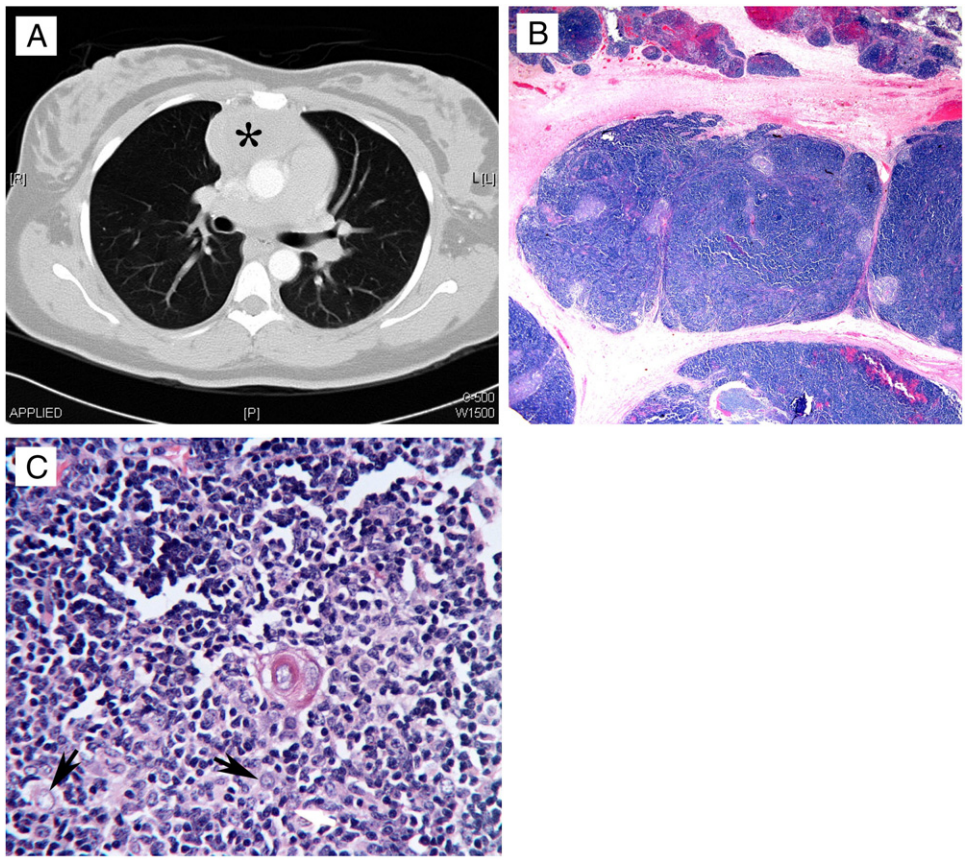

Fig. 1. (A) Computed tomographic scan shows an anterior mediastinal mass (asterisk) measuring 6.4 cm in greatest dimension. (B) Low-power view of thymoma showing discrete tumor lobules separated by connective tissue septa (hematoxylin and eosin, original magnification ×40). (C) High-power view of thymoma showing a dimorphic population of lymphocytes and plump neoplastic epithelial cells with prominent nucleoli (arrows) (hematoxylin and eosin, original magnification ×400).