Case Report

Postmenopausal Idiopathic Spontaneous Rupture of Pyometra with Tubo-ovarian Abscess: An Atypical Presentation

Nikita Krishna, Kiran Aggarwal, Prabha Lal, Anuradha Singh

Department of Obstetrics and Gynaecology, Lady Hardinge Medical College, New Delhi, India

Abstract

Spontaneous perforations in pyometra occur rarely. Incidence is only 0.01%–0.5% in gynecological patients. Tubo-ovarian abscess (TOA) is seen less in postmenopausal women amounting the 6%–18% of the total cases of TOA reported. A 52-year-old P_3L_3 postmenopausal woman with abdominal pain was admitted to hospital. Emergency laparotomy was performed in view of pyoperitoneum. Intraoperatively, 1000 cc of foul-smelling pus was suctioned out from the peritoneal cavity a 2 cm × 2 cm sized perforation was seen at the right fundal region of the uterus and a right sided TOA was seen extending to the uterine cavity, left sided ovary was normal. A total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed. The patient got discharged on the 36th postoperative hospitalization day. Histopathological study revealed uterine purulent inflammation with no evidence of malignancy. The diagnosis of spontaneous perforation of pyometra is rarely made preoperatively and the possibility of a perforated pyometra should, therefore, be considered when elderly women suffer from acute abdominal pain. Hysterectomy and bilateral salpingo-oophorectomy may be the best choice procedure in these patients. There is probably a new trend in the epidemiology of TOA, occurring in older women who do not present the traditional risk factors for pelvic inflammatory disease and TOA.

Keywords: *Postmenopausal, pyometra, spontaneous uterine perforation, tubo-ovarian abscess*

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Introduction

Pyometra is an accumulation of pus in the uterine cavity as a consequence of impaired drainage. Although pyometra is a rare disease seen in 0.1%–0.2% of all gynecologic cases, it is more common in the elderly (13.6%).[1] Spontaneous perforation of the uterus is a rare complication of pyometra seen in 0.01%–0.05% of postmenopausal women.[1] The most common cause of pyometra is malignancy of the genital tract and sequelae of radiotherapy. Tubo-ovarian abscess (TOA) is seen less in postmenopausal women, amounting to 6%–18% of the total cases of TOA reported.[2]

Clinical Presentation, Investigations and Provisonal Diagnosis

A 52-year-old P_3L_3 postmenopausal female with previous two cesarean sections presented to the gynecology casualty with the chief complaints of acute pain in the lower abdomen for the past 6 days and fever for 1 day.

There were no complaints of any vaginal bleeding or purulent foul-smelling discharge, no bowel/bladder complaints and there was no prior surgical intervention.

On admission, the patient was conscious, oriented, and afebrile, with a pulse rate of 100/min and blood pressure – 110/78 mmHg, respiratory rate – 24/min, and SpO_2 – 96% on room air. There was diffuse tenderness with guarding and rigidity over the whole abdomen. On local examination, the cervix was flushed with the vagina, and no foul-smelling discharge was seen. On pelvic examination, the uterus size could not made out

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Address for correspondence: Dr. Kiran Aggarwal, 34/16 East Patel Nagar, New Delhi - 110 008, India. E-mail: dr_kiranaggarwal@hotmail.com

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due to tenderness. The bilateral fornices were full and tender.

Laboratory studies showed a hemoglobin of 11.8 g/dL with a total leukocyte count – 7800 (80% neutrophils). liver and kidney function tests were within normal limits. The X-ray of the whole abdomen erect and supine were normal. Ultrasound pelvis revealed irregular uterine contents with an internal necrotic area in the fundal region with an endometrial thickness of 6.5 mm. A large collection with diffuse internal echoes was seen in the pouch of Douglas and bilateral ovaries not seen separately.

The MRI of the whole abdomen revealed a breach in the right lateral wall of the uterus with fluid collection in the right parametrium over the right iliac fossa.

Management

After initial resuscitation, antibiotics and intravenous fluids started, abdominal tapping was done under ultrasound guidance and frank pus was drained. In view of pyoperitoneum, the patient was taken for exploratory laparotomy. There was about 1000 cc of foul-smelling pus suctioned out from the peritoneal cavity and the entire bowel was coated with mucous flakes. The anterior wall of the uterus was adhered to the rectus sheath. A 2 cm × 2 cm sized perforation was seen at the right fundal region of the uterus with necrotic margins from which purulent material was exuding [Figure 1]. There was right-sided TOA extending to the uterine cavity, left-sided ovary was normal. The whole of the alimentary tract was normal.

Total abdominal hysterectomy with bilateral salpingo-oophorectomy (including removal of TO mass) was done. On the cut section of the resected uterus, there was shaggy necrotic black material present within the dilated endometrial cavity.

Histopathological examination of the fallopian tube showed dense acute on chronic inflammatory infiltrate with formation of neutrophilic abscess [Figure 2]. Foci of necrosis seen. No granuloma was present.

