



Ovaric Abscess: Genesis or Complication?

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ABSTRACT

Introduction: An ovarian abscess is defined as a complex infectious tumor of the adnexa of the uterus, which commonly forms as a sequel of an inflammatory pelvic disease, this disease being potentially fatal. **Objective:** Presentation of a case. **Method:** A 35-year-old female who underwent a vaginal hysterectomy 20 days ago, with clinical evidence of septic shock G II and acute abdomen, was admitted to the operating room for emergency surgery, in the exploratory laparotomy with findings of 800 milliliters of foul-smelling purulent material and ovarian abscess. **Discussion:** in the case of an ovarian abscess with a medical history and an exquisite

physical examination and thus, issue a diagnosis, forced to rule out other pathologies. Surgical treatment is therefore the best recognized option when medical treatment fails in ovarian abscesses, however, cases must be selected and separated from patients with pelvic inflammatory disease, and consequently varies from asymptomatic cases to severe sepsis. Conclusions: Ovarian abscess should be diagnosed correctly and abstained from medical treatment, since like any abscess, its surgical drainage and ablation is a priority, imminent and forceful for a complete cure.

Keywords: Abscess, Ovary, Pelvic inflammatory disease, Hysterectomy, Acute abdomen, Septic shock.

INTRODUCTION

An ovarian abscess is defined as a complex infectious tumor of the appendages of the uterus, which commonly forms as a sequel of pelvic inflammatory disease, this disease being life-threatening. [1] Pelvic inflammatory disease is an acute infection of the upper genital tract affecting the uterus, uterine tubes, and ovaries, and is initiated by a sexually transmitted agent that ascends from the cervix to the pelvis; Chlamydia trachomatis and Neisseria gonorrhoeae (sexually transmitted) have been isolated as the first place in incidence, and less frequently Escherichia coli, Bacteroides fragilis, group A Streptococcus, Staphylococcus (genitourinary tract) and thirdly Haemophilus influenzae and Streptococcus pneumoniae (respiratory pathogens). Transcervical intrauterine manipulations are also a risk factor. [2, 3] Ovarian abscess has been confirmed to be a late complication of pelvic inflammatory disease that has not been treated or detected (due to its chronicity or lack of diagnostic suspicion). [4] The predisposing factors in most patients are: that they are sexually active, of reproductive age, with a history of endometriosis, with the insertion of an IUD or having multiple sexual partners and the history of a previous episode of pelvic infection, among other risk factors that are very similar to those of an inflammatory bowel disease. If the abscess ruptures, it can lead to life-threatening sepsis.[5] They are more frequent in women between 15 and 24 years of age, however they extend until 35 years of age and it should be noted that the incidence of cases of pelvic inflammatory disease that develop ovarian abscesses, which have been reported for decades as the most frequent complication, reaching 17 to 20%, and in 85% of cases it is reaffirmed that they are due to sexually transmitted diseases. [6] On the other hand, ovarian abscesses, uterine, salpinge, unilateral or bilateral, have been described as pathologies secondary to surgical complications, as well as by neoplasms in advanced stages and other intra-abdominal infectious diseases that are actually very vast and varied. [7] It should be noted that the existence of tuberculous ovarian abscess has been reported, which is explained by the fact that the world's population is infected by Mycobacterium tuberculosis in less than a third, since extrapulmonary tuberculosis has a worldwide prevalence of 27% and genital tuberculosis of 9%; of this group, uterine tubes are the main location since their incidence ranges from 95% to 100%. followed by the endometrium which is documented in 50% to 60%, and in third place the ovaries in 20% to 30%. [8] It is necessary to mention that pelvic inflammatory disease of yesteryear and today includes ovarian tube abscess, since the Gainesville staging classifies it into different subdivisions or five stages: stage I is acute endometritis-salpingitis without peritonitis, stage II is salpingitis with peritonitis, stage III is acute salpingitis with superimposed tubal occlusion or ovarian tube abscess, stage IV is where an ovarian tube abscess has ruptured and stage V is a depot category for different etiological agents that can emulate acute salpingitis;

[9] However, it has been deformed or modified depending on what is published or who publishes in the literature. [10, 11]

OBJECTIVE

Presentation of a case and review of the literature.

