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Case Report

Spontaneous Rupture of Pyometra Secondary to Cervical Cancer: A Dangerous Complication

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Abstract

Pyometra is a rare condition defined by accumulation of purulent fluid in the uterine cavity resulting from the obstruction of cervical canal drainage.

This exceptional condition can yield major and possibly lethal complications, namely spontaneous perforation of the uterus and subsequent diffuse peritonitis.

We present the case of a diabetic 60 years old patient with recent diagnosis of cervical cancer, presenting to the emergency department in septic shock with clinical signs of peritonitis and strangulated hernia.

Upon urgent laparotomy, multiple perforations of the uterus were identified, leading to a total hysterectomy with bilateral oophorectomy being performed. The rarity of this condition highlights the significance of maintaining a high index of suspicion and promptly diagnosing and managing patients presenting with symptoms of acute abdomen.

Introduction

Pyometra is a rare condition defined by accumulation of purulent fluid in the uterine cavity. It occurs when the natural drainage of the cervical canal is compromised. The underlying cause can be any gynecological condition leading to cervical stenosis either malignant or benign. The possible etiologies include endometrial polyp, leiomyoma, cervical or endometrial carcinoma, and infection especially senile cervicitis [1], but also iatrogenic causes such as cervical occlusion after surgery or radiotherapy or even an intrauterine device [2]. This condition, although being rare with a reported incidence of 0.1%-0.2% of all gynecologic patients [3] can yield major and possibly lethal complications, namely spontaneous perforation of the uterus and subsequent diffuse peritonitis.

We aim to report a case of spontaneous rupture of pyometra secondary to a recently discovered cervical cancer and presenting as an acute abdomen.

Case Presentation

We report the case of a 60 years old patient, gravida 3, para 2 with a medical history of diabetes mellitus under oral treatment. The patient was diagnosed 20 days before admission with a squamous cell carcinoma of the cervix stage IIIB with an extension to the vagina.

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Before she could receive radiation for her tumor, and while extension work up was carried on, the patient was admitted to the emergency department for intense abdominal pain, persistent vomiting, and obstructive syndrome with no bowel movement in 2 days and altered physical status.

Upon physical examination, the patient presented with signs of septic shock with a body temperature of 38.9 degrees, blood pressure 91/56 mmHg, pulse rate 110 beats/min, respiratory rate at 40 cycle/min, oxygen saturation 97% (under oxygen mask 5 L/min) and oliguria. Abdominal examination found a distended abdomen with diffuse tenderness and rigidity, and a strangulated and irreducible hernia of the ligna Alba.

Vaginal examination showed circumferential mass of the ectocervix with a deviated and aspirated cervix, invasion of the upper part of the vagina.

Results of biological tests on admission were as follows: White Blood Cell (WBC) count 13.000 g/dL, hemoglobin 12 g/dL, and C-Reactive Protein (CRP) 390 mg/dL. Alkaline reserves were 13 mEq/L and kidney function was impaired with a blood creatinine and urea of 27 mg/L and 1.10 g/L.

An MRI was done 3 days before the patient's urgent admission as part of the pre therapeutic cancer workup and described the cervical tumor as well as the presence of intrauterine fluid and thickening of the uterine wall, without intra peritoneal abnormalities.

The patient was admitted to the intensive care unit where vasoactive drugs and broad spectrum antibiotics were introduced. After a quick preparation, she was admitted to the operating room.

Consequently, an urgent laparotomy was performed. Exploration found a hernia of the Linea Alba with strangulated epiploic content. After opening the hernia sac, 700 mL of purulent peritoneal effusion with false membranes were discovered along with a pelvic abscess plugged by the omentum on a necrotic and shredded uterus, with several perforations (Figure 1).

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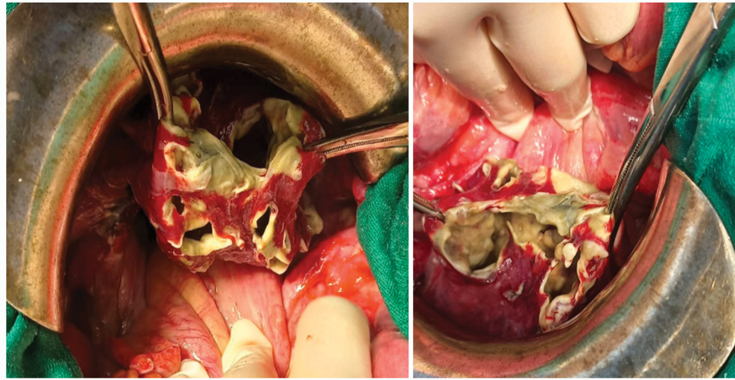

Figure 1: per operative images of the multiples perforations of the uterus

A hysterectomy with bilateral salpingo-oophorectomy was performed with abundant peritoneal lavage and wide drainage.

The patient was transferred to the ICU for post operative care, where she received broad spectrum antibiotics. Despite all the efforts, the patient died at POD3.

Histopathological examination of the surgical specimen revealed perforation and necrosis of myometrial wall with pyometra and invasive cervical carcinoma.

Discussion

This report describes a case of spontaneous perforated pyometra, a rare condition with a reported incidence of 0.1%-0.5% [4]. Pyometra is caused by an obstruction of the cervical canal caused essentially by tumors, previous surgery and radiotherapy, or even senile cervicitis [5].

Perforation of pyometra is an uncommon complication, with only over 42 cases reported over the past two decades [6]. Patients typically present with acute abdominal symptoms, which can pose a diagnostic challenge due to the differential diagnosis with other surgical causes of diffuse peritonitis.

In their study Kitai, et al. [6] reviewed 42 cases and showed that an accurate preoperative diagnosis of spontaneous pyometra perforation was made in only 30% of cases. In the remaining cases, other causes of acute abdomen were maintained as preoperative diagnosis, including perforation of the gastrointestinal tract, diffuse peritonitis, mesenteric ischemia, and in one case, incarcerated hernia [7]. Confirmation of diagnosis is obtained by exploratory laparotomy, during which perforation of the uterus is diagnosed intra-operatively [8,9]. The therapeutic options for perforated pyometra depend on the site of perforation, etiology of pyometra, and clinical condition. They range from supravaginal hysterectomies, total hysterectomies, possibly with bilateral salpingo-oophorectomy and surgical closure of perforated uterine associated with an abundant peritoneal lavage and drainage.

The mortality rate of ruptured pyometra is high, especially in cases of underlying malignancy and immunosuppressive conditions such as diabetes [6,9]. Therefore, urgent management of these patients is crucial.

In this case, the patient presented with septic shock, acute abdomen, and physical signs of a strangulated hernia, making preoperative diagnosis challenging. Diagnosis of perforated pyometra was made during laparotomy, and the patient underwent hysterectomy with bilateral salpingo-oophorectomy. Mortality of ruptured pyometra seems to be high especially in case of underlying malignancy and immunosuppressive conditions such as diabetes [6,9], which accentuates the urgency of management of these patients before the complication occurs.

Conclusion

Pyometra secondary to cervical cancer is a rare condition, when non treated it can be complicated with a life threatening perforation of the uterus. The rarity of this condition emphasizes the importance of a high index of suspicion and prompt diagnosis and management in patients presenting with acute abdomen symptoms.

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