RUPTURED TUBO-OVARIAN ABSCESS: RARE PRESENTATION OF PELVIC INFLAMMATORY DISEASE - A CASE REPORT

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ABSTRACT

Background: Infection of the endometrium, fallopian tubes, ovaries, pelvic peritoneam, and adjacent structures is known as Pelvic Inflammatory Disease (PID). Pelvic inflammatory disease and its consequences are still at epidemic levels, Despite the availability of effective broad-spectrum antibiotics. Tubo-ovarian abscess (TAO) may be difficult to identify since the clinical signs are comparable to those of other pelvic and abdominal illnesses. Case Description: Here we are reporting a case, 34 years nulligravida came to emergency department with acute abdomen, she was a known case of chronic PID, Emergency laparotomy was performed, per operatively ruptured tubo-ovarian

abscess was present. Conclusion: The clinical diagnosis of PID and TAO is similar, imaging evidence from ultrasonography (US) or magnetic resonance (MR) should be used to supplement the clinical diagnosis. Clinical Significance: To avoid complications and resultant emergency surgeries and their consequences, a vigilant eye must be kept to promptly diagnose, and manage PID at the earliest.

KEYWORDS: Tubo- ovarian Abscess, PID, Laparotomy.

INTRODUCTION

Pelvic inflammatory disease (PID) characterised by a group of infection and inflammation of the upper genital tract that includes uterus, fallopian tubes, ovaries, pelvic peritoneum, and surrounding structures. One of the complication of pelvic inflammatory disease is tubo-ovarian abscess that is defined as an inflammatory mass (collection of pus or agglutination of structures) involving the ovary, fallopian tube, and adjacent pelvic organs such as the bowel and bladder (occasionally) that manifests as a tubo-ovarian complex (1). A tubo ovarian abscess is discovered in approximately one-third of hospitalised patients with pelvic inflammatory disease (2). Women of reproductive age group are commonly affected. It can be serious and potentially life-threatening, when associated with sepsis, mortality rate is very high (5-10%) (3). For a better outcome, aggressive medical and/or surgical treatment is required.

CASE DISCUSSION

A 34-year-old married nulligravida presented to the gynaecology OPD with complaints of mucopurulent, foul-smelling discharge per vaginum for two years, with an increase in amount for last two weeks, on and off pain in hypogastrium for one year, with an increase in intensity

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over the last five days, and 1 episode of prolonged and heavy menstrual bleeding. Her vital signs were within normal limits, and an abdominal examination revealed mild tenderness in the hypogastrium. Due to menstruation, the patient refused both a speculum and a vaginal examination. In light of the suspicion of pelvic inflammatory disease, the patient was given analgesics and oral antibiotics, as well as a pelvic ultrasonography. After one week, the patient presented to the emergency department with acute abdomen that was sudden, sharp,

shooting, and was accompanied by two episodes of vomiting. On clinical examination, the patient was afebrile, her blood pressure was 120/80 mmHg and pulse rate of 120 beats per minute. On abdominal examination, there was tenderness and guarding over the hypogastrium and bilateral iliac fossa. A vaginal speculum examination revealed mucopurulent discharge through the os. On digital vaginal examination, the uterus was retroverted, bulky, tender, and non-mobile, and an ill-defined, tender, and firm mass of around 7X5 cm was palpated in the right adnexa with limited mobility. There was also tenderness in the left forniceal region. Ultrasound revealed a bilateral tubo ovarian complex with dimensions of 7.2*3.5*3.4 cm on the right side and 4.9*3.7*3.7 cm on the left side with pyoperitoneum.

Her TLC level was 20,000/cc. The patient was taken up for an emergency laparotomy due to an acute abdomen with pyoperitoneum and symptoms suggestive of systemic inflammatory response syndrome. Approximately 200 cc of pus was discovered in the peritoneal cavity during surgery. The posterior surface of the uterus was found to be densely adhered with bowel loops. A right-sided ovarian mass measuring 6*7 cm was discovered, along with a ruptured pyosalpinx at the uterine cornu (Fig -1). A 5*4 cm left sided pyosalpinx was also present, along with a normal left ovary. A right sided salpingo-oophorectomy was performed, along with a left salpingectomy (Fig -2) and bowel adhesiolysis. The histopathology report revealed that the fallopian tube stroma was densely infiltrated with neutrophils, lymphocytes, and plasma cells, with areas of haemorrhage and necrosis, and that the right ovarian stroma was similarly infiltrated. Pus culture was sterile and free of acid fast bacilli. The patient recovered well after surgery while receiving broad-spectrum antibiotics. However, the patient developed a surgical site infection on the tenth postoperative day and was subjected to skin suturing on the fourteenth postoperative day before being discharged on the seventeenth postoperative day under stable conditions.



