Endometrioma increases the risk of antibiotic treatment failure and surgical intervention in patients with pelvic inflammatory disease

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Objective: To evaluate the outcome of pelvic inflammatory disease (PID) in patients with endometriosis with and without ovarian endometrioma.
Design: A retrospective cohort study.
Setting: A single university-affiliated tertiary center.
Patient(s): A total of 116 patients with endometriosis hospitalized because of PID between the years 2011–2021. Fifty-nine patients with an ovarian endometrioma component were compared with 57 patients with endometriosis without endometrioma.
Intervention(s): None.
Main Outcome Measure(s): The primary outcome was severe PID defined as the need for surgical intervention or drainage. Secondary outcomes included tubo-ovarian abscess, number of hospitalization days, a positive cervical bacterial culture or urine sexually trasmitted disease polymerase chain reaction (STD PCR) test, and readmission because of partially treated or relapsing PID.
Result(s): PID in patients with endometrioma was found less likely to respond to antibiotic treatment with increased risk for surgical intervention or drainage compared with endometriosis patients without endometrioma (adjusted odds ratio, 3.5; confidence interval, 1.25–9.87). On admission, patients with endometrioma were older (26.5 vs. 31.0) and less likely to have an intrauterine device (19.3% vs. 5.1%) compared with patients without endometrioma. The rate of the tubo-ovarian abscess (52.5% vs. 19.3%) was significantly higher in patients with endometrioma. Readmission rate, positive bacterial culture, and hospitalization duration were higher in the endometrioma group; however, they did not reach statistical significance. Recent oocyte retrieval and patient's age were not associated with an increased risk of severe PID.
Conclusion(s): Endometrioma patients with PID are less likely to respond to antibiotic treatment and present a higher risk for surgical intervention. (Fertil Steril® 2023;119:1008-15. ©2023 by American Society for Reproductive Medicine.)
El resumen está disponible en Español al final del artículo.

Key Words: Endometriosis, endometrioma, pelvic inflammatory disease, ART

Endometriosis is a chronic disease affecting approximately 10% of women in their reproductive years (1). The disease has different manifestations and may present as superficial peritoneal lesions of varying color, ovarian cysts defined as ovarian endometrioma, or nodules with a depth of penetration exceeding 5 mm, defined as deep infiltrating endometriosis, often accompanied by scarring, fibrosis, and adhesions (2). Numerous studies have shown the dysregulation and changes in the immune system in patients with endometriosis, both locally and systemically, involving a vast number of cell types and cytokines. Some cells, such as proinflammatory T helper 17 cells, have increased activity, whereas others, including T regulatory and natural killer cells, exhibit impaired function (3–6). In effect, inflammatory dysregulation is considered one of the mainstays of endometriosis multifactorial pathogenesis (7).

Acute pelvic inflammatory disease (PID) is more prevalent in patients with endometriosis than in the general population. A retrospective analysis of patients undergoing surgery for PID

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found that endometriosis had a prevalence of 63% among this patient group, significantly higher than that reported in the general population (8). In addition, endometriosis is a risk factor for severe PID resulting in a longer duration of hospitalization and an increased risk of antibiotic failure and surgical interventions (9,10). Previous studies have attempted to identify risk factors for a complicated PID course among patients with endometriosis with conflicting results (11–16). One study showed an association of tubo-ovarian abscess with endometriosis stage III–IV (according to the revised American Society for Reproductive Medicine staging) and nulliparity (11). Several studies have examined the association between severe PID and tubo-ovarian abscess after assisted reproductive technology (ART) treatments, including oocyte retrieval. One study demonstrated a more complicated clinical course of tubo-ovarian abscess after ART compared with non–fertility-associated tubo-ovarian abscess (12). One case series reported rare occurrences of late tubo-ovarian abscess in three patients with endometrioma after oocyte retrieval despite prophylactic antibiotic treatment with cefazoline (13). However, a previous study estimated the risk of severe PID after oocyte retrieval in women with endometrioma to be less than 1% (14). Furthermore, two recent studies suggest that in patients with endometrioma, tubo-ovarian abscess after ART may not be linked to the ART procedure, but rather constitute a sporadic occurrence in endometriosis (15). Moreover, other risk factors including lower genital tract infections and spontaneous rupture of ovarian endometriosis cysts were significantly associated with complicated PID (16).

Our study aimed to assess the role of endometrioma as a risk factor for severe PID among patients with endometriosis. Although all endometriosis subtypes are characterized by immune dysregulation and impaired ability of the immune system to wade off infections, we hypothesized that endometrioma, serving as an ideal culture medium facilitating bacterial growth, could be an independent risk factor for severe PID.

