

# Prevalence of acute hemoperitoneum in patients with endometriotic ovarian cysts: a 7-year retrospective study

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## Summary

**Introduction:** Endometriosis is a quite common condition in women of reproductive age. The purpose of this study is to delineate the association between hemoperitoneum and endometriosis. **Materials & Methods:** The records of all patients with endometriotic ovarian cysts treated at the 3<sup>rd</sup> Department of Obstetrics and Gynecology of the University of Athens and at "Lito" Maternity Hospital of Athens from 2000 through 2007 were reviewed. **Results:** During this 7-year period 720 women underwent surgery due to endometriotic ovarian cysts. The average age was 40.9 years (range: 17-70). The median diameter of the cysts was 4.49 cm and 59% were located in the right ovary. Hemoperitoneum was identified in 16 (2.22%) of them. The average age of these women was 28.5 years (range: 22-44). Ten (62.5%) of these women presented with acute and strong abdominal pain and moderate signs of cardiovascular shock. The rest presented with abdominal pain and distension worsening at the onset of menses, nausea and/or vomiting and hemorrhagic fluid in the pelvis. Ultrasound examination was performed in all women and afterwards they underwent laparoscopy to identify the source of bleeding. In all cases a ruptured endometriotic cyst was found. In 68.8% (11/16) the ruptured cyst was located in the left ovary and the rest (31.2%) in the right. A thorough examination did not reveal any other sources of bleeding. No operative complications were observed. **Discussion:** The simultaneous occurrence of ascites and endometriosis is rare. A physician, though, must always take into consideration endometriosis in the differential diagnosis of ascites and acute abdominal pain or pelvic mass.

**Key words:** Hemoperitoneum; Endometriosis; Ovarian cysts.

## Introduction

Endometriosis is a quite common condition in women of reproductive age. The prevalence is calculated as 3-10% in the general population and 25-35% in women with infertility problems. Characteristic but not occlusive symptoms of endometriosis include dysmenorrhea, dyspareunia, and chronic pelvic pain [1]. Ascites when emerging in a woman raises the suspicion of a malignancy rather than any other pathology. Despite that, there have been several reports of endometriosis causing massive hemoperitoneum [2, 3]. Purpose of this study is to delineate the association between hemoperitoneum and endometriosis and in particular how often these co-exist.

## Materials & Methods

The records of all patients with endometriotic ovarian cysts treated at the 3<sup>rd</sup> Department of Obstetrics and Gynecology of the University of Athens and at "Lito" Maternity Hospital of Athens from 2000 through 2007 were reviewed. In all cases endometriotic ovarian cysts were diagnosed based on ultrasound (US) findings and clinical examination. Seven hundred and twenty women were included in the study after reviewing the age, main symptoms at admission, histologic examination, location of the cysts, bilaterality of the cysts and the diameter of the cyst.

## Results

During this 7-year period 720 women underwent surgery due to endometriotic ovarian cysts. The average age was 40.9 years (range: 17-70). The median diameter of the cysts was 4.49 cm and 59% were located in the right ovary. Hemoperitoneum was identified in 16 (2.22%) of them. The average age of these women was 28.5 years (range: 22-44). Ten (62.5%) of these women presented with acute and strong abdominal pain and moderate signs of cardiovascular shock. The rest presented with abdominal pain and distension worsening at the onset of menses, nausea and/or vomiting and hemorrhagic fluid in the pelvis. US examination was performed in all women and afterwards they underwent laparoscopy to identify the source of bleeding. In all cases a ruptured endometriotic cyst was found. In 68.8% (11/16) the ruptured cyst was located in the left ovary and the rest (31.2%) in the right. A thorough examination did not reveal any other sources of bleeding. No operative complications were observed.

## Discussion

The simultaneous occurrence of ascites and endometriosis is rare. The first case was reported in 1954 by Brews [4]. It has been suggested that rupture of endometrial cysts into the peritoneal cavity can lead to the formation of ascites and dense adhesions [5]. Blood and endometrial cells irritate serosal surfaces resulting in ascites. As far as the rare cases of endometriosis co-exist-

Table 1. — Characteristics of women with only endometriotic cysts in comparison to the cysts with hemoperitoneum as well.

	Endometriotic ovarian cysts	Endometriotic ovarian cysts and hemoperitoneum	p
No.	720	16	
Age	40.9 (17-70)	28.5 (22-44)	< 0.05
Ovary implicated	R: 59%	R: 31.2%	< 0.05

R: right.

ing with ascites and bloody pleural effusion, transdiaphragmatic lymphatic transport allows spread of ascitic fluid into the pleural cavity as seen in Meig's syndrome [6]. It has to be noted though that ascites has also been found in extensive endometriosis without rupture of chocolate cysts. The last decade it has been shown that endometriosis has the ability to infiltrate the bladder wall, bowel and uterosacral ligaments [7]. There are a few case reports of endometriosis with massive hemoperitoneum where bleeding is caused by endometriotic lesions in the fallopian tube [8], the peritoneal wall [9, 10] and by infiltration of vessels covering the uterine wall in pregnancies complicated by endometriosis [11]. Especially for the last case it has been shown that endometriotic lesions decidualize and enlarge during the first trimester, and later in pregnancy shrink due to decidual necrosis and involution [12].

In most cases of endometriosis complicated by hemoperitoneum it is quite difficult to locate the original bleeding site. Most of these women present at the outpatient department of a surgery clinic that usually is not as familiar as a gynecologic clinic with the condition of endometriosis. Also, many of these women present with acute abdominal pain and signs of cardiovascular shock; therefore they usually undergo laparotomy and diagnosis is set during surgery. The problem is that trauma due to blunt dissection, manual exploration, retraction and packing of the bowel creates many other sites of bleeding, making exploration of the original site rather difficult. In all the cases described in our series we performed laparoscopy to explore the pelvis and surgical trauma was minimal. In all cases after aspirating blood and clots from peritoneal cavity we entered into the endometriotic ovarian cyst and aspirated the chocolate-like material. After that in two-thirds of the cases clots were observed at the bottom of the cavity of the cyst, and in that way there were no doubts about the origin of the bleeding. In the remaining cases no clots were observed, but the presence of a ruptured chocolate cyst along with the absence of any other obvious sites of bleeding determined with certainty the original site of bleeding.

According to the medical literature, patients with endometriosis and massive ascites in most cases present initially with abdominal distension, pain, anorexia, nausea and other mild symptoms. Significant weight loss may also be observed and in combination with identification of adnexal masses in US examination pelvic malignancy may be the initial diagnosis [13]. At this point the importance of personal history should be emphasized.

Most of these women describe progressive dysmenorrhea, and exacerbation of symptoms coincides with onset of menses and of course all of them were of reproductive age.

A physician must always take into consideration endometriosis in the differential diagnosis of ascites and acute abdominal pain or pelvic mass. Definitive therapy in any case is mostly surgical and is targeted to stop mass bleeding and dissect as many endometriotic lesions as possible. This approach may be at the cost of inflicting fertility on a nulliparous woman, illustrating the need to consider endometriosis preoperatively as a possible diagnosis in a woman of reproductive age. Ascites has been suppressed with hormonal therapy and this is a quite promising solution, especially in women wishing to preserve their fertility [14].

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