METHOD

Patient referred from another "Second-level hospital that focuses on reproductive, gynecological, and postmenopausal needs; in the care of cervical, breast and ovarian cancer, among other health problems", [12] in an ambulance to be evaluated by the Surgery service, with the diagnosis of acute abdomen. The patient was a 35-year-old woman weighing 71 kg and measuring 165 cm, with a history of insulin resistance currently being treated with metformin. Surgical history: with inguinal plasty in 1994, graft in the right arm for burn in 1995. Diagnostic laparoscopy in 2012 without pathology. Cesarean delivery in 2019, application of breast implants in 2019. Gyneco-obstetric history: Menarche 10 years. Beginnings of active sexual life: 22 years. Pregnancies: 3 Births: 2. Cesarean sections:1. Abortions: 0. Sexual partners: 1. Contraceptive method: Oral hormonal for 5 years intermittent. Last Rule Date: 1 month ago. Rhythm: 28 days x 11 days, hypermenorrhea and dysmenorrhea. Breastfeeding: Yes. Timely detection of cervical cancer: yes, and normal reporting. He denies allergies and drug addictions. Current condition, she was operated on electively by vaginal hysterectomy without eventualities for medium to small uterine myomatosis 20 days ago prior to her transfer to this hospital unit. After discharge, she presents with incipient abdominal pain of mild intensity for 7 days after discharge from this procedure. Subsequently, it began with semi-liquid to pasty bowel movements with 3 to 4 a day and after 16 days it began with unquantified intermittent fever, asthenia and adynamia, with increased abdominal pain of a colic and oppressive type of predominance in the hypogastrium, as well as in the right iliac fossa with irradiation to the right hypochondrium.

She went to doctors on an outpatient basis and/or with hospitalization, treated with multiple antibiotic and analgesic dosage, without improvement 23 days after hysterectomy, she was brought to be evaluated by Surgery. On physical examination with vital signs: temperature: 38.3°C. Heart rate: 118 x'. Respiratory rate: 26 x'. Blood pressure: 85/ 50 mm Hg. SatO2: 84%. 7" delayed capillary filling. Conscious, calm, cooperative, with episodes of obtundation, with abdominal facies. Pale integuments and incipient cyanosis, dry mucous membranes, head and neck without alterations, cardiopulmonary without involvement. Globose abdomen at the expense of adipose but distended panicle, decreased peristalsis, matte sound to percussion, medium and deep palpation with difficulty in palpating visceromegaly, with peritonism, Von-Blumberg present, with frank peritoneal irritation "abdomen in wood" or frank data of acute abdomen. Rest of the physical examination with no data to comment on.

Laboratories: partial thromboplastin time: 34.3 x'. INR 1.69. Prothrombin time 19.5 x', leukocytosis 17.26 / mm³, neutrophils 87.7 %, hemoglobin 9.71 g/dl, hematocrit 30.75 %, mean corpuscular volume 69.96 x 10⁶ / µl, platelets 438.20 u/l, glucose 93.2 mg/dl, BUN 9.66 mg/dl, urea 20.7 mg/dl, uric acid 3.7 mg/dl, creatinine 0.6 mg/dl, sodium 135.8 meq/l, potassium 3.77 meq/l, Cl 103 meq/l. Albumin 2.8 g/l, total proteins 5.8 g/l, alkaline phosphatase: 119.5 IU/l, lactic dehydrogenase 201.58 IU/l, c-reactive protein 31,610 mg/dl, total bilirubin 2.4 mg/dl. There is no arterial blood gas, x-ray or ultrasound. A simple abdominal

tomography without interpretation was performed, where free fluid was seen in the right parietocolic slide and pelvic hollow, there was no evidence of a cecal appendix and at the level of the pelvic hollow an amorphous structure (tumor) was visualized with irregular but well-defined contours, which presented air pixels and various densities inside. See Figure 1.



