Brunei International Medical Journal

OFFICIAL PUBLICATION OF THE MINISTRY OF HEALTH, BRUNEI DARUSSALAM

Volume 15 16 April 2019 (10 Sya'ban 1440H)

RESISTANT PYOMETRA IN POST-MENOPAUSAL WOMAN WITH POORLY CONTROLLED DIABETES MELLITUS: A CASE REPORT.

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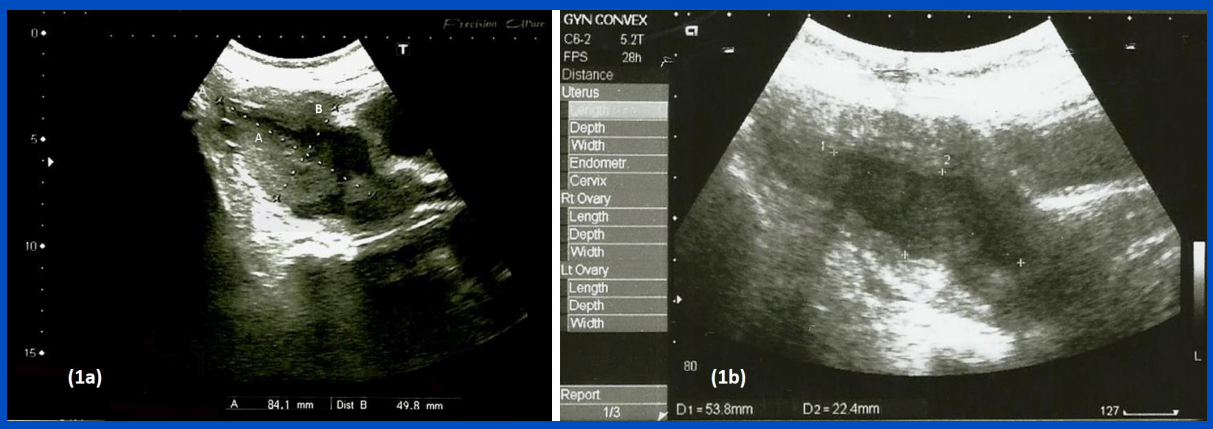

ABSTRACT

Pyometra is a rare disease defined by accumulation of pus inside uterine cavity. Poorly controlled diabetes mellitus can predispose post-menopausal women to develop pyometra as diabetes is known to suppress patients' immune system and impair the natural drainage of the uterus. We reported here the case of a 66-year-old post-menopausal woman with poorly controlled diabetes who came with a complaint of vaginal whitish brown discharge for one week. The diagnosis of pyometra was made on ultrasound scanning, which is challenging especially in primary care where ultrasound scan may not be widely available. Patient was managed with hysteroscopy endometrial curettage and antibiotics by the admitting gynecology team. Result of biopsy was reported as chronic inflammation but patient refused for further surgical intervention. She was managed conservatively and her diabetes was better controlled on insulin treatment with improvement of her vaginal discharge. This case highlights the important of thorough assessment in post-menopausal women presented with vaginal discharge especially if they have condition which suppressed their immune system. Early diagnosis of pyometra may prevent serious complication such as spontaneous uterine rupture and severe sepsis.

Keywords: Diabetes Mellitus; Diabetes Complications; Post-menopausal; Pyometra; Vaginal discharge.

