CASE REPORT

PYOMYOMA IN A POSTMENOPAUSAL WOMAN: A CASE REPORT

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Abstract. Pyomyoma (suppurative leiomyoma of the uterus) is a rare condition associated with a high fatality rate. Only surgical intervention is lifesaving. It usually develops in association with either recent pregnancy or in postmenopausal patients who have underlying vascular disease. Since 1945 only 15 cases of pyomyoma have been reported in the literature. We present a rare case of pyomyoma in a 64-year-old woman with a brief review of the literature.

INTRODUCTION

Pyomyoma, or suppurative leiomyoma, is a rare but serious complication of uterine leiomyomas. It can evoke both diagnostic and therapeutic difficulties, leading to potential complications, such as bacteremia, uterine rupture, and even death. Most cases occur in relation to pregnancy or menopause, and are caused by ascending infection from the lower genital tract. The triad of: 1) bacteremia or sepsis; 2) leiomyoma uteri; and 3) no other apparent source of infection, should suggest the diagnosis of pyomyoma (Greenspoon *et al*, 1990).

Since 1945, only 15 cases of pyomyoma have been reported (Greenspoon *et al*, 1990; Prahlow *et al*, 1996; Tobias *et al*, 1996; Yang *et al*, 1999; Gupta *et al*, 1999; Genta *et al*, 2001; Lin *et al*, 2002), and the mortality has been documented to be high as 21%. The high mortality rate probably reflects delayed diagnosis. We describe herein a rare case of spontaneously occurring pyomyoma in a postmenopausal woman.

CASE REPORT

A 64-year-old postmenopausal woman was seen in the gynecology outpatient department (OPD) with a complaint of mild lower abdominal pain and low-grade fever on and off for 1 month. The fever was not associated with chills or rigors, and there were no other localizing signs or symptoms. She also gave a history of a gradually increasing lower abdominal mass of 10 years duration.

General examination revealed mild pallor only. Abdominal examination revealed a firm, nontender, irregular mass with varigated consistency and restricted mobility arising from the pelvis, occupying the entire abdomen. The spleen and liver were not palpable and there were no signs of ascites. Speculum examination showed a pale vagina and an atrophied cervix, which was pushed high up. All the laboratory tests were normal except a hemoglobin level of 8 g/dl and a total leukocyte count of 15 x 10^9/l with 75% neutrophils. Ultrasonography of the abdomen and pelvis revealed multiple submucosal, intramural and subserosal leiomyomata in the uterus with cystic degeneration (10 cm across) in the largest fibroid. The uterus and ovaries could not be seen separately.

A clinical impression of leiomyomata of the uterus with cystic degeneration and a differential diagnosis of an ovarian tumor were made. Under coverage of broad-spectrum antibiotics the patient was taken to theatre for laparotomy. Intraoperative findings showed the uterus (weighing 3.5 kg) to be replaced by multiple leiomyomata and bilateral atrophied ovaries.

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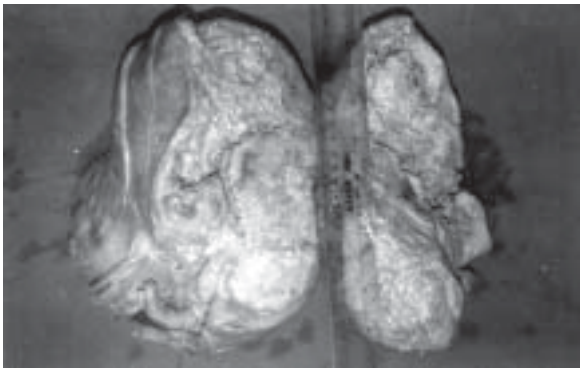

Fig 1–Hysterectomy specimen showing multiple leiomyomata and cystic degeneration with pus in one of them.

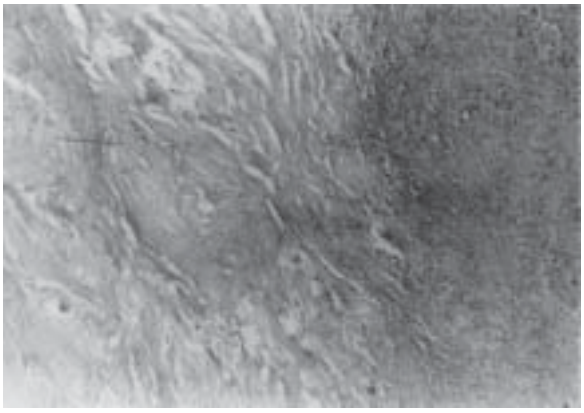

Fig 2a–Leiomyoma with hyaline degeneration and infarction (H & E stain; x100).