Fig. 1: Ruptured right Fallopian Tube at the Cornu with Outpouring of pus



Fig. 2: Specimens of Ruptured right and left Fallopian tubes with right ovarian mass showing areas of necrosis

DISCUSSION

A tubo ovarian abscess is one of the serious complications of pelvic inflammatory disease(PID) and a potentially fatal condition, especially if the abscess ruptures, which happens in about 15% of cases. Risk factors for tubo ovarian abscess are multiple sexual partners, age between 15 - 25 years, a prior history of PID, an earlier age of first intercourse, diabetes, and immune-compromised state. TOAs have also been reported in non-sexually active women (4).

A tubo ovarian abscess can also develop as a result of localised infection caused by uncontrolled bowel inflammation, appendicitis, infections during adnexal surgery etc or, in rare cases it can has hematological spread. The infection appears to originate in the lower genital tract from a sexually transmitted pathogen or from a patient's endogenous flora in the majority of cases. The infection then spreads to the fallopian tubes, destroying both secretory and ciliated cells and causing edema of the tube's infundibulum. As a result of clubbing, ischemia, and necrosis, tubal blockage occurs, contributing to the development of pyosalpinx. If a tubo ovarian abscess goes untreated, as it may in this case due to a long history of discharge per vaginum and abdominal pain following acute symptoms, this uncontrolled tubal infection with associated tissue invasion and destruction produces a copious purulent exudate with gradually increasing tissue edema, eventually causing tissue necrosis.

Tubal structures can adhere to and coalesce with adjacent ovarian tissue (and often adjacent non-genital tract tissues) to form a complex mass, as seen in our case, where the right fallopian tube was cocooned to the right ovary, forming the complex mass. Necrosis within this mass may result in abscess formation which is an good anaerobic media for the growth of numerous anaerobic bacteria previously present in the endogenous pelvic flora (5, 7). Furthermore, a worsening infection can lead to sepsis.

TOAs in the literature have typically been described as polymicrobial, containing a mix of aerobic and anaerobic organisms. Neisseria gonorrhoeae & Chlamydia trachomatis are rarely isolated from TOA abscesses (6). Some evidence shows N. gonorrhoeae facilitates lower genital tract flora invasion of the upper genital tract, thereby indirectly increasing the risk of progressive infection (8). As a result, in all clinically suspected cases of PID, an empirical therapy targeting N. gonorrhoea should be considered in the syndromic management.

Tubo-ovarian abscess has the same classic symptoms as acute PID, including vaginal discharge, lower abdominal pain and fever with chills.(6, 7, 9). However, the presentation of some TOA patients differs from the standard scenario. Patients with TOA (which is not always associated with PID) occasionally present with seemingly unrelated symptoms such as diffuse persistent upper abdominal pain or a change in bowel habits. (10), studied 52 women with PID and discovered that all had a tubo ovarian abscess and had leukocytosis. According to (11), those with a tubo ovarian abscess had a higher white cell count on admission than those with PID who did not have a tubo ovarian abscess; this may raise the suspicion of a tubo ovarian abscess.

A TOA is identified by clinical findings that are confirmed by radiological abnormality. Typically, ultrasound is the first-line imaging study. It can also be used to rule out other pathologies (eg, ovarian cyst,

ectopic pregnancy, degenerating uterine fibroid). A few studies suggest that when compared to ultrasound, CT may have a slight advantage in terms of higher sensitivity to detect a tubo ovarian abscess (9, 12, 13). However, CT imaging is more expensive, exposes patients to more radiation, and can make oral contrast administration difficult in critically ill patients. TOA treatment recommendations differ from PID treatment recommendations, but they can be managed medically according to CDC guidelines (14). If patients treated solely with antibiotics show no improvement or worsening, minimally invasive abscess drainage procedure is recommended. Surgical treatment is recommended for those on antibiotics who are clinically worsening. Antibiotic therapy should be continued alongside these additional interventions.

A TOA rupture is a life-threatening emergency that necessitates immediate surgical intervention (15). Even if there is no evidence of abscess rupture, surgical exploration and treatment are often recommended in any patient with signs of sepsis and a large (7 to 9 cm) abscess. (16, 17, 18). In these emergency situations, laparotomy appears to be the best option (5). Many studies have found high rates of wound infection due to surgical field contamination ("dirty wound") caused by abscess cavity disruption (5, 9,17). On the tenth post-operative day, our patient also developed surgical site infection.

