

Prevalence of severe pelvic inflammatory disease and endometriotic ovarian cysts: a 7-year retrospective study

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Summary

Introduction: The purpose of this study was to delineate the association between endometriosis and pelvic inflammatory disease (PID) and the prevalence of this coexistence. **Materials & Methods:** The records of all patients with endometriotic ovarian cysts treated at the 3rd Department of Obstetrics and Gynecology of the University of Athens and in "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). Median diameter of the cysts was 4.495 cm and 59% were located in the right ovary. PID was identified in 21 (2.9%) cases. The average age of these women was 31 years (range: 21-39). Half of the women presented with fever (10/21; 47.6%). Ultrasound examination was performed in all women, followed by laparoscopy. In 47.6% (10/21) the PID abscess was located in the right ovary and the rest (52.38%) in the left. The mean diameter of the endometriotic cysts in these women was 3.52 cm. Laparoscopy was the treatment of choice in all the women with the exception of five cases, where due to technical difficulties during laparoscopy, a laparotomy was performed. In all the cases with PID, abscesses were evacuated laparoscopically. No operative complications were observed. **Conclusions:** Endometriosis and PID are two conditions that can easily confuse the physician in setting the diagnosis, especially in the situation where they co-exist. In our study we report that the prevalence of PID in women with endometriosis is sufficiently higher than the prevalence in the general population.

Key words: Pelvic inflammatory disease; Endometriosis; Ovarian cysts.

Introduction

One of the most common conditions that a gynecologist has to deal with in women of reproductive age is endometriosis. Endometriosis is present in the 3-10% of the general population and in 25-35% in women with infertility problems [1]. Characteristic but not occlusive symptoms of endometriosis include dysmenorrhea, dyspareunia and chronic pelvic pain. It is obvious that a diagnosis of endometriosis is usually based clearly on symptomatology and a definite diagnosis can only be made during surgery. The above-mentioned symptoms are present in many women, especially in developed Western countries and the differential diagnosis includes irritable bowel syndrome (IRS) and pelvic inflammatory disease (PID). It is quite characteristic that more than one quarter of the population of Great Britain suffers from symptoms as the ones mentioned above and most of the time IRS is implicated [2]. There are a few articles published in the medical literature trying to distinguish these three entities (IRS, PID and endometriosis) that present with similar, common and torturing symptomatology [3], and many of the women visit successively gastroenterologists and gynecologists trying to obtain relief from these annoying symptoms. The purpose of this study was to delineate the association between two gynecologic conditions – PID and endometriosis – and the prevalence of the coexistence.

Materials & Methods

The records of all patients with endometriotic ovarian cysts treated at the 3rd Department of Obstetrics and Gynecology of the University of Athens and in "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). Median diameter of the cysts was 4.495 cm and 59% were located in the right ovary. PID was identified in 21 (2.9%) of the cases. The average age of these women was 31 years (range: 21-39). All the women with PID reported premenstrual exacerbation of pain, forniceal tenderness, while physical examination was painful. Half of the women presented with fever (10/21; 47.6%). The majority of women without PID 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, followed by laparoscopy. In 47.6% (10/21) the PID abscess was located in the right ovary and the rest (52.38%) in the left. Mean diameter of the

Table 1. — Characteristics of women with endometriotic cysts in comparison to women with PID.

	Endometriotic ovarian cysts	Endometriotic ovarian cysts and PID	<i>p</i>
No.	720	21	
Age	40.9 (17-70)	31 (21-39)	< 0.05
Ovary implicated	R: 59%	R: 47.6%	< 0.05
Mean diameter of cysts	4.495 cm	3.52 cm	< 0.05

R: right; PID: Pelvic inflammatory disease.

endometriotic cysts in these women was 3.52 cm (Table 1). Laparoscopy was the treatment of choice in all the women with the exception of five cases, where due to technical difficulties during laparoscopy, a laparotomy was performed. In all the cases with PID, abscesses were evacuated laparoscopically. No operative complications were observed.

Discussion

In women aged less than 25 years 60-80% of PID is caused by sexually transmitted infections (STI), such as gonorrhea and/or Chlamydia plus other commensals and anerobic genital flora [4]. PID can also occur by ascending spread of genital commensals, often following surgical trauma, termination of pregnancy, delivery, oocyte retrieval, and intrauterine device insertion or removal. The minimal criteria for the diagnosis of PID are lower abdominal pain and tenderness, pain elicited on moving the cervix and adnexal tenderness/mass, while fever, dyspareunia, vaginal discharge and white cells on vaginal wet prep are considered as additional but not necessary criteria [3]. Consequently, endometriosis and PID are two conditions that can easily confuse the physician in making the diagnosis, especially in the situation where they co-exist.

In our study we report that the prevalence of PID in women with endometriosis is sufficiently higher than the prevalence in the general population. There are two main theories to explain this higher incidence of PID. The first one is that old blood that accumulates in the peritoneal cavity is an excellent isolated culture media for the bacteria that somehow are found there. Furthermore, the pseudocapsule of the endometriotic cyst along with the chocolate-like material inside it may prevent antibiotic prophylaxis from overcoming the transvaginal bacterial inoculation [5].

In contradiction, some researchers support the idea that the most important factor for the common emergence of

PID in women with endometriosis is the altered immunological responses in these women. There are many articles in the medical literature proving that the immune system of women with endometriosis is dysregulated, stating that this is the main reason that endometriotic cells survive in other tissues [6]. Consequently, it is reasonable to suppose that the altered immune system of women with endometriosis is the main cause for not overcoming the inoculated bacteria.

A subpopulation that appears of interest is women in which severe endometriosis is the major cause of infertility. These women often undergo oocyte retrieval, a procedure that provides a path to the flora of the vagina in the pelvis. There are a number of cases described where after oocyte retrieval in women with severe endometriosis a tuboovarian abscess was formed [5]. Thorough vaginal preparation and avoidance of repeat penetration of the vaginal wall are specifically important in these patients. Close follow-up for signs of late pelvic infection is of utmost importance, while prior treatment of endometriosis before superovulation by aspiration or by operative laparoscopy should be considered. Finally, transabdominal oocyte retrieval under US guidance should be taken into account when planning for IVF in patients with multiple ovarian endometriotic ovarian cysts.

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