Brunei Int Med J. *2019;15:53-57*

ISSN 1560 5876 Print
ISSN 2079 3146 Online

Online version of the journal is available at www.bimjonline.com

Brunei International Medical Journal (BIMJ)
Official Publication of the Ministry of Health, Brunei Darussalam

ISSN 1560-5876 Print
ISSN 2079-3146 Online

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ABSTRACT

Pyometra is a rare disease defined by accumulation of pus inside uterine cavity. Poorly controlled diabetes mellitus can predispose post-menopausal women to develop pyometra as diabetes is known to suppress patients' immune system and impair the natural drainage of the uterus. We reported here the case of a 66-year-old post-menopausal woman with poorly controlled diabetes who came with a complaint of vaginal whitish brown discharge for one week. The diagnosis of pyometra was made on ultrasound scanning, which is challenging especially in primary care where ultrasound scan may not be widely available. Patient was managed with hysteroscopy endometrial curettage and antibiotics by the admitting gynecology team. Result of biopsy was reported as chronic inflammation but patient refused for further surgical intervention. She was managed conservatively and her diabetes was better controlled on insulin treatment with improvement of her vaginal discharge. This case highlights the important of thorough assessment in post-menopausal women presented with vaginal discharge especially if they have condition which suppressed their immune system. Early diagnosis of pyometra may prevent serious complication such as spontaneous uterine rupture and severe sepsis.

Keywords: Diabetes Mellitus; Diabetes Complications; Post-menopausal; Pyometra; Vaginal discharge.

INTRODUCTION

Pyometra is an accumulation of pus in uterine cavity. It is a rare condition in post-menopausal women who present with vaginal discharge. The diagnosis is quite challenging especially in primary care settings with limited resources. Ultrasound pelvic plays an important role in diagnosing pyometra. The most common cause of pyometra is malignant disease of genital tract.[1–3] However, poorly controlled diabetes mellitus (DM) could predispose patient to pyometra due to impairment of patient's immune system and interference with the natural drainage of uterus.[4] In a menopause patient, endometrium loses its resistance and the drainage of the cervical canal is impaired which can precipitate the formation of pyometra.[5] Early diagnosis and management are important as it can prevent patient from developing severe sepsis and uterine perforation. We reported a case of 66-year-old post-menopausal women who had poorly controlled DM presenting with a week history of vaginal discharge and was diagnosed to have pyometra on ultrasound scan. This case serves as a reminder especially to the primary care doctors to include rare diseases as possible differentials and to broaden the horizon of both the possible diagnosis and the scope of management in patient unwilling to conform to conventional management.

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CASE REPORT

A 66-year-old lady with underlying DM for 10 years and menopause for 16 years was referred to our family medicine clinic by a private general practitioner (GP) for management of ovarian cyst. She had an episode of non-itchy brownish vaginal discharge for one week. The discharge was non-smelly and of a small amount, staining her panty liner. She had no fever, constitutional symptoms, abdominal pain or history of post-menopausal bleeding. The GP did a pelvic ultrasound which showed a mass containing fluid which he thought was an ovarian cyst. She had poorly controlled DM type 2 with HbA1c of 15.4% (good control: <7.0%) and her fasting blood sugar was 20 mmol/L (normal <7 mmol/L). Clinically she looked well, afebrile and her body mass index (BMI) was 18.9m/kg (weight 41kg, high 1.47m). Her abdomen was soft with no mass palpable. On bimanual examination, her uterus was enlarged and bulky (about 8 weeks in size). Per speculum examination showed normal cervix with a closed os and presence of copious yellowish-greenish discharge pooled at posterior fornix. Pelvic ultrasound performed at our clinic showed an enlarged uterus (9.1cmx4.7cm) with a collection inside uterine cavity (3.5cmx7.2cm). The myometrium thickness was 1.5cm (Figure 1). During this time, high vaginal swab was taken and sent for culture and sensitivity which came back as mixed growth. Pipelle sampling was also done and it was consistent with abscess tissue and no malignant cell seen.