MATERIALS AND METHODS

This was a retrospective cohort study conducted in a tertiary referral center with a designated endometriosis unit. This unit comprised endometriosis surgeons (Y.B., S.C., and E.B.), reproductive endocrinology and infertility specialist (SE), and an endometriosis imaging specialist in ultrasound (US) and pelvic magnetic resonance imaging (MRI) (MZ). All patients hospitalized with symptoms and/or signs suggestive of endometriosis are further referred for follow-up in a designated endometriosis unit. Our cohort group included patients with endometriosis aged 18–48 years, hospitalized in our center with the diagnosis of PID over 10 years (January 2011–August 2021). We first reviewed all electronic medical charts of patients hospitalized for treatment of PID and then crosslinked these patients with the electronic medical charts of our endometriosis unit to define our cohort group.

Patients were divided into two groups according to endometriosis type–those with an ovarian endometrioma (with or without superficial peritoneal or deep infiltrating endometriosis) allocated to the study group and those with nonovarian endometriosis as the control group.

Exposure

In accordance with the Centers for Disease Control and Prevention guidelines (17), PID can be diagnosed on the basis of cervical motion or uterine or adnexal tenderness alone. However, because some endometriosis symptoms may mimic PID, in this study, more specific PID criteria were chosen to avoid the misdiagnosis or confounders of noninfectious causes of pelvic pain. Therefore, we only included patients who had acute pelvic pain, cervical motion, or uterine tenderness combined with at least one of the following criteria: (1) fever $\geq$ 38.0°C, (2) elevated white blood cell count of >11 K/mL, and/or (3) increased C-reactive protein levels of >10 mg/L (normal range, 0–5 mg/L). All patients were admitted and treated with a uniform empiric antibiotic regimen of an intravenous third-generation cephalosporin, intravenous metronidazole, and oral doxycycline. This empiric treatment was chosen as the standard protocol for hospitalized patients with PID in consultation with the Department of Infectious Disease at our institution and did not change the entire study period. Patients who failed to improve or showed clinical deterioration within 48–72 hours despite proper antibiotic treatment were re-evaluated for the need for surgical or drainage intervention.

Endometriosis diagnosis was defined according to several criteria, primarily proven histology in patients who underwent surgery or clear evidence of endometrioma or deep infiltrating endometriosis on the US or pelvic MRI examination performed by one of our specialists (18). In the case of superficial peritoneal endometriosis, the diagnosis is made after an intake and detailed pelvic examination in our endometriosis tertiary center, and only in patients having a prominent clinical course and severe suggestive symptoms together with specific findings on physical examination such as uterosacral ligament tenderness or nodularity, uterine motion tenderness, or a fixed and retroverted uterus.

Exclusion criteria included patients hospitalized with pelvic pain that did not meet our strict PID criteria described above and those with missing data from their medical records. Patients were excluded from the endometrioma group if they did not have a sonographic diagnosis of endometrioma before or after the resolution of the acute PID because endometrioma and tubo-ovarian abscess can often be confused and misinterpreted.

Medical records were reviewed for the following demographic data: age on admission; body mass index (BMI); pre-existing medical conditions including diabetes mellitus, gravidity, parity, previous caesarean delivery, history of infertility, current intrauterine device (IUD) use, and previous endometriosis surgery. Invasive procedures, considered to be risk factors for PID, within 30 days before hospitalization were recorded. This included oocyte retrieval, intrauterine insemination (IUI), embryo transfer, IUD insertion, dilatation and curettage (D&C), and hysteroscopy (diagnostic or surgical).

Outcome

The primary outcome was severe PID, defined as the failure to respond to standard antibiotic treatment and the need for

TABLE 1

Baseline and demographic characteristics of 116 patients with endometriosis hospitalized because of acute pelvic inflammatory disease (PID).

Variable	Non-endometrioma N = 57	Endometrioma N = 59	*P* value
Age (y)[a]	26.5 (19.8–32.0)	31.0 (27.0–35.0)	.02
BMI[a]	20.4 (17.5–22.7)	20.8 (19.5–23.1)	.56
Gravidity	1.0 (0–3)	1.0 (0–2)	.52
Parity	0.0 (0–2)	0.0 (0–1)	.46
Previous cesarean delivery	9.0 (15.8)	14.0 (23.7)	.28
History of infertility	18.0 (31.6)	29.0 (49.2)	.05
IUD present during admission	11.0 (19.3)	3.0 (5.1)	.02
Deep infiltrating endometriosis	12.0 (21.1)	18.0 (30.5)	.24
Previous endometriosis surgery	30.0 (52.6)	34.0 (57.6)	.58

Note: Data presented as N (%), unless otherwise specified. BMI = body mass index, IUD = intrauterine device.
[a] Data presented as median and interquartile range.