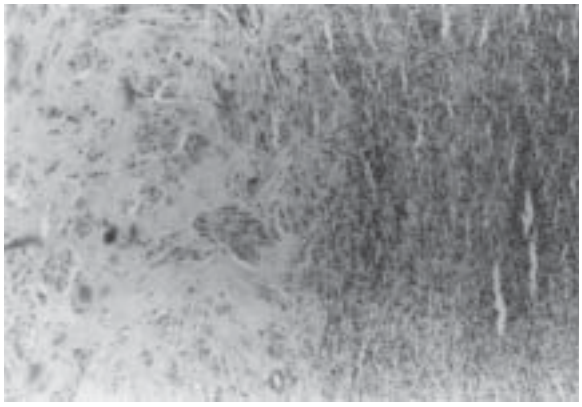

Fig 2b–Leiomyoma with hyaline degeneration and neutrophilic abscess (H & E stain; x100).

A total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed. On serial sectioning of the uterus the largest fibroid showed cystic degeneration filled with 2 liters of greenish pus, which on culture grew *staphylococcus aureus*. The patient responded well to the surgery and antibiotic therapy and was discharged on the 11th day. The patient was recently evaluated in the gynecology OPD at 2 years with no symptoms.

Grossly, the panhysterectomy specimen measured 22 x 23 x 10 cm. Serial section of the uterus showed multiple subserosal and intramural leiomyomata varying in size from 2 to 11 cm. The largest fibroid showed cystic and hyaline degeneration with a locule containing pus (Fig 1). The endometrial cavity could not be identified, as it was distorted by the fibroid. Multiple sections examined revealed leiomyomata with hyaline degeneration, infarction (Fig 2a) and neutrophilic abscess formation (Fig 2b). Focal collection of lymphocytes and plasma cells was also seen. No pleomorphism or mitoses were identified in any of the sections. The cervix, both ovaries, and the fallopian tubes were within normal limits.

DISCUSSION

Pyomyoma has had only rare occurrences in the postantibiotic era. While approximately 75 cases of pyomyoma were reported between 1871-1945, only 15 cases have been reported since (Greenspoon *et al*, 1990; Prahlow *et al*, 1996; Tobias *et al*, 1996; Yang *et al*, 1999; Gupta *et al*, 1999; Genta *et al*, 2001; Lin *et al*, 2002). Recently Lin *et al* (2002) reviewed 15 cases (including one caused by *Candida*) of pyomyoma reported since 1945. Seven out of the 15 cases were related to pregnancy or abortion, another seven occurred in postmenopausal women, and the remaining case was of Edwardsiella tarda bacteremia (Yang *et al*, 1999) complicated by acute pancreatitis and pyomyoma.

The complications associated with leiomyomas during pregnancy (degeneration, infarction and secondary infection) are probably due to their rapid growth due to hormonal changes. Ascending infection can accompany abortion either spontaneously or by uterine instrumentation (Tobias *et al*, 1996). In postmenopausal women the incidence of associated vascular pathology (diabetes and hypertension) is high. Associated atherosclerosis is thought to contribute to de-

generation, necrosis and infection (Greenspoon *et al*, 1990). Our patient was neither a diabetic nor a hypertensive and did not have any history of intervention to suggest a possible portal of infection. In our case, leiomyoma necrosis due to vascular insufficiency may have been the predisposing factor for the development of pyomyoma.

Pyomyoma is more common in submucosal leiomyomas because their blood supply is relatively tenuous and their position adjacent to the uterine lumen predisposes them to ascending infection. Most authors believe that a pyomyoma is caused by ascending infection from the lower genital tract. Lymphatic or hematogenous spread of infection may be a cause in some of the cases of pyomyoma. Recently, Genta *et al* (2001) reported a pyomyoma in a diabetic post-menopausal woman with *Streptococcus agalactiae* endocarditis and deep venous thrombosis of the right external iliac and femoral veins. The organisms causing pyomyoma are diverse, and include gram-positive and gram-negative bacteria.

There are reports of single and multiple abscesses varying in size from 7 to 15 cm (Greenspoon *et al*, 1990). Pyoperitonitis, septicemia and adult respiratory distress syndrome are life-threatening complications associated with this condition. Even in the present era of broad-spectrum antibiotics, surgical therapy is essential to cure a pyomyoma. Adverse outcomes may occur due to a missed or delayed diagnosis due to the rarity of the condition. The majority of patients (5 of 7) in the postmenopausal group initially had an insidious course, but a fetal outcome may result if surgery is delayed. Three of these 7 patients died while awaiting surgery or in the immediate postoperative period (Genta *et al*, 2001).

In conclusion, the diagnosis of pyomyoma, although very rare, should be borne in mind in patients with leiomyomas who develop unexplained fever or abdominal pain. A high index of suspicion can help in the early diagnosis and prompt treatment of an otherwise fatal condition.

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