

Ovarian hemangioma mimicking ovarian malignancy: a rare case report

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Summary

The authors report a case of ovarian hemangioma, a rare tumor of the female genital tract that mimics malignancy. A 23-year-old woman underwent exploratory laparoscopy for a 10-cm right ovarian mass found incidentally. CA125 serum levels were elevated and ascites was noted before surgery. Under suspicion of malignancy, laparoscopic cystectomy and frozen biopsy were performed with the histopathological result of ovarian hemangioma. The authors illustrate an unusual case of this ovarian tumor and its clinicopathological correlation.

Key words: Ovarian hemangioma; Ascites; CA125; Malignancy.

Introduction

The ovary is an organ with rich vascularization, but vascular tumors of the female genital tract and especially of the ovary are very rare [1]. Most reported hemangiomas are asymptomatic and detected incidentally. Ovarian hemangioma is a benign tumor, and surgical removal of the mass is curative [2]. In some cases hemangioma imitates ovarian malignancy by presenting characteristic clinical issues such as ascites or increased tumor markers, creating clinical difficulties in determining further treatment plans. These cancer-mimicking hemangioma cases are very rare, and only six cases have been reported [3-8]. Here, the authors report a case of a 23 year-old woman with ovarian hemangioma presenting with an elevated CA125 level and ascites.

Case Report

A 23-year-old woman presented with a 10-cm cystic mass of the right ovary which was detected incidentally during regular checkup. The patient did not have any symptoms of abdominal pain or discomfort. Routine hematological and biochemical tests were normal. The CA125 level was elevated to 50.65 µg/mL. Ultrasonography revealed an anechoic right ovarian cyst measuring approximately 10 cm. MRI revealed a 8.1×9.1×10.3-cm³ thin-walled solid and cystic mass in the right ovary showing T2 high solid portion with enhancement and no internal fat or calcification (Figure 1A). The patient was transferred to the oncologist for possible cancer risk. The patient underwent exploratory laparoscopy in which a solid hemorrhagic mass confined to the right ovary with a smooth purple surface was noted. A moderate amount of ascites was observed in the pelvic cavity (Figure 1B). No evidence of torsion was noted, and the uterus, left ovary, and both fallopian tubes were normal. A right ovarian cystectomy was performed, and the specimen was sent for histopathology. Intraoperative frozen section diagnosis was a benign neoplasm. Post-

operative recovery was uneventful, and the patient was discharged two days after surgery.

The specimen was a multicystic ovarian cyst and the ovary was 5.0×4.0×2.5cm³. It had a smooth glistening external surface. Upon opening, it showed a sponge-like texture and was filled with red-brown fluid. Microscopically, it consisted of various-sized enlarged, blood-filled vascular channels, walled by a single layer of endothelium. No mitotic activity, atypical cells, or necrosis was observed. Immunohistochemistry analysis revealed that the vascular endothelial markers CD31 and CD34 were positive for the cell linings of the vascular channels, confirming their vascular nature (Figure 1C). The vascular proliferation was positive for WT1 (Figure 1D).

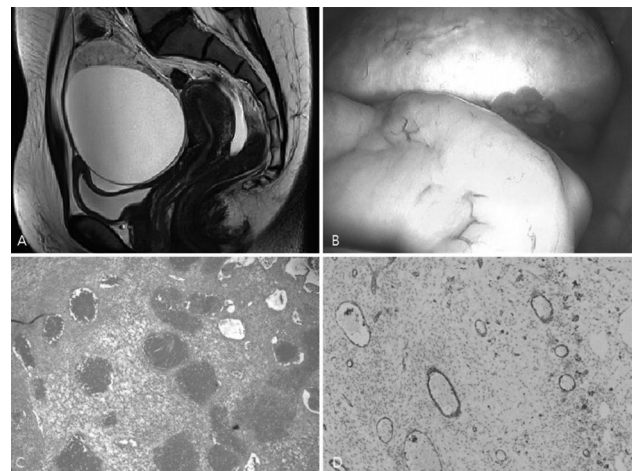


Figure 1. — (A) MRI on T2-weighted image showing right ovarian cystic mass without internal fat or calcification. (B) Microscopy shows numerous vascular channels with single layer of endothelial cells (H&E, ×100). (C) Endothelium lining is positive for CD31. (D) Vascular proliferation is positive for WT1.

