Short Communication

Spontaneous Perforated Pyometra with an Intrauterine Device in Menopause: a Case Report

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SUMMARY: Spontaneous perforation of the uterus is rare and only several cases have been reported in the English medical literature. Most of the patients had gynecological malignancy and almost all were associated with cervical occlusion. We report a case of diffuse peritonitis resulting from spontaneously perforated pyometra with an intrauterine device (IUD) inserted for more than two decades. This case differs from others in that the cervical canal was not occluded. In the absence of other possible causes of uterine perforation, the etiology in this case is mostly likely hemorrhagic necrosis related to the long-term IUD.

Pyometra, a collection of purulent material in the uterus, is an uncommon gynecologic entity. Spontaneous rupture of pyometra is a rare cause of generalized peritonitis. Only several cases have been reported in the English medical literature, some of which were associated with gynecological malignancy. We treated a patient with generalized peritonitis due to ruptured pyometra with an intrauterine device (IUD) inserted for more than 20 years. No evidence of malignancy or other cervical disease was found. Several features deserve emphasis from the comparison with other published case reports.

A 69-year-old woman visited the hospital presenting abdominal pain, fever episode, vomiting, and anorexia for one day. For 2 weeks prior to admission, she also had preceding purulent vaginal discharge. She did not have diabetes mellitus and had never had sexually transmitted diseases. Four normal vaginal deliveries were reported without other operative history. On physical examination, she looked acutely ill with profound septic shock (body temperature 36.9°C, pulse rate 73 beats per minute, and blood pressure 47/27 mmHg). Palpation of her abdomen was soft without distention. However, general tenderness with muscular guarding was recognized. The results of laboratory studies on admission revealed multiorgan failure. Computed tomography visualized an IUD with free air. She was diagnosed with diffuse peritonitis and a perforated gastrointestinal tract was suspected. Emergent laparotomy was performed. At laparotomy, about 500 mL of seropurulent fluid was encountered in the peritoneal cavity. No abnormal findings were found in the gastrointestinal tract, liver, or gallbladder, but a necrotic-black area (approximately 20 mm in diameter) was found at the anterior wall of the uterus as well as perforation into the peritoneal cavity. The IUD was removed and two rubber drainage tubes were placed. Penicillin-resistant Bacteroides fragilis was isolated from the pus. Sequencing of the bacterial 16S ribosomal RNA gene identified the species.

Postoperatively, she received hemodialysis due to elevation of creatinine (4.2 mg/dL). Parenteral empiric antibiotics (imipenem, fluconazole, and metronidazole) were given for profound septic shock. The fever subsided on postoperative day 5 (POD5). The renal function returned to the normal range on POD6 and hemodialysis was discontinued. The liver function test returned to the normal range on POD18. From POD6, there was no more drainage from the rubber tubes. However, fever and leukocytosis occurred with 115 mL drainage again after imipenem was dispensed on POD9. Therefore, imipenem was continued and the fever was controlled. An episode of fever occurred again on POD18 in spite of the antibiotics. The leukocyte count elevated from 8,210 to 13,630/mm³ and C-reactive protein elevated from 2.87 to 10.27 mg/dL. Seven blood cultures were collected and oxacillin-resistant coagulase-negative Staphylococcus grew on POD9 and cefepime-resistant Stenotrophomonas maltophilia grew on POD18. An emergent 2nd laparotomy was done. The bladder and distal colon were found with adhesion at the previously perforated site of the uterus. The necrotic area became putrid, whitish and larger than previously at 30 mm in diameter. Supravaginal hysterectomy (SVH), bilateral salpingo-oophorectomy (BSO), and tube drainage were performed. The histological examination of the resected specimen revealed hemorrhagic necrosis without evidence of malignancy. The intensive antibiotics were continued, and she recovered uneventfully and was discharged on the 36th day after the first surgery.

Pyometra is a rare event in the general population but more common in elderly women. The incidence is 0.5% in gynecologic patients. However, it may rise to 13.6% among elderly patients (1). The cause of pyometra is occlusion of the cervical canal by malignant or benign tumors, surgery, radiotherapy or senile cervicitis. A spontaneous perforation of pyometra and subsequent diffuse peritonitis is rare, with the incidence being about 0.01 -0.05% (2). As the older population has been rising, peritonitis due to perforated pyometra may be encountered more frequently. The risk factors might include a decline in activity (1,3,4), incontinence (1,4), diabetes (5-9), and long-term IUD (10). It is well known that IUDs can contribute to the development of serious pelvic infections (11-16). The infection may occur in previously healthy women who were fitted with an IUD, possibly by ascending infection from the genital tract via the fallopian tubes. The condition is usually accompanied by bilateral

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salpingitis and may be severe with a fatal outcome. However, spontaneous perforated pyometra related to IUDs have rarely been reported. Suspected pathological factors are age-related involution of the uterus, circulatory insufficiency, and decrease of immunity against bacterial infections (1). The correct diagnosis has rarely been made preoperatively because the most common presenting symptoms are abdominal pain, vomiting, nausea, and fever of short duration. The most common preoperative diagnosis is generalized peritonitis, pneumoperitoneum, and perforation of the gastrointestinal tract. Most patients receive a hysterectomy, but the mortality rate is high. In this case, we performed laparotomic peritoneal lavage with drainage in the initial operation and SVH with BSO in the next operation due to poor control of infection by antibiotics. This shows that a hysterectomy might be the best choice for a perforated pyometra.

In conclusion, the possibility of a perforated pyometra should be considered when an elderly woman presents with acute abdominal pain with an IUD. Removing the IUD is mandatory in postmenopausal women. When peritonitis caused by a perforated pyometra is actually diagnosed, emergency surgery is indicated. These patients are elderly and in poor general condition. Intensive care with strict management of respiration and circulation is essential. Their management is often difficult, and hysterectomy with BSO may be the best choice of procedure.

REFERENCES