Infarcted Sclerosing Stromal Tumor of the Ovary Mimicking Ovarian Cystadenoma: CT findings

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A 28-year-old female with a clinical history of abdominal pain underwent spiral computed tomography of the abdomen. A large cystic mass with thin wall and minimal septal structure in the pelvic region was seen. The image findings suggested an ovarian cystadenoma. However, histology after surgical resection revealed that the tumor was an infarcted sclerosing stromal tumor of the ovary (SST).

Key words: Computed tomography; Ovary, neoplasms; Stromal tumor

Sclerosing stromal tumor (SST) of the ovary is a rare, benign tumor of stromal origin with less than 100 cases reported in the literature [1]. Imaging patterns have only been described in a few literatures [1-7]. In particular, the CT findings of sclerosing stromal tumor have been depicted as a complex cystic mass with marked peripheral vascularity and thick peripheral rim [1, 5]. We recently encountered a case of ovarian SST with an extremely thin wall and few septa depicted in the CT study, with overall pattern mimicking an ovarian cystadenoma. Such CT pattern of SST has never been described.

CASE REPORT

A 28-year-old female presented with prolonged dysmenorrhea and lower abdominal pain for several days. There was increased serum level of CA 125 (225.84 U/mL; normal < 35.00 U/mL) while the rest of the laboratory data was within normal range. Abdominal ultrasonography showed an 11 × 9.2 cm cystic left adnexal mass with septation but no solid part. Unenhanced CT showed a large, well-defined cystic mass about 9 × 10 × 12 cm in size in the pelvic cavity (Fig. 1a). After intravenous bolus injection of 100 mL of non-ionic iodinated contrast medium, the lesion was seen to have a strikingly thin wall with fairly good enhancement (Fig. 1b). There was no ascites or enlarged lymph node in the para-aortic and pelvic region. The CT impression at that time was ovarian cystadenoma and the patient finally underwent surgical intervention. Laparotomy revealed an 11 × 10 cm left paraovarian tumor with torsion and severe pelvic adhesion. Frozen section of the tumor showed infarction with no evidence of malignancy. Left partial oophrectomy was then performed. Histology showed a stromal tumor with massive hemorrhage and infarction, with small highly cellular areas composed of spindle cells, and abundant blood vessels (Fig. 2a). Infarction and hemorrhage of the inner wall of the

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cystic tumor was also seen (Fig. 2b). Pathological
diagnosis was infarcted sclerosing stromal tumor.

DISCUSSION

Sclerosing stromal tumor (SST) of the ovary is a
rare benign tumor with a prevalence of 6% in ovarian
tumors [3, 8]. It was firstly characterized by
Chalvardjian and Scully in 1973 as a distinct subtype
in the thecoma-fibroma group of ovarian tumors [2, 3,
9]. Clinically, it occurs predominantly in young
women (second and third decades of life in 80% of
cases) [3, 4] who have menstrual irregularities and
pain [1-3]. Ascites may be seen but rare [3]. There
have been numerous reports concerning the micro-
scopic, ultrastructural, and immunohistochemical
findings related to this tumor [3, 10], yet only a few
reports have described imaging findings [1-7].

It has been claimed that the small number of
reports in the radiological literature reflects the fact
that the imaging findings of SST may be so typical as
to allow its preoperative characterization [2], where
both the CT and MRI findings as described by Ihara et
al. [6] and Matsubayashi et al. [3] were so typical that
the dynamic study could demonstrate the early and
strong enhancement of the peripheral tumor tissue and

Figure 1. a. Precontrast axial CT scan of the pelvic cavity shows a large cystic tumor about 9 × 10 × 12 cm in size in
left adnexal region (arrow). Homogeneous central low density content within the lesion is noted. b. Postcontrast axial
CT scan of the pelvic cavity shows a cystic lesion with a very thin wall; thin septal structure (arrow) within the lesion is
also found.

Figure 2. a. Microscopic examination shows a stromal tumor with massive hemorrhage and infarction, and small highly
cellular areas composed of spindle cells and abundant blood vessels (H&E, 20x). b. Infarction and hemorrhage of the
inner wall of the cystic tumor is seen (H&E, 20x).
its centripetal progression. These have been claimed as the crucial findings in differentiating SST from other ovarian stromal tumors [2].

However, we should not forget that a complex, cystic mass with thin wall can be one of the presentations of SST, and the typical dynamic enhancing pattern would not be seen under this condition. In our case, the wall was strikingly thin and the content within the tumor was totally cystic with thin septal structures. Torsion of the tumor was found at laparotomy, and histology showed infarction with massive hemorrhage and necrosis. The CT findings correlated well with pathological findings; the enhancing, extremely thin wall and septal structure of the tumor was very likely resulted from torsion with subsequent infarction and cystic degeneration. The CT examination performed in this case was not a dynamic study. Yet, further depiction of early arterial and delayed phases of the lesion wall would be useless since the wall of the lesion was extremely thin. Although previous literatures had mentioned about the presentation of thin-walled, cystic ovarian mass in such tumors [5, 7], CT findings of such tumor has never been described.

The list of different diagnosis of a cystic pelvic mass is a long one. However, in the ovary, a tumor that manifests as a unilocular or multilocular cystic mass with homogeneous CT attenuation or MR imaging signal intensity of the locules, a thin regular wall or septum, and no endocystic or exocystic vegetations is considered to be a benign serous cystadenoma [4], as is in our case.

In this report, we described a rare presentation of SST mimicking an ovarian cystadenoma. The CT pattern of this case is different from those described in previous literatures. In this setting, it seems that ovarian SST may not present the typical enhancing patterns if the wall structure of the tumor becomes very thin due to torsion with subsequent infarction and cystic degeneration. We believe that when encountering a complex cystic ovarian lesion in a young female, the possibility of ovarian SST should also be included in the differential diagnosis.

REFERENCES
似囊腺瘤之已梗塞卵巢硬化性基质瘤:电脑断层表现

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一位28歲女性因腹痛就診並接受腹部電腦斷層檢查，發現在骨盆腔內有一外壁薄且有少許中隔的巨大囊狀腫塊，影像學表徵類似卵巢囊腺瘤。該腫塊經手術切除後，病理診斷為已梗塞之卵巢硬化性基質瘤。

關鍵詞：電腦斷層；卵巢腫瘤；基質瘤