Figure 1

With clinical evidence of grade II septic shock and acute abdomen, the patient was admitted to the operating room for emergency surgery, where in the exploratory laparotomy 800 milliliters of foul-smelling purulent material were found, with multiple adhesions peritoneum-epiploic, wall omentum, omentum-intestine, omentum-colon with fibrin tissue and fibrinopurulent cream, with omentum plaster in the pelvic hollow and in the wall at the level of the middle region. retro cecal appendix with normal characteristics, colon with no data of alteration. On revision of the pelvic cavity, an anatomical structure similar to a uterus of semi-soft yellow-whitish consistency of 7 x 9x4 cm was found, this anatomical structure was amorphous, with data of ischemia, hematomas, necrosis and perforation in the anterior and posterior aspect of approximately 8 and 5 mm., with the presence of left fimbria and ovary of 1.5x1 cm. See Figure 2.



Figure 2

The abscessed tumor (uterus vs ovary) and the adjoining structures described were resected (see Figure 3) and an exhaustive surgical lavage of the abdominal cavity was performed. And the vaginal vault is closed by the previous surgery. Her evolution was satisfactory and she was discharged home 5 days later, with subsequent control in the outpatient clinic. The pathology report describes "tissue of 10.5x5x3.5 cm of opaque and unpolished surface of light brown color, when cut of soft consistency, on the cut surface salpinge is identified, concluding an ovary with acute abscessed oophoritis".



Figure 3

DISCUSSION

The clinical presentation of ovarian abscess includes moderate to severe lower abdominal pain with purulent vaginal discharge, abnormal uterine bleeding, and unquantified fever. The pelvic examination often reveals tenderness of the cervix, uterus and adnexa in extreme. In addition, it may present with asthenia, adynamia, nausea, vomiting, an elevated white blood cell counts and, infrequently, present with previously mentioned vaginal symptoms; but prompt and effective medical attention is crucial, because it is complicated even by a state of sepsis or shock [13, 14, 15] The clinical picture is very vague unless you have vaginal symptoms and other pathologies that cause sepsis or even death must be ruled out. The differential diagnosis of an ovarian abscess often includes appendicitis, diverticulitis, inflammatory bowel disease, inflammatory bowel disease, Crohn's disease, toxic colon, ulcerative colitis, ovarian torsion, ectopic pregnancy, ruptured ovarian cyst, pyelonephritis, and cystitis. [16, 17, 18, 19] On the other hand, endometrioma, which acts as an ideal culture medium that facilitates bacterial growth, could be an independent risk factor for severe pelvic inflammatory disease. [20] Xanthogranulomatous oophoritis is mistaken for an ovarian abscess, this condition is very rare because the female genitourinary system is involved, but it is known to infiltrate the endometrium, resulting in xanthogranulomatous endometritis and causing endometrial destruction, pain, and abdominal distension, leading to the same surgery. [21]

In addition to a good medical history with an exquisite physical examination to issue a diagnosis, it is obligatory to rule out other pathologies. It is clear that ultrasound is an operator-dependent study and that the radiologist's interpretation concludes that peritonitis was of

