

Case Report

Ovarian sclerosing stromal tumor in a young woman with ectopic pregnancy: clinical, pathological, and immunohistochemical studies

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Abstract: In this article, we described an ovarian sclerosing stromal tumor (SST) in a young woman with ectopic pregnancy. It is important to distinguish SST from fibroma, thecoma, and lipoid cell tumors clinically and histologically. Several unique histologic features including pseudobubulation, sclerosis and prominent vascularity are clearly reflected at histopathological findings. The SST cells were immunopositive for CD34, Desmin and SMA, and negative for factor VIII-related antigen, CD31, S-100, ER and PR. The patient's postoperative recovery was smooth and she was discharged after 21 days.

Keywords: Ovarian stromal tumor, ectopic pregnancy, immunohistochemistry

Introduction

Ovarian SST is a distinct subtype of ovarian stromal tumor including fibroma, thecoma, and lipoid cell tumors [1]. Ovarian SST may occur during the second and third decades of life with unilateral and well-circumscribed bodies, and most cases are nonspecific symptoms related to an adnexal mass [2]. In most cases, the previously-reported cases of SST are benign and a few confirmed cases have shown hormonal activity [3]. Here, we report a rare case of ovarian sclerosing stromal tumor (SST) in a young woman with ectopic pregnancy.

Case report

A 28-year-old woman, gravida 2, para 0, had normal menstrual, no dysmenorrhea or blood clots. She had surgical operation for ectopic pregnancy and then was hospitalized with vaginal bleeding three years ago. At the time of the first visit, she had an early pregnancy reaction like nausea and a HCG test showed positively after the first week of cessation of menstrua-

tion. Blood pressure was 100/70 mmHg, pulse was 80 beats/min, respiration was 18 beats/min and body temperature was 36.5°C. Physical examination showed normal vulva, vaginal patency and a small amount of dark red bloody secretions. Pelvic examination showed cervical smooth lifting with swing pain, anterior uterus with soft and large, and a cystic mass, tenderness (+) near the right attachment area, left attachment area without palpable abnormality. There was a large mainly cystic mass in vagina by transvaginal ultrasonography. A computed tomography (CT) of the abdomen and the pelvis revealed a 50 mm × 30 mm × 40 mm complex cystic mass near the right attachment area. Laboratory tests revealed an obviously rising serum HCG level (721.9 mIU/ml) and CA 125 level (77.5 U/mL), whereas the routine blood tests and remaining tumor markers were within normal limits. There was no evidence of lymphadenopathy or metastatic cancer. The patient was diagnosed as having an ovarian tumor with a right tubal pregnancy. Partial resection of the right fallopian tube and right ovarian cystecto-

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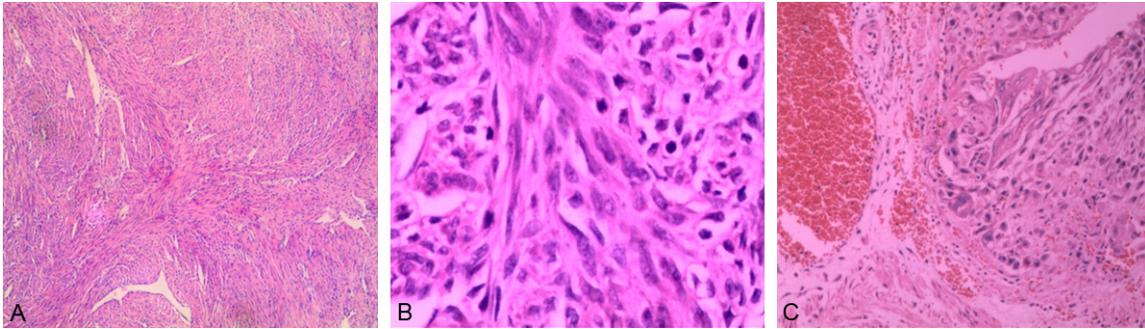


Figure 1. The ovarian mass and fallopian tube were stained with hematoxylin and eosin. A: Cellular pseudolobular pattern separated by edematous fibrous bands and prominent or dilated thin-walled blood vessels in sclerosing stromal tumors (40×). B: Two distinct cell populations of spindle-shaped fibroblasts admixed with polygonal vacuolated cells in sclerosing stromal tumors (200×). C: Trophoblast cells, Villi, and blood clot were visible in fallopian tube.