Shats. Severe PID in endometrioma patients. Fertil Steril 2023.

surgical intervention or drainage. Secondary outcomes were the presence of a tubo-ovarian abscess, number of hospitalization days, a positive cervical bacterial culture or urine sexually trasmitted disease polymerase chain reaction (STD PCR) test, the diagnosis of sepsis on admission or during hospitalization, and readmission because of partially treated or relapsing PID.

Statistical methods

The normality of the data was tested using the Shapiro-Wilk or Kolmogorov-Smirnov tests. Data are presented as the median and interquartile range (IQR). Comparison between continuous variables was conducted with Student's t-test or Mann-Whitney U test, as appropriate. The chi-square and Fisher's exact tests were used for comparison between categorical variables. Univariate analyses were performed for the chosen outcomes, and significant variables ($P<.05$), and variables with known clinical importance were then entered into logistic regression analyses.

We assessed for correlations among variables using the Pearson correlation test and removed strongly clinically and statistically correlated variables. We then assessed for the goodness of fit using the Hosmer-Lemeshow test. Final logistic regression analyses were used to determine which factors were significantly and independently associated with the chosen outcomes while adjusting for potential confounders. Statistical analyses were conducted using the IBM Statistical Package for the Social Sciences (IBM SPSS v.25; IBM Corporation Inc.). The study was approved by the institutional review board, reference number 8107-21-SMC.

RESULTS

A total of 191 patients with acute PID and the diagnosis of endometriosis were admitted to our institution between January 2011 and August 2021. Sixty-eight patients were excluded from the analysis because they did not meet our strict PID diagnosis criteria determined for this study or were given a different diagnosis during hospitalization. Seven patients were excluded because their endometrioma diagnosis was made for the first time during hospitalization. Finally, 116 patients had documented endometriosis diagnosis and PID, and they defined our cohort. The study group (endometrioma group) included 59 patients with documented endometrioma(s) in US or during surgery. The control group (non-endometrioma group) consisted of all endometriosis patients who had either superficial peritoneal endometriosis, deep infiltrating endometriosis, or a combined manifestation but without endometrioma documentation (n = 57).

TABLE 2

Predisposing risk factors for pelvic inflammatory disease (PID) in 116 patients with endometriosis hospitalized because of acute pelvic inflammatory disease PID[a].

Variable	Non-endometrioma N = 57	Endometrioma N = 59	*P* value
Any kind of prior intervention	19 (33.3)	22 (37.3)	.65
D&C/hysteroscopy	8 (14.0)	3 (5.1)	.12
Embryo transfer/IUI	2 (3.5)	6 (10.2)	.27
Recent IUD insertion	4 (6.9)	0	N/A
Oocyte retrieval	4 (7.0)	12 (20.3)	.03

Note: Data presented as N (%), unless otherwise specified. D&C = dilatation and curettage, IUI = intra uterine insemination, IUD = intra uterine device.
[a] Events within 30-days before PID diagnosis.

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TABLE 3

Hospitalization course of 116 patients with endometriosis hospitalized because of acute pelvic inflammatory disease (PID).

Outcome	Non-endometrioma N = 57	Endometrioma N = 59	*P* value
Antibiotic treatment failure and urgent CT-guided drainage or surgery	6 (10.5)	20 (33.9)	<.01
Tubo-ovarian abscess	11 (19.3)	31 (52.5)	<.001
Readmission rate	6 (10.7)	14 (23.7)	.06
Positive bacterial culture/positive urine STD PCR test	10 (17.5)	19 (32.2)	.06
Hosp. days[a]	3 (2–5)	4 (3–6)	.08

Note: Data presented as N (%), unless otherwise specified. CT = computed tomography; Hosp. = hospitalization; STD PCR = sexually transmitted disease polymerase chain reaction.
[a] Data presented as median and interquartile range.