digestive origin due to acute generalized peritonitis, but not due to obstetric causes. Continuous training of health professionals and modernization of the technical-diagnostic platform should be considered. [22, 23] Gynecological emergencies become a diagnostic challenge and that is why having the right technological resources, when ultrasound is normally used as the first-line diagnostic modality, but this is not conclusive, CT scan with contrast is more specific and more sensitive, however, magnetic resonance imaging is even more useful, although the images may alter with breathing and lose specificity. [24] It is worth mentioning that there are patients in whom a malignant neoplasm of the ovary was suspected due to ultrasound and laboratory findings, but it was not until diagnostic laparoscopy that the diagnosis of pelvic inflammatory disease was made. [25]. Although ovarian abscesses due to complicated acute appendicitis have been documented as exceptional cases; however, the experience of the surgeons of this manuscript and thoroughly reviewing the case corroborating in the images of the report, there is no evidence of an ovarian origin as such, since it is only purulent peritonitis due to another etiology. [26] This is explained by its rich anatomy in the vascular sense or blood supply, since the ovary receives a double blood supply, both from the ovarian artery and from the uterine artery. The ovarian artery originates in the abdominal aorta, with a high flow through its irrigation and this makes it a protected structure both in humoral and cellular defense and with a very timely response in antibiotic therapy. [27]

As far as treatment is concerned, hemodynamically stable patients can be treated conservatively with broad-spectrum intravenous antibiotics in pelvic inflammatory disease, however, in ovarian abscess. Antibiotic treatment in ovarian abscesses has been documented successfully, or the option carried out is radiologically guided or interventional drainage of abscesses, clearly associated with antibiotic therapy. And the third alternative is surgery as a last chance. [28] Ultrasound-guided drainage has thus become an effective treatment, with few complications and that can lead to a significant clinical improvement or an efficient and/or effective complete cure. [29, 30] When oral antibiotic treatment is ineffective, surgical drainage of the ovarian abscess is performed and the *Clostridioides difficile* microorganism is isolated and identified in the pus culture. The surgical approach provides a favorable prognosis, playing an important role in the management of ovarian abscesses. [31] In patients with tuberculosis ovarian infection, standard anti-tuberculosis treatment of short duration for 6 months is indicated for isolated disease and, for disseminated disease, 12 months of treatment is recommended. Surgery is reserved for failure of medical treatment and the formation of abscesses. [32] Surgical approaches can be very varied and/or diverse such as conventional surgery, laparoscopic surgery, robotic surgery or transluminal endoscopic surgery through transvaginal natural orifices, in the latter modality surgical conversion is associated with severe pelvic adhesions, bilateral cysts, endometriosis cysts and is seen as an option in ovarian abscesses. [33] Surgical treatment is then the best option recognized when medical treatment fails in ovarian abscesses, however cases must be selected and separated from patients with pelvic inflammatory disease, and consequently varies from asymptomatic cases to severe sepsis, in some the placement of a percutaneous drain can promote efficient control of the source, as is often the case with large ovarian abscesses that do not respond until they are treated surgically. [34, 35]

CONCLUSIONS

There is a wide variety of opinions, options, classifications, diagnostic tools, treatments, in the medical literature of ovarian abscesses; but in reality, there is a high degree of confusion in

specifying or specifying the concepts of pathology, the object of study of this manuscript that is investigated, concluded and built new judgments or precepts, based on type I scientific evidence, that support it.

The ovarian abscess is a little-studied identity and is erroneously included in the so-called Pelvic Inflammatory Disease (it is not an organ or an isolated cavity), which if the term is correct there is no pathophysiological scientific support that gives it validity as a disease.

The computed tomography study with contrast medium is the ideal study or the gold standard, which allows diagnosing with high sensitivity and specificity this disease the ovarian abscess and the surrounding collection(s), in the peritoneum, retroperitoneum, in the entire abdominal cavity and without any limitations.

In surgery, purulent peritonitis, fecal peritonitis and in a state of abdominal sepsis or sepsis séptico, the ovaries, uterine tubes and uterus are not complicated, per se the genital or instrumental infectious etiology of this surgical area is the key to its genesis and not merely a complication of another abdominal disease.

Ovarian abscess must be diagnosed correctly and abstain from medical treatment, since like any abscess its drainage is surgical and its ablation is a priority, imminent and forceful for a complete cure.

Conflict of Interest

The authors declare that they have no conflict of interest.

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