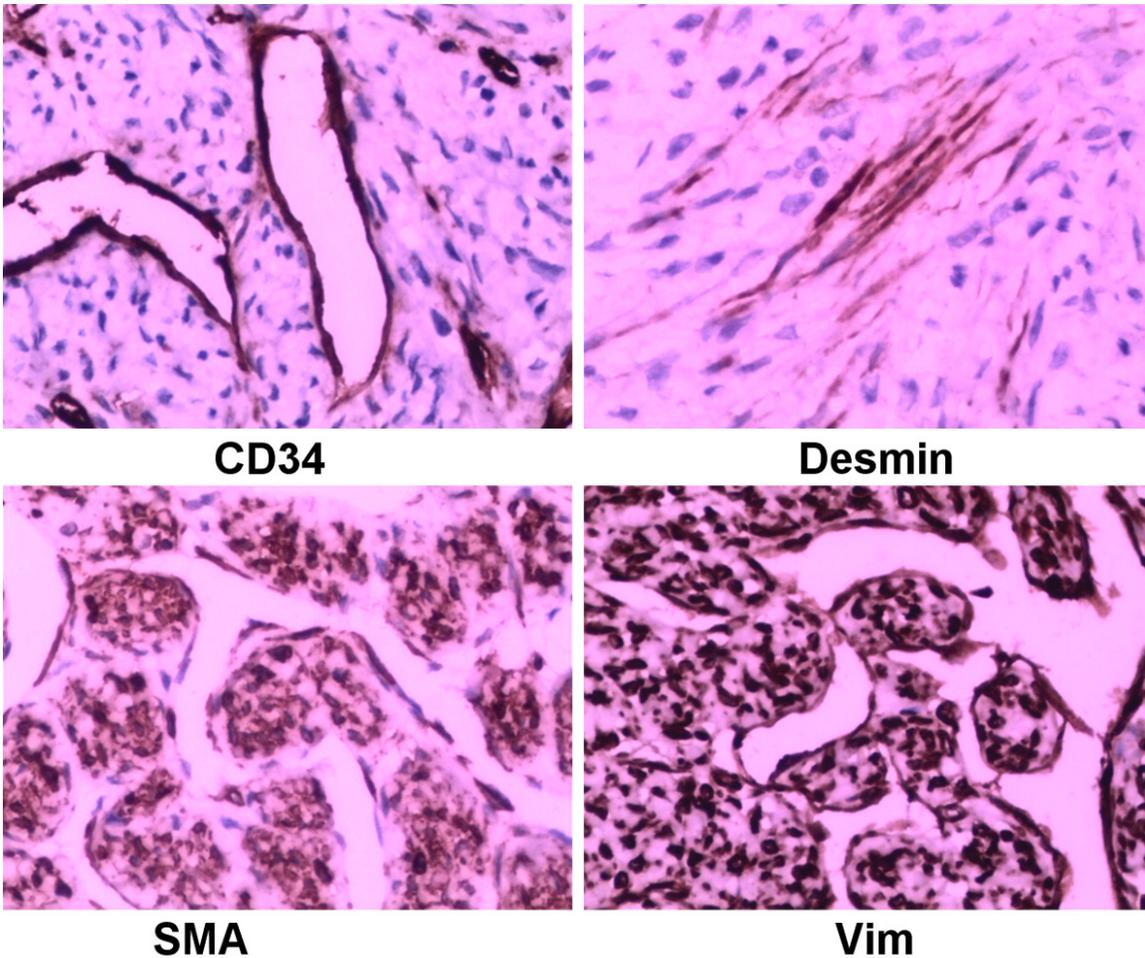


Figure 2. The cells were immunopositive for CD34, desmin, SMA and Vim in sclerosing stromal tumors (200×).