Revised manuscript accepted for publication October 26, 2017

Table 1. — Ovarian hemangioma cases with ascites and elevated CA125.

Report	Age	Symptoms	Mass size (cm)	CA125 (U/ml)	Operation title
Paola <i>et al.</i> (2000)[3]	39	Constipation, abdominal distension	3.4	872	Modified RH with BSO with appendectomy with partial omentectomy with PLND
Kaneta <i>et al.</i> (2003)[4]	64	Dyspnea	3	390.8	Total hysterectomy with BSO with partial omentectomy
Safa <i>et al.</i> (2016)[5]	60	Shortness of breath, abdominal distension and pain	6.2	2032	TAH with BSO with omentectomy with PLND
Erdemoqlu <i>et al.</i> (2006)[6]	57	Abdominal distension	6	344	Laparotomy
Yamawaki <i>et al.</i> (1996)[7]	62	Abdominal distension	8.5	456	Open BSO
Abu <i>et al.</i> (2006)[8]	48	Abdominal distension	7	441	TAH with BSO with infracolic omentectomy

RH: radical hysterectomy; BSO: bilateral salpingo-oophorectomy; TAH: total abdominal hysterectomy; PLND: pelvic lymph node dissection.

Discussion

Hemangioma is an unusual type of tumor found in the female genital tract. Abnormal vascular channel development caused by a failure in vascular formation, especially in the canalizing process, is considered the cause of hemangioma formation. Pathologically, there are two types of hemangioma: cavernous and capillary [9]. The difference between the two types is mainly the size of lesional blood vessels. Capillary hemangioma consists of normal-sized capillaries while the cavernous type has larger channels. The cavernous type of ovarian hemangioma has been dominantly reported, but the capillary type and mixed type have also been reported. The size of ovarian hemangioma varies from less than 1 cm to over 20 cm. The ages of reported patients are also widely variable, from newborn to 81-years-old [9].

Symptom manifestation is uncommon in ovarian hemangioma. They are mostly encountered incidentally at operation or during regular checkup. As the mass size grows, however, some clinical issues can present, including acute abdomen with ovarian torsion or massive ascites. Several cases of ovarian hemangioma with calcification, pleural effusion, ascites, hormonal imbalance, and co-occurrence with malignancy have been reported [10-13].

A few cases of cancer mimicking ovarian hemangioma that presented with massive ascites and elevated serum CA125 levels have been reported (Table 1) [3-8]. Kaneta *et al.* reported an ovarian hemangioma case presenting as Pseudo-Meigs' syndrome with elevated CA125, resulting in a difficult diagnosis on a cancer mimicking case. The etiology of ascites in ovarian hemangioma is unknown. Gehrig *et al.* have proposed that abnormal vascular pattern, vascular and lymphatic disruption, peritoneal irritation, and fluid loss from the mass surface could result in ascites [3].

Imaging studies may suggest some clues in diagnosing ovarian hemangioma, and MRI is better than CT for this purpose. Even with MRI studies, preoperative diagnosis of ovarian hemangioma remains difficult [7]. In this case,

MRI was performed and ruled out struma ovarii. The differential diagnosis was epithelial tumor (e.g., Brenner tumor) and sex cord tumor (e.g., granulosa cell tumor). There are some cases in which the ovarian hemangioma was misdiagnosed and underwent unnecessary wide-range surgery [3-5]. Physicians should consider that benign neoplasms such as ovarian hemangioma can also present with elevated serum CA125 and ascites.

Considering its rareness and difficult diagnosis, the final diagnosis of ovarian hemangioma eventually depends on the histopathology. The mass must be surgically removed, and an intraoperative frozen section is essential for ruling out malignancy and avoiding unnecessary radical surgery. During surgery, nearby organs (e.g., uterus, contralateral ovary) must be thoroughly evaluated for possible malignancy since ovarian hemangioma may co-exist with gynecologic malignancies [10-12].

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