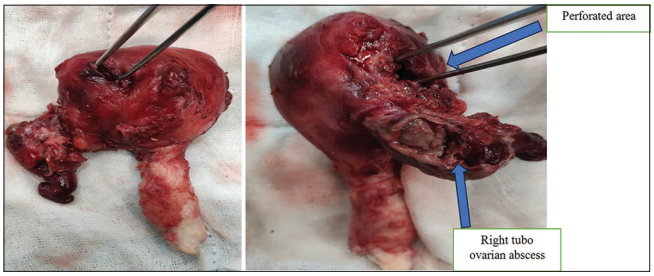

Figure 1: Perforated area at the right fundal region with right-sided tubo-ovarian abscess

Histopathology of the uterus showed chronic suppurative endometritis and myometritis associated with perforation (pyometra) with no evidence of malignancy.

On postoperative reevaluation for the cause of TOA, there was no evidence of tuberculosis or malignancy. All initial pus cultures showed no aerobic or anaerobic growth. In the subsequent cultures, *Escherichia coli* was grown. In the postoperative period, the patient had a burst in her abdomen on the 10th postoperative day, for which wound dressing followed by subsequent resuturing was done. The patient was discharged on the 36th postoperative day in satisfactory condition.

Discussion

Pyometra is rare in postmenopausal women and can occur as a result of conditions such as occlusion of the cervical canal by malignant or benign tumors, radiotherapy, and senile cervicitis. The classical triad of symptoms includes postmenopausal vaginal bleeding, purulent vaginal discharge, and suprapubic pain.[3] Our patient had complained of abdominal pain for 6 days but had no postmenopausal bleeding or discharge had no evidence of malignancy or any usage of an intrauterine device, and had not undergone any surgical intervention before. Frequent symptoms of uterine perforation due to pyometra include abdominal pain (97.6%), fever (54.8%), and vomiting (31%).[4]

There are some case reports of spontaneously perforated pyometra; in 2012, Khan and Prasad reported a case of perforated pyometra presenting as a pelvic abscess in a 57-year-old postmenopausal woman for which hysterectomy and bilateral salpingo-oophorectomy was performed. The pus sample showed no aerobic or anaerobic growth.[5] Similarly, in 2016, Uno *et al*. reported a case of peritonitis in a 90-year-old

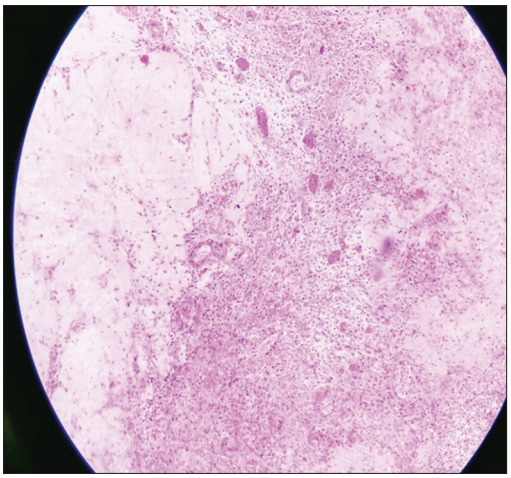

Figure 2: Dense acute on chronic inflammatory infiltrate with formation of neutrophilic abscess and foci of necrosis seen

postmenopausal woman caused by a spontaneous perforation of pyometra. An emergency laparotomy was performed. Histological examination revealed pyometra with no evidence of malignancy.[6]

Pyometra with TOA in postmenopausal women is even rare. There are similar rare case reports of idiopathic pyometra associated with TOA in postmenopausal women. In 2022, a case reported by Ntioudi M of idiopathic pyometra with TOA of the right adnexa in a 72-year-old postmenopausal woman, for which conservative management was undertaken and the patient was discharged after 15 days of hospitalization in satisfactory condition.[7] In 2020, a systematic review by Gil *et al*. to evaluate the incidence, risk factors of TOA in postmenopausal women stated that the prevalence of TOA in postmenopausal women was 6%–18% of the total TOA cases reported. The most common risk factors for TOA identified were pelvic procedures, including endometrial biopsy. It finally concluded that TOA is not a frequent finding in postmenopausal women.[2]

So far, it has been mentioned that spontaneous rupture of pyometra with TOA in postmenopausal women is a very atypical presentation, leading to delayed diagnosis and frequently leads to misdiagnosis of gastrointestinal perforation.

Conclussion

The uterine rupture caused by pyometra occurs rarely with high morbidity and mortality. The patients present with diffuse abdominal peritonitis and gynecologic symptoms are less frequent, which makes preoperative diagnosis difficult. Uterine rupture should be borne in mind in postmenopausal patients who present with acute abdomen and pneumoperitoneum. A pyometra may not be associated with malignancy and presentation due to perforation, which may be overtly acute or insidious. There is probably a new trend in the epidemiology of TOA, occurring in older women who do not present the traditional risk factors for pelvic inflammatory disease and TOA.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and that due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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