She was admitted to the gynecology ward and was started on intravenous (i.v) cefuroxime 750mg three times per day (tds) and intravenous metronidazole 500mg tds. Basal bolus subcutaneous (s/c) insulin was started in the ward to control her diabetes. On day four of admission, she underwent hysteroscopy with direct punch biopsy and endometrial curettage under general anesthesia. Hysteroscopic findings was that of hyperemic area at endocervical and endometrium with thick white discharge and slough at left ostium and lower part of uterus. Swab and discharge culture grew *Klebsiella pneumonia* that was sensitive to cefuroxime and co-trimoxazole. Punched biopsies taken at three different areas of the thickened endometrium showed multiple fragments of micro-collagen tissue infiltrated with lymphocyte that was consistent with chronic inflammation and infection on histopathological examination. Two other biopsy taken by endocervical and endometrial curettage shows acute and chronic inflammation. The discharge was also sent for *Myocobacterium tubercolusis bacilli (MTB)* culture and acid-fast bacilli (AFB) smear which was negative.

She was treated with 7 days of i.v

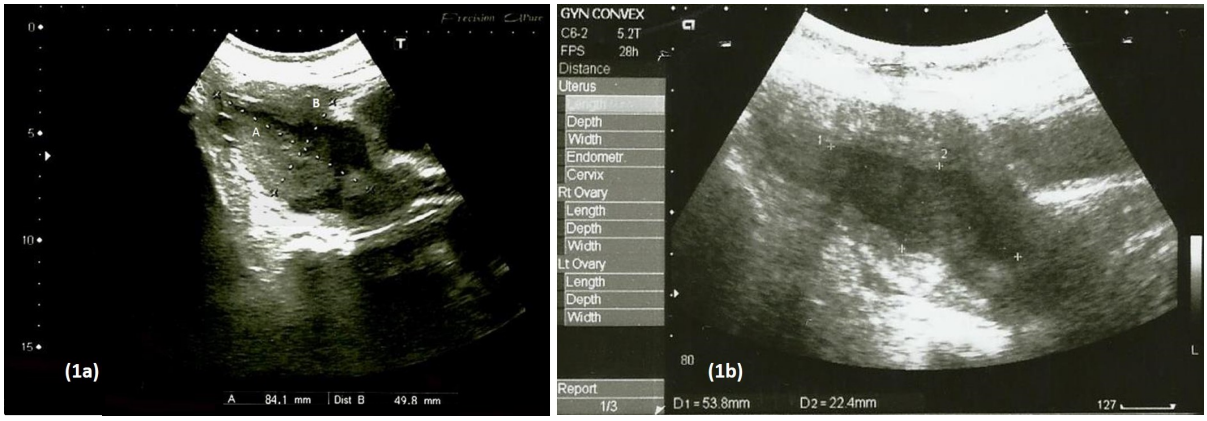

Figure 1: (a) Pelvic ultrasound showed an enlarged uterus measuring 9.1cmx4.7cm with a collection inside uterine cavity (3.5cmx7.2cm). The myometrium thickness was measured at 1.5cm. (b) Pelvic ultrasound performed 1 month post discharged showed residual pyometra after the hysteroscopy endometrial curettage.

cefuroxime and metronidazole and was discharged well after 10 days of hospitalisation. She was discharged with oral antibiotic to be completed for another 4 days and s/c insulin for control of her DM. At follow-up in the gynaecology clinic, she was noted to be well but still had small amount of per vaginal discharge, her blood glucose level varies between 6 mmol/L to 8 mmol/L in the morning indicating good controlled of her DM. Repeat ultrasound scan showed presence of small collection (3.0x2.0 cm) still persistent within uterine cavity (Figure 1b). She was counselled for hysterectomy for unresolved pyometra with her family member, however she declined surgery and was discharged back to our outpatient clinic. At one year follow-up, she was relatively well and still carry on with her usual routine even though she still complained of occasional vaginal discharge. Her diabetes is also better controlled on s/c insulin. Her fasting capillary blood sugar range from 4-7 mmol and her random capillary blood sugar between 7-11mmol. She is however more motivated and adhered to her diabetic treatment better than before.

DISCUSSION

Pyometra is a rare and potentially life-threatening disease. It is more common in women who had malignant uterine lesion (incidence 1.5-4.0%) compare to 0.2% in post-menopausal woman.[1,3] Even though it makes up only 0.038% of all gynecologic admissions, it is an important cause of uterine rupture.[6–8] Classically, pyometra is defines as an accumulation of pus inside uterine cavity and patient may present with post-menopausal bleed, vaginal discharge, intraabdominal pain, intraabdominal mass or hypoalbuminemia. [7-9] Yildizhan et al. in 2006 summarised 22 cases of spontaneous ruptured pyometra and found that the most common presenting symptoms were abdominal pain (95.5%), vomiting (41.0%), nausea (9.1%), and fever (9.1%).[7] He also reported that only 35% of cases of spontaneous rupture of pyometra were associated with malignancy (Cervical, endometrial and colorectal malignancy). However up to 50% women with pyometra may be asymptomatic.

Ultrasound is usually the initial and reliable imaging study to detect pyometra especially in primary care setting. It shows collection of fluid inside the uterine cavity (enlarged uterus with hypoechoic lesion inside uterine cavity). However, sometimes it is difficult to distinguish it from intrauterine malignancy, hence the uterine biopsy or pipelle sampling may be needed. If perforation of pyometra is suspected, Computed Tomography scan of abdomen is a better diagnostic imaging tool.[3,6,7]

Vaginal swab culture is important to be done in patient with pyometra even though cultures were positive in only 50% of all cases.[1] Reported organisms cultured from pyometra were *Bacteroides fragilis*, *E. coli* and *Enterococcus* species.[10] *Klebsiella Pneumonia* is gram-negative bacilli bacteria that are commensals in intestines, nasopharynx and skin and it rarely causes infection in genital tract. It usually causes pneumonia, urinary tract infection and wound infection. Poor control of DM predisposes patient to be more susceptible to infection. It is due to low immune response and increased adherence of microorganism towards diabetics mucosal or epithelial cells.[4,5] Some microorganisms become virulent and active in high glucose environment especially candida and *E. coli* species.[5]

It is important to rule out *Tuberculosis bacilli* (TB) as one of the causative organisms in patient with pyometra especially in immunocompromised patient in TB endemic countries. History of TB contact or previous TB infection should be asked, and sample of endometrial tissue should be routinely sent for AFB stain and MTB PCR to diagnose it.[11] Patients diagnosed with TB pyometra response well to

prolong treatment with anti-TB medications usually for 6 months.[11]

Since most cases (75%) of pyometra have been reported to be associated with some form of malignancy, tissue biopsies should be routinely sent for histopathological examination.[1,3,7] In our case, multiple punch biopsies of three different sites of the thickened endometrium, one at the endocervix as well as tissues from the endometrial curettage were all sent for histopathological examination of which all were reported as chronic inflammatory changes with no evidence of malignancy.

In uncomplicated cases, pyometra can be managed by dilatation and drainage of uterine cavity. Wide spectrum antibiotics covering for both anaerobic and aerobic bacteria are the antibiotics of choice. Hysterectomy is the treatment of choice especially in cases of spontaneous perforation of pyometra and in refractory cases.[9,12] In patients who presented with spontaneous perforation of pyometra, exploratory laparotomy needs to be done urgently.[3,6,7] The mainstay management of our patient was to maintain better diabetic control which was achieved with s/c insulin injection.

CONCLUSION

Pyometra is a rare condition due to collection of pus in the uterus and is commonly associated with uterine malignancy. Tissue diagnosis to exclude uterine malignancy needs to be done and when exclude, causes such as poorly controlled diabetes as with this case can be considered. For unresolved pyometra, hysterectomy should be considered but if patient refused, long-term follow up with good diabetic controlled should be carried out to monitor for complications such as sepsis.

ACKNOWLEDGEMENT

We thanked Associate Prof Dr Adibah Ibrahim and Dr Rahimah Abdul Rahim our Obstetric and Gyanaecologist, for their expertise in co-management of the patient and to Hospital Universiti Sains Malaysia where the patients' main care is provided.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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