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Table 1 shows patients' baseline characteristics and demographics. Patients in the study group were older (median, 31.0 vs. 26.5; *P*=.02) and less likely to have an IUD at the time of admission (19.3% vs. 5.1%, *P*=.02) when compared with the control group. Patients in the control group had similar rates of deep infiltrating endometriosis diagnosis (according to imaging or surgery) compared with the study group (21.1% vs. 30.5%, *P*=.2). The groups were comparable with respect to previous surgery (52.6% in the non-endometrioma vs. 57.6% in the endometrioma group). The rates of gravidity, parity, and previous caesarean deliveries were comparable between the groups as detailed in Table 1; however, more patients in the endometrioma group had a history of infertility compared with the non-endometrioma group (49.2% vs. 31.6%, *P*=.05). Body mass index was similar between groups with a median of 20.4 and 20.8 in the non-endometrioma and the endometrioma groups, respectively. Additional medical conditions were documented in 23.7% of patients in the endometrioma group when compared with 12.3% in the non-endometrioma group and were not statistically significant. Among these conditions were mostly mild chronic illnesses, including hypothyroidism, asthma, hypertension, or hypercoagulability disorder, such as protein C deficiency or antiphospholipid syndrome. None of the patients in the study had a diagnosis of diabetes mellitus or received immune-modulating medications.

The rate of patients with a recent risk factor intervention for PID was similar between the groups, as detailed in Table 2. No statistically significant differences were found in the rate of recent D&C, hysteroscopy, embryo transfer, or IUI. Four patients in the control group had a recent IUD insertion procedure compared with no patients in the study group (*P*=ns) and significantly more patients in the study group had a recent oocyte retrieval procedure compared with the control group (20.3% vs. 7.0%, *P*=.03).

Table 3 shows the results for the primary and secondary outcomes. The endometrioma group had an increased risk for surgical intervention or drainage (33.9%) compared with the non-endometrioma group (10.5%, *P*<.01). Additionally, the endometrioma group demonstrated a higher rate of tubo-ovarian abscess (52.5% vs. 19.3%, *P*<.001). A nonsignificant difference between the groups was observed for all other secondary outcomes including readmission because of partially treated or relapsing PID (23.7% vs. 10.7%, *P*=.06), positive bacterial culture or a positive urine STD PCR test (32.2% vs. 17.5%, *P*=.06), as well as longer hospitalization (4 vs. 3 days, *P*=.08). One patient in the endometrioma group presented with severe sepsis on admission compared with no patient in the non-endometrioma group. The patient was 40 years old with known endometriosis, otherwise healthy, and required CT-guided tubo-ovarian abscess drainage and subsequently, because of lack of sufficient improvement, underwent explorative laparoscopy, which revealed an infected endometrioma and multiple pelvic adhesions.

Finally, using multivariate logistic regression analysis (Table 4) for significant variables (*P*<.05, Supplemental Table 1, available online) and variables with known clinical importance, we found that endometrioma significantly increased the risk for surgical intervention or drainage with odds ratio (OR) of 4.36 (confidence interval [CI], 1.60–11.88) and remained an independent risk factor after adjusting for age and recent oocyte retrieval (adjusted OR [aOR], 3.5; CI, 1.25–9.87). Additional logistic regression was performed for the secondary outcome of tubo-ovarian abscess, with similar results, as detailed in Supplemental Table 2 (available online). Endometrioma significantly increased the risk for a tubo-ovarian abscess with an OR of 4.63 (CI, 2.01–10.65) and remained an independent risk factor after adjusting for age and recent oocyte retrieval (aOR, 3.7; CI, 1.6–8.92).

DISCUSSION

Among patients with endometriosis who were hospitalized because of PID, patients with endometrioma had a more than threefold risk for severe PID and failure of conservative antibiotic treatment compared with patients with non-endometrioma.

Approximately one-third of patients with endometrioma who were hospitalized for treatment of PID underwent urgent surgery because of failure of the antibiotics treatment. In addition, 52.5% of patients with endometrioma were diagnosed with tubo-ovarian abscess, a significantly higher figure when compared with the non-endometrioma group (19.3%). Hospital readmission and positive bacterial culture or urine STD PCR occurred more frequently in the endometrioma group; however, these findings were not significantly different.

TABLE 4

Logistic regression analysis for the primary outcome-severe pelvic inflammatory disease (PID)[a].

Characteristic	OR (95% CI)	Adjusted OR (95% CI)
The presence of endometrioma	4.36 (1.60–11.88)	3.5 (1.25–9.87)
Age	1.08 (1.01–1.15)	1.07 (0.99–1.15)
Oocyte retrieval	2.40 (0.78–7.39)	1.9 (0.61–6.65)

Note: CI = confidence interval, OR = odds ratio.
[a] Severe PID is defined as the failure to respond to standard antibiotic treatment and the need for surgical intervention or drainage.

