



Case Report

Endometriosis-Associated Massive Hemorrhagic Ascites Mimicking Ovarian Malignancy: A Case Report

So Yeon Kim, Nak Woo Lee*

Department of Obstetrics and Gynecology, Korea University College of Medicine, Korea University Ansan Hospital, Gyeonggi, Korea

***Corresponding author:** Nak Woo Lee, Department of Obstetrics and Gynecology, Korea University College of Medicine, Korea University Ansan Hospital, Gyeonggi, Korea

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Abstract

There are many causes of ascites, with the most common being cirrhosis, and the second most common being malignancy. Ascites is a rare presentation of endometriosis, and increased awareness will help clinicians diagnose and treat patients. We report a case of a 39-year-old woman who presented with massive ascites and elevated CA-125 levels, which misled us to consider malignancy. When we performed diagnostic laparoscopy, we found 3500 mL of blood colored ascites and a 2 cm-sized thick solid retroperitoneal mass in the cul-de-sac, which was later confirmed as endometriosis. The patient was treated with dienogest, with no recurrence after 9 months of follow-up. Due to the possibility that rare entities of endometriosis could cause severe complications and misdiagnosis in patients, clinicians should consider endometriosis during diagnostic work-up in patients presenting with massive ascites.

Keywords: Ascites, Endometriosis, Pelvic endometriosis

Introduction

Ascites is an accumulation of peritoneal fluid caused by changes in vascular permeability [1]. Massive ascites can develop when various pathological conditions exist, such as cirrhosis or malignancy [2]. When women present with massive ascites, clinicians may think of pelvic or peritoneal tuberculosis, ovarian hyperstimulation syndrome, and Meigs syndrome [1]. However, most clinicians are unaware that endometriosis is a rare phenomenon responsible for massive ascites.

Endometriosis is a relatively common disease that affects up to 10% of women [2]. Over the last two decades, studies have found that this complex disease is an estrogen-dependent chronic inflammatory process [3]. Inflammation can cause ascites by an exudative mechanism, but the exact pathophysiology of ascites in endometriosis is unknown [4].

We report a case of a 39-year-old woman with massive ascites and elevated CA-125 levels. As endometriosis-related massive ascites is rarely encountered, awareness of this will help clinicians in making differential diagnoses [5].

Case Report

A 39-year-old primiparous Korean female presented with abdominal distension for 1 month. She had undergone laparoscopic myomectomy 7 years previously, and had suffered from dysmenorrhea for 6 years, which had become worse recently. There was no remarkable medical or family history, and physical examination showed no abnormalities other than positive shifting dullness.

An ultrasound scan of the abdomen and pelvis revealed massive ascites and multiple small myomas, and there was no evidence of adnexal or pelvic nodes (Figure 1) An abdominal contrast computed tomography scan also showed a large amount of free fluid and fibroids on the uterus.



Figure 1: Sonographic finding of patient with massive ascites.

Blood tests were requested, and results revealed a hemoglobin level of 12.7 g/dL, and mildly elevated Cancer Antigen-125 (CA-125: 65.1 U/mL). Paracentesis was performed, and dark bloody fluid was aspirated. Laboratory analysis revealed that the fluid was a sterile exudate, had an RBC count of more than 10,000/ μ L, and was negative for malignancy.

For diagnostic purposes, laparoscopic surgical exploration was required. During laparoscopy, we found 3.5 L of hemorrhagic ascites with severe adhesions between the uterine posterior body and colon serosa. In the cul-de-sac, there was a 2 cm-sized thick solid retroperitoneal mass, and on frozen biopsy, a number of hemosiderin-laden macrophages were found and eventually confirmed as endometriosis (Figure 2). There were multiple small papillary nodules on the fimbria of the right salpinx, and we performed right salpingectomy and right ovarian wedge resection, which were later pathologically confirmed as a paratubal cyst. The other organs were grossly normal. After surgery, the patient received 9 months of dienogest, and at the 9-month follow-up, she was asymptomatic.

Discussion

Endometriosis is an inflammatory disease characterized by chronic pelvic pain, pain during intercourse, and infertility [3]. An estimated 5%–10% of reproductive-age women suffer from endometriosis [3]. Pelvic endometriosis involves pelvic peritoneal surfaces, subperitoneal fat, rectovaginal space and ovaries, and may also involve the bladder, bowel, ureters, etc. [3]. Retrograde travel of endometrial tissue is a well-known hypothesis of endometriosis and explains the characteristics of estrogen-dependent chronic inflammatory process in this disease [3].



Figure 2: Operative finding of thick solid mass in the patient's C-D-S.

Hemorrhagic ascites is a rare entity of endometriosis, and was first described by Brew in 1958 [6]. Only 63 cases have been reported since. The pathophysiology of hemorrhagic ascites is suggested to be similar to that of Meigs syndrome, but the exact mechanism is not known [4]. Some theories state that the rupture of endometriotic cysts results in peritoneal irritation and production of a reactive exudative fluid [2]. However, this suggestion is insufficient because endometriomas have been found in only 65% of cases [4], and in this case, both ovaries were normal. Another hypothesis suggests that endometrial implants stimulate peritoneal cell differentiation and produce inflammatory substances such as metalloproteinases, cytokines, prostaglandins and growth factors, and angiogenesis, that cause sterile exudates [3-6]. Pelvic endometriosis usually causes only a slight increase in peritoneal fluid, but ascites associated with endometriosis is usually massive [1]. However, most cases of endometriosis-associated ascites show advanced disease and extensive adhesions [2]. In these cases with characteristics of widespread disease, endometriosis-related ascites has a high risk of recurrence and there is a possibility of hidden endometriotic spots that can lead to large amounts of ascites.

The gold standard for the diagnosis of endometriosis is surgical intervention [1]. In particular, in the case of endometriosis with massive ascites, most clinicians would perform surgical procedures to exclude other clinical entities that cause ascites. Since endometriosis is a disease that occurs in women of reproductive age and 82.0% of patients with endometriosis-related ascites were nulliparous [2], surgical diagnosis and treatment should be performed carefully. Pleural effusion was also diagnosed in 40% of patients with endometriosis-associated ascites [2]. Therefore, patients with massive ascites in endometriosis should be evaluated for the possibility of pleural effusion.

When the diagnosis is confirmed, the management of endometriosis-associated ascites is not very different from the treatment of endometriosis. Since estrogen plays a key role in endometriosis, hormonal therapies such as progestins, GnRH analogues, oral contraceptives, and aromatase inhibitors are generally used [3]. In our case, the patient was treated with dienogest for 9 months, and full remission has been maintained. Endometriosis associated with ascites mostly refers to an advanced disease with a high recurrence rate [2]. Therefore, it is important to have a long follow-up period and close monitoring of the patient's symptoms.

Conclusion

When a patient with ascites visits the clinic, clinicians will consider liver cirrhosis, malignancy, and peritoneal tuberculosis as differential diagnoses [7]. As in our case, if the CA-125 level is high with massive ascites, gynecologists will be more suspicious of malignancy. However, if gynecologists know that endometriosis also causes ascites as in this case, it will help in diagnosing patients. In addition, paracentesis for symptom relief will provide further hints by the presence of bloody sterile exudate. In conclusion, gynecologists should consider endometriosis when massive hemorrhagic ascites occur in women of reproductive age.

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