Postpartum Pyomyoma

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Leiomyomata are common benign tumors of the uterus and female pelvis. Myomas have been reported in 25% of Caucasian American women and 50% of African-American women.[1] The true incidence is unknown, but descriptions of 50% have been found at postmortem examinations.[2] Considering the high incidence of uterine myomata in women of reproductive age, they are reported as complications in only 2% of pregnancies.[3] Pyomyoma (suppurative leiomyoma) a rare complication results from infarction and infection of a leiomyoma.[4] Without a strong clinical suspicion and surgical intervention, fatalities may occur. Since 1945, only 15 cases have been described in the literature, mostly in pregnant or postmenopausal women after ascending infection. This report documents a pyomyoma that presented as a postpartum enlargement of a previously known leiomyoma. This case is unique because the patient did not undergo a hysterectomy at the time of exploratory laparotomy. Six months after the procedure, normal cyclical bleeding was noted.

Key words: leiomyoma ■ pyomyoma

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Case Description

A 29-year-old G1P1001 African-American female presented 21 days postpartum, status postvaginal delivery of a 3,260-g male, Apgars 8/9. The pregnancy was complicated by chronic hypertension and a pelvic mass consistent with leiomyomata. An adherent placenta required manual removal; no placental pathology was reported. Seven days postpartum, the patient presented to another institution with dysuria, fevers and chills. A presumptive diagnosis of urinary tract infection was treated with a three-day course of sulfamethoxazole/trimethoprim. The patient presented to our institution with a 14-day history of a rapidly enlarging abdominal mass, nausea, vomiting, fevers, pelvic and abdominal pain. She denied sexual activity, placement of foreign body or instrumentation of the uterus prior to presentation to our institution.

General Physical Examination

Her vital signs were: temperature 39.3° C, pulse 115/min, B/P 131/71, respiratory rate 23/min. Upon abdominal examination, there was a 34-week size tender midline mass, no ascites