my were carried out. The fresh specimen was sent for the frozen section. Approximately 100 ml hemoperitoneum, a 30 mm × 20 mm × 20 mm purple and blue mass on right fallopian

tube ampulla, and a 60 mm × 50 mm × 50 mm smooth surface tumor with intact membrane on right ovary were seen in the operative. The frozen section was reported as benign, indica-

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tive of sclerosing stromal tumor. The patient's postoperative recovery was smooth. The patient was discharged after 21 days.

Gross findings

A gray red right fallopian tube measured 50 mm × 15 mm × 10 mm in diameter, and on intraluminal of tube appeared dark red blood clot, but no fluff. A bunch of broken organization measured 60 mm × 50 mm × 25 mm in diameter, and on sections, the ovarian mass seen cysts of varying size within the clear liquid, cut mostly solid, gray mixed with sallow.

Histopathological findings

The fallopian tube and ovarian mass were stained with hematoxylin and eosin (**Figure 1**), and were examined using immunohistochemistry. There were massive hemorrhage, numerous necrosis tissues and a small amount of trophoblastic on intraluminal of fallopian tube. There was false lobular structure in tumor site under microscope and lots of collagen fibers between two lobulars. Numerous expansions of small blood vessels were also seen within the nodules. These tumor cells were polygonal, circular or polygonal. Tumor cells had abundant eosinophilic cytoplasm, partly with empty light cytoplasm, and nucleus like signet ring cell located on one side of cells (**Figure 1**).

Immunohistochemical assay findings

The cells lining in the interval of pseudoangiomatous were immunopositive for CD34, Desmin and SMA (**Figure 2**), and negative for factor VIII-related antigen and CD31. S-100 protein, ER and PR were also negative.

Discussion

Ovarian SST was firstly reported by Chalvardjian and Scully in 1973 [3]. It is attributable to theca cell-fibrous tumor subtypes of ovarian sex cord-stromal tumor from WHO-2003 classification. It rarely occurs in young women, the average age is about 25 years old. Recently, the mechanisms of ovarian SST development and the origin of tumor cells are unknown. A lot of speculation of them may derive from ovarian stromal cells [4]. The universal and basic clinical manifestations of patients include irregular menses, pelvic mass, infertility, lower abdominal pain or

abdominal discomfort [3, 4]. In our case, the patient had a usually normal menstruation and accompanied by a history of ectopic pregnancy. It is slightly different from the previously reported. In the majority of previously-reported cases, ovarian SST is usually hormonally inactive and shows no endocrine function, few reports showed ovarian SST secrete steroids to cause an endocrine changes or precocious puberty [5]. In this case, patient had no clinical virilization with normal serum hormone levels but elevated serum CA-125. Tissue immunohistochemical staining found ER, PR were negative expression. This tumor usual occurred in one side of ovary, size form 0.5 to 23.0 cm in diameter, smooth surface, round or oval, cut encapsulated, gray intermingled with sallow, mostly solid, nodular, a small number of solid and cystic cysts vary in size, capsule containing serous or mucous and individual cases visible calcification. Ovarian SST shows obvious histological features. Tumor cells were mainly round or polygonal epithelioid cells interspersed with oval fibroblast-like cells and spindle cells, and been separated by collagen fibers or loose edema to form a lobular structure. Moreover, a variable number of thin-walled blood vessels distributed in stromal [3, 6]. In this patient, histologic features include a pseudolobular pattern with focal areas of sclerosis and two different cell populations of polygonal and spindled cells. Rarely, the polygonal cells in SST evolve into a signet-ring like structure which mimics the Krukenberg tumor; it can be differentiated through immunohistochemical (IHC) tests and positive fat staining [7]. To our knowledge, all SSTs that were described up to date have been benign, and recurrence has not been reported.

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Disclosure of conflict of interest

The authors declare that there are no conflicts of interest.

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