CONCLUSION

Because untreated pelvic inflammatory disease (PID) frequently leads to the development of tubo ovarian abscess, prompt diagnosis and treatment of PID is required. Tubo ovarian abscess is typically a clinical diagnosis confirmed by the discovery of an inflammatory adnexal mass on pelvic imaging. Only direct visualisation of the abscess during an invasive surgical procedure, such as laparoscopy or laparotomy, can provide a definitive diagnosis. Rupture of tubo ovarian abscess is a surgical emergency that can quickly progress to overwhelming sepsis and death if not managed timely.

REFERENCES

- 1. Granberg S, Gjelland K, Ekerhovd E. The management of pelvic abscess. Best practice & research Clinical obstetrics & gynaecology. 2009 Oct 1;23(5):667-78.
- 2. Kairys N, Roepke C. Tubo-ovarian abscess. StatPearls (Internet). 2021 Jul 18.
- 3. Fouks Y, Cohen Y, Tulandi T, et al. Complicated clinical course and poor reproductive outcomes of

women with tubo-ovarian abscess after fertility treatments. Journal of Minimally Invasive Gynecology. 2019 Jan 1;26(1):162-168.

- Gao Y, Qu P, Zhou Y, et al.. Risk factors for the development of tubo-ovarian abscesses in women with ovarian endometriosis: a retrospective matched case-control study. BMC Women's Health. 2021 Dec;21(1):1-6.
- 5. Sweet RL, Gibbs RS. Soft tissue infection and pelvic abscess. Infectious Diseases of the Female Genital Tract. 2009;5:95.
- 6. Landers DV, Sweet RL. Tubo-ovarian abscess: contemporary approach to management. Reviews of infectious diseases. 1983 Sep 1;5(5):876-884.
- Wiesenfeld HC, Sweet RL. Progress in the management of tuboovarian abscesses. Clinical obstetrics and gynecology. 1993 Jun 1;36(2):433-444.
- Onderdonk AB, Kasper DL, Cisneros RL, et al.. The capsular polysaccharide of Bacteroides fragilis as a virulence factor: comparison of the pathogenic potential of encapsulated and unencapsulated strains. Journal of Infectious Diseases. 1977 Jul 1;136(1):82-89.
- Lareau SM, Beigi RH. Pelvic inflammatory disease and tubo-ovarian abscess. Infectious disease clinics of North America. 2008 Dec 1;22(4):693-708.
- 10. Demirtas O, Akman L, Demirtas GS, et al.. The role of the serum inflammatory markers for predicting the tubo-ovarian abscess in acute pelvic inflammatory disease: a single-center 5-year experience. Archives of gynecology and obstetrics. 2013 Mar;287(3):519-23.
- 11. Chan Y, Parchment W, Skurnick JH, et al. Epidemiology and clinical outcome of patients

hospitalized with pelvic inflammatory disease complicated by tubo-ovarian abscess. Infectious diseases in obstetrics and gynecology. 1995 Jan 1;3(4):135-139.

- 12. McClean KÁ, Sheehan GJ, Harding GK. Intraabdominal infection: a review. Clinical infectious diseases. 1994 Jul 1;19(1):100-116.
- Gagliardi PD, Hoffer PB, Rosenfield AT. Correlative imaging in abdominal infection: an algorithmic approach using nuclear medicine, ultrasound, and computed tomography. InSeminars in nuclear medicine 1988 Oct 1 (Vol. 18, No. 4, pp. 320-334). WB Saunders.
- 14. Workowski KA, Bachmann LH, Chan PA, et al.. Sexually transmitted infections treatment guidelines, 2021. MMWR Recommendations and Reports. 2021 Jul 23;70(4):1.
- 15. Pedowitz P, Bloomfield RD. Ruptured adnexal abscess (tuboovarian) with generalized peritonitis. American Journal of Obstetrics & Gynecology. 1964 Mar 15;88(6):721-729.
- Jackson SL, Soper DE. Pelvic inflammatory disease in the postmenopausal woman. Infectious Diseases in Obstetrics and Gynecology. 1999;7(5):248-252.
- Protopapas AG, Diakomanolis ES, Milingos SD, et al.. Tubo-ovarian abscesses in postmenopausal women: gynecological malignancy until proven otherwise?. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2004 Jun 15;114(2):203-209.
- Lipscomb GH, Ling FW. Tubo-ovarian abscess in postmenopausal patients. Southern medical journal. 1992 Jul 1;85(7):696-699.

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