Shats. Severe PID in endometrioma patients. Fertil Steril 2023.

Reed et al. (19), in a study of 119 tubo-ovarian abscess cases, demonstrated a 25% failure rate of conservative treatment for a tubo-ovarian abscess in the general population. In our study, 15 of 31 tubo-ovarian abscess cases in the endometrioma group failed to respond to conservative treatment. This translates to a 48.3% treatment failure rate, almost twice that of the general population. In the control group, three tubo-ovarian abscess cases failed to respond to antibiotic treatment, consisting of 27.2% of tubo-ovarian abscess cases in this group, similar to the general population.

An interesting finding in our study is that oocyte retrieval preceding the acute PID event occurred at higher rates in the endometrioma group, possibly because of the higher rate of infertility in patients with endometrioma, or because of referral bias to a specialty center with both in vitro fertilization and endometriosis units. However, the majority of severe PID cases occurred spontaneously and in the multivariate logistic regression analysis, and oocyte retrieval was not found to be an independent risk factor for severe PID.

Evidence in the literature suggests that patients with endometriosis are prone to a complicated PID course (8,9). However, these studies analyzed all patients with endometriosis as a single entity without distinguishing between the different subtypes. Although the different subtypes are believed to share a common pathogenesis, each one may cause different symptoms and require a different treatment approach. Owing to the specific nature and characteristics of endometrioma, when analyzing the risk of severe PID, a distinction should be made between patients with and without endometrioma.

Previous studies have examined the natural history of PID in patients with endometrioma. One retrospective study of 22 patients with endometrioma and PID found that 27% (n = 6) of patients required surgical intervention, similar to our study, and that a history of an intrauterine or intrapelvic procedure before the onset of PID was more likely to result in emergent surgery (20). In contrast, a recent retrospective analysis of 10 patients with endometrioma found that most PID events occurred spontaneously, and 8 of 10 patients underwent surgical intervention because of failure of conservative treatment (15). Other case reports described the spontaneous occurrence of tubo-ovarian abscesses in patients with endometrioma without preceding invasive interventions (21–24). However, these studies investigated only a small number of cases and did not compare patients with endometrioma with the general population or other endometriosis subtypes.

The finding of severe PID in patients with endometrioma is supported by the evidence of immune dysregulation in all endometriosis subtypes in general, and factors inherent to endometriomas specifically (3–7,25). The accumulation of blood products within the endometrioma serves as an ideal substrate for bacterial growth while the cystic endometrioma wall is fragile and facilitates easy entrance to pathogens (15).

Our findings should guide clinicians in consulting and treating patients with endometriosis who often cope with infertility issues. In our study, 49.2% of patients in the endometrioma group and 31.6% in the non-endometrioma group had documented a history of infertility. A PID event complicated by abscess and the need for surgical intervention significantly increases the risk of complex adhesions and may cause further insult to the ovarian reserve. Therefore, preventive measures should be taken to try and avoid this sequela. Prophylactic antibiotic treatment for certain interventions such as oocyte retrieval in patients with endometrioma is currently recommended by the European Society of Human Reproduction and Embryology (26), and our study results underscore the importance of this recommendation. When clinical suspicion of PID among these patients arises, broad-spectrum antibiotic treatment should be started promptly, and clinicians should be aware of the high potential for conservative treatment failure and prepare for the possibility of surgical intervention.

Nevertheless, the notion that severe PID in patients with endometriosis is usually preceded by an invasive procedure is a paradigm that should be reconsidered according to our study and previous studies with similar results. A total of 75 of 116 (64.6%) patients in our cohort presented with spontaneous PID without any identifiable preceding event, and in contrast to some previous reports, oocyte retrieval was not significantly associated with a severe course of the disease. This is in line with a previous study of 214 retrieval cycles in patients with endometrioma, which reported no events of pelvic abscess after the procedure (14).

Our study has several strengths, mainly the relatively large population size from only one medical center, allowing a comparison of severe PID outcomes, which are usually considered uncommon events. Moreover, because all the patients were hospitalized in the same department, there was no bias in our study related to different management protocols. This was enabled by the 10-year study period and the fact that our center is considered a tertiary center with a large endometriosis multidisciplinary unit. Furthermore, patients admitted to our hospital underwent US evaluation by endometriosis specialized and experienced physicians, thus increasing the sensitivity and specificity of US findings. It should be mentioned that an effort was made to avoid confounding endometrioma appearance in the US with tubo-ovarian abscess and to prevent possible misdiagnosis. This was achieved by determining the primary outcome to be surgical intervention or drainage, which represents clinical significance as opposed to a US finding alone. Additionally, patients with endometrioma were included in the study only

if the endometrioma was evident before or subsequent US examinations and not exclusively during the acute PID event. The fact that all cases were managed in a single center, with a designated endometriosis unit, allowed a comparison between cases including uniform criteria for the diagnosis of endometriosis and antibiotic treatment protocol for all patients during hospitalization.

However, some limitations of our study should be considered. Because our patients' cohort was defined as patients with endometriosis who were hospitalized because of PID and were referred to the endometriosis unit at our center, we cannot estimate the real incidence of PID in the population of patients with endometriosis. Furthermore, the decision to compare uniform diagnosis and treatment protocols from a single center may have led to a selection bias that cannot be ruled out. Additionally, some patients in the endometrioma group in our study had other endometriosis subtypes. The criteria for endometriosis diagnosis in our study did not mandate diagnosis by histology. Recent studies suggest (18,26,27) deep infiltrating endometriosis and endometrioma can be diagnosed by imaging including US or pelvic MRI; however, for superficial peritoneal endometriosis imaging, findings are usually lacking. Therefore, in this study, superficial peritoneal endometriosis was diagnosed on the basis of the clinical course, specific findings on a detailed pelvic examination, and follow-up in a designated endometriosis unit. Although possibly limiting our study results with verification bias because of lower sensitivity and specificity compared with imaging or laparoscopy (27), we believe that these inclusion criteria are suitable for the clinical management of the general endometriosis population, especially when performed by experienced endometriosis specialists, because recent guidelines suggest that histologic proof should no longer be considered as the standard for endometriosis diagnosis (28). The retrospective nature of our study is another limitation and further validation of our results in prospective research is appropriate.

In conclusion, patients with endometrioma are at increased risk for a severe course of PID with more than threefold risk of antibiotic treatment failure and the need for urgent surgical intervention compared with non-endometrioma endometriosis patients. Clinicians should be aware of these findings and consider early drainage in patients with PID and ovarian endometrioma.

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El endometrioma aumenta el riesgo del fallo del tratamiento por antibióticos e intervenciones quirúrgicas en pacientes con enfermedad pélvica inflamatoria.

Objetivo: Evaluar el resultado de la enfermedad pélvica inflamatoria (PID) en pacientes con endometriosis con y sin endometrioma ovárico.

Diseño: Estudio de cohorte retrospectivo.

Lugar: Un único centro terciario afiliado a la universidad.

Paciente(s): Un total de 116 pacientes con endometriosis hospitalizadas a causa de PID entre los años 2011 – 2021. Cincuenta y nueve pacientes con un componente de endometrioma ovárico fueron comparadas con 57 pacientes con endometriosis sin endometrioma.

Intervención(es): Ninguna.

Medida de resultado(s) principal(es): El resultado primario fue PID severa definida por la necesidad de intervención quirúrgica o drenaje. Los resultados secundarios incluyeron abscesos tubo-ovárico, número de días de hospitalización, cultivo por bacterias cervical positivo o la prueba de reacción en cadena de la polimerasa (STD PCR) para enfermedades de transmisión sexual y reingresos por PID parcialmente tratada o recaída.

Resultado(s): Se encontró que la PID en pacientes con endometrioma tenía menos probabilidades de responder al tratamiento con antibiótico con un riesgo alto de intervención quirúrgica o drenaje en comparación a las pacientes con endometriosis y sin endometrioma (relación de probabilidades ajustada, 3.5; intervalo de confianza, 1.25-9.87). En el ingreso, las pacientes con endometrioma tenían más edad (26.5 vs 31.0) y menor probabilidad de tener un dispositivo intrauterino (19.3% vs 5.1%) en comparación con las pacientes sin endometrioma. La tasa de absceso tubo-ovárico (52.5% frente a 19.3%) fue significativamente mayor en las pacientes con endometrioma. La tasa de reingresos, los cultivos bacterianos positivos y la duración de la hospitalización fueron mayores en el grupo con endometrioma; sin embargo, no fue estadísticamente significativo. La recuperación reciente de ovocitos y la edad de las pacientes no fueron asociados con un alto riesgo de PID severa.

Conclusión(es): Las pacientes con endometrioma y PID tienen menor probabilidad de responder al tratamiento por antibióticos y presentan un riesgo alto de intervención quirúrgica.