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Case Report

Spontaneous perforation of pyometra: A rare cause of diffuse peritonitis

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Introduction

An uncommon condition known as pyometra occurs when the natural drainage of the uterine cavity is compromised and pus accumulates within the cavity. It is a relatively uncommon condition with a reported incidence of 0.1%–0.5%.^{1–3} A spontaneous perforation of pyometra and subsequent diffuse peritonitis is even rarer. We report a patient who was admitted to our hospital for diffuse peritonitis caused by spontaneously perforated pyometra.

Case report

A 66 year old female patient was admitted to our hospital with the chief complaints of abdominal pain, fever and

distension of abdomen since the past nine days. Patient was a diagnosed case of chronic obstructive pulmonary disease. However she was not on any regular medication for the same. She was a para 3 lady with no past history of abortions or dilatation and curettage. She had no past history of vaginal discharge, pain abdomen or bleed per vaginum. She had no past history of malignancy of genital tract or radiation to the pelvis. Clinical examination revealed an ill looking elderly lady who was febrile (100 °F) and had tachycardia (pulse rate 110/min). BP was 110/70 mmHg. There was generalised distension, tenderness and guarding of the abdomen. Plain abdominal X-ray examination revealed no gas under the diaphragm, but showed a few dilated small bowel loops. Laboratory studies at the time of admission were as follows: haemoglobin: 11.0 g%; total leukocyte count: 13,400/mm³; differential leukocyte count: polymorphs 79, lymphocytes 16, monocytes 2, eosinophils 3; serum albumin: 2.6 g/dL; serum urea: 37 mg/dL and serum creatinine: 1.3 mg/dL. The ECG and chest X-ray were within normal parameters. Ultrasonography of the abdomen revealed a few dilated, aperistaltic loops of small intestine and intra-abdominal free fluid. It was opined that the patient had diffuse peritonitis possibly because of acute mesenteric ischaemia. The patient underwent an exploratory laparotomy. Per-operatively, following findings were noted: (i) A 1 cm size, ragged perforation in the fundus of uterus (Fig. 1); (ii) Localised pus collection within the pelvis; (iii) Purulent free fluid in Morrison's pouch, paracolic gutters and subdiaphragmatic space. The stomach, small and large intestines were normal. She underwent a total hysterectomy and bilateral salpingo-oophorectomy, evacuation of pelvic pus collection and a thorough peritoneal lavage. She was put on elective ventilation in immediate

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Fig. 1 – Intraoperative picture: the artery forceps indicates the site of perforation in the fundus of the uterus.

post-operative period. She was put on empirical injection cefixime 1 g IV 8 hourly, injection amikacin 750 mg IV OD and injection metronidazole 500 mg IV 8 hourly. Pus culture report received on the 3rd post-operative day reported *Escherichia coli* sensitive to ceftazidime, imipenem, amikacin hence cefixime was replaced by injection ceftazidime 1 g 8 hourly. Attempts at extubating the patient failed as she did not maintain blood oxygen saturation when off-ventilator. She developed bilateral pneumonia by the 7th post-operative day. In spite of manoeuvres such as repeated bronchoscopic lavage and aggressive chest physiotherapy, patient's lung condition continued to deteriorate. Subsequently she developed multiple organ dysfunction and expired on the 21st post-operative day. Histopathological examination of the uterus was reported as pyometra with no evidence of any underlying malignancy.

Discussion

Pyometra is the accumulation of purulent material in the uterine cavity. Its reported incidence is 0.01–0.5% in gynaecologic patients.² However, the incidence of pyometra becomes much higher with age and indeed its incidence is 13.6% in elderly patients. Median age of presentation is 65 years and less than one-third cases are associated with underlying malignancy.⁴ Pyometra is associated with postmenopausal bleeding, vaginal discharge and cramping pain.⁵ Our patient was unusual in that she was asymptomatic before the onset of peritonitis. Spontaneous perforation of the uterus is thought to occur at a site of degenerative or necrotic change. Cervical occlusion may be caused by malignant or benign tumours, radiation cervicitis, atrophic cervicitis, infection, or congenital anomalies.⁶ In our case, it was probably the result of stenosis of postmenopausal cervix. Spontaneous perforation of a pyometra has been described in literature as isolated case reports. Less than 50 cases have been described in published English literature so far and they usually present as localised pelvic abscesses.^{2,5,7} However, spontaneous perforation of pyometra presenting primarily as

diffuse peritonitis, as in our case, is even more unusual.^{3,7} Generalised pain abdomen with associated tenderness and guarding are clinical features of peritonitis. There was no pneumoperitoneum noticed in plain abdominal X-ray examination. Indeed, a review indicates that pneumoperitoneum is seen only 56% of cases of hollow viscus perforation.⁸ CECT scan and/or MRI scan was not done in our case as she had presented with generalised peritonitis and thus merited an immediate exploratory laparotomy. In most cases reported earlier, spontaneously perforated pyometra is a diagnosis made intra-operatively when the original clinical diagnosis had been gastrointestinal perforation.^{1,3,4,6} The treatment of ruptured pyometra is immediate laparotomy, peritoneal lavage, drainage, and simple hysterectomy as was done in our case. Prognosis in cases of perforated pyometra is variable. Those not associated with malignancy have better prognosis as compared to those cases that are associated with malignancy.⁹ Unfortunately our case had a fatal outcome secondary to the fact she could never be extubated in the post-operative period and then developed pneumonia while on ventilator. The poor lung function is probably attributable to the pre-existing COPD which was complicated by the stress of illness and subsequent surgery. In conclusion, surgeons need to be aware of the possibility of a ruptured pyometra when confronted with acute abdomen in cases of elderly women.

Conflicts of interest

All authors have none to declare.

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