

Pyometra in a Woman with Advanced Pelvic Cancer

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Abstract

Pyometra, the accumulation of purulent material in the uterine cavity, is very rare. It has been associated with gynecological malignancy or benign gynecologic tumors, radiation cervicitis, congenital anomalies, and intrauterine devices. The symptoms are nonspecific and easily misdiagnosed as other causes of acute abdominal pain. We present a postmenopausal woman with advanced pelvic cancer complicated by pyometra. Treatment consisted of transcutaneous drainage and concomitant antibiotics before palliative radiation. Delayed diagnosis and treatment of pyometra may lead to uterine perforation.

Keywords: Pyometra; Histiocytic Sarcoma; Pelvic Cancer; Postmenopausal

Abbreviations

g/dL: Grams Per Deciliter; mg/dL: Milligrams Per Deciliter; CT: Computerized Tomography; PCR: Polymerase Chain Reaction; Spp: Species

Introduction

Pyometra is defined as the accumulation of pus in the uterine cavity [1]. Clinical presentation can include blood-stained purulent vaginal discharge, lower abdominal pain, and enlarged uterus. Uterine malignancy and sometimes its treatment with radiation represent predisposing conditions for pyometra [2]. Other common causes of pyometra include benign tumors, endometrial polyps, cervical occlusion following surgery, and congenital cervical abnormalities [1]. This is the case of a postmenopausal woman with histiocytic sarcoma of the pelvis presenting with pyometra.

Case

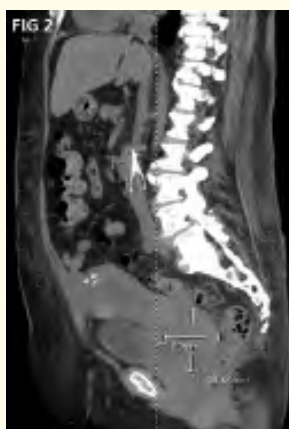
A 67-year-old postmenopausal woman, with three children, no miscarriages, and a history of type 2 diabetes mellitus and stage 4 histiocytic sarcoma of the pelvis, was transferred from her skilled nursing facility after developing four-day history of lower colicky abdominal pain, low grade fevers, nausea, non-bilious vomiting, and decreased oral intake. Two months before her current admission she was diagnosed with locally invasive (bladder and cervix) pelvic histiocytic sarcoma, with multiple metastases to mediastinal and cervical lymph nodes. One cycle of clofarabine and pelvic radiation resulted in partial tumor regression. Upon cancer diagnosis, she developed obstructive uropathy from tumor invasion of ureters, requiring bilateral percutaneous nephrostomy tubes and a right ureteral stent.

Her husband had died few years earlier, and she has had no sexual relationship since then. She acknowledged having two sexual partners in her lifetime and never used contraceptives or intrauterine devices.

On physical examination, the patient was afebrile, her blood pressure was 99/60 mmHg, pulse 83 beats per minute, and respiration 16 per minute. On abdominal exam, she had an enlarged and tender suprapubic mass. The percutaneous nephrostomy tubes were in place without costovertebral angle tenderness, skin erythema, or discharge. Pelvic exam revealed a friable cervix, but the cervical canal was not visible. She had foul-smelling yellow vaginal discharge but no blood. On rectal examination, hard stools were present in the ampulla, and no masses or blood were found. Her legs showed bilateral pitting edema up to the knees. The remainder of the physical exam was unremarkable.

Laboratory tests were remarkable for a white blood count of 26,300 cells per microliter with 89% neutrophils, hemoglobin of 8.8 g/dL, and creatinine 1.7 mg/dL. Human immunodeficiency virus and hepatitis panel were negative. Urinalysis of the nephrostomy tubes showed 30 red blood cells, 50 white blood cells, moderate bacteria, positive leukocyte esterase but no nitrates.

A computerized tomography (CT) of the abdomen and pelvis demonstrated a large cervical mass occluding the cervical orifice causing a massively dilated uterus (Figure 1), which had tripled its size compared to her previous CT scan done one-month prior (Figure 2). Also, increase in size of the pelvic tumor was noted.



The patient started receiving intravenous fluids and empiric broad-spectrum antibiotics with cefepime, vancomycin, and metronidazole. Cervical catheterization was attempted, but the patient had a friable cervix and bled during the procedure; thus, it was stopped. A CT guided percutaneous uterine drain was placed in her lower abdomen with successful drainage of frank pus. Its culture grew *Prevotella loescheii* colonies. Blood cultures and urine culture remained negative.

Treatment was transitioned to oral sulfamethoxazole/trimethoprim and metronidazole. At the end of her hospital course, her abdominal pain and nausea improved and her vaginal discharge ceased. She was discharged on the above mentioned oral antibiotics and with the percutaneous drainage, and her clinical course remained favorable. In the subsequent weeks, she underwent palliative chemotherapy with clofarabine and radiotherapy. Her deconditioning made her ineligible for hysterectomy; thus, the intrauterine drain remained in place. The patient developed pancytopenia and a complicated urinary infection, and died three months later.

Discussion

Pyometra is a very rare condition, occurring most commonly in postmenopausal women [3]. This infection is defined as the accumulation of pus in the uterine cavity, and thought to be a result of interference with the natural drainage of the uterus. It is associated with gynecological malignancy or benign gynecologic tumors, radiation cervicitis, atrophic cervicitis, congenital anomalies, and intrauterine device [4].

Women with pyometra often suffer from abdominal pain, fever, vaginal discharge, and enlarged uterus. The symptoms are nonspecific and easily misdiagnosed as other causes of acute abdomen. Lien, *et al.* reported seven cases, and four of them were misdiagnosed as a urinary tract infection [5]. The diagnosis of pyometra can be made clinically by drainage of pus from the uterine cavity and from the image of intrauterine fluid accumulation by ultrasonography or computed tomography scan [6]. Drainage is the first choice for treatment of pyometra, but antibiotics effective against aerobic and anaerobic bacteria are also required.

The endometrium is not considered a sterile cavity. Previous reports using polymerase chain reaction (PCR) analysis of the endometrium and upper endocervix swabs found colonization with *Lactobacillus iners* (45%), *Prevotella* spp (33%), and *Lactobacillus crispatus* (33%) [7]. However, in case of pyometra, the most common organisms isolated are *Escherichia coli* and *Bacteroides fragilis*, as well as *Streptococcus* species as mixed infections [8].

Delayed diagnosis and treatment of pyometra may lead to increased morbidity and mortality, including risk of perforation, which is the most feared complication. Several cases of perforated pyometra have been published and most of those were related to gynecologic malignancies [6,8]. Though the majority needed urgent laparotomy, hysterectomy was only possible in half of the cases due to the anatomic changes from the cancer, or advanced deconditioning. In our patient, who had high risk for perforation, percutaneous drainage and antibiotics relieved the infection and allowed the patient to undergo other palliative interventions such as radiation therapy.

Conclusion

In conclusion, in an elderly woman presenting with pyometra, a malignancy is the cause until proven otherwise. Conversely, in a patient with known cervical or pelvic cancer with involvement of cervix or vagina, careful monitoring and aggressive treatment should be instituted before the partial obstruction evolves to an imminent picture of obstructive infection like pyometra, and its most worrisome complication: uterine perforation.

Conflict of Interest

There are no financial or any other conflict of interest for this article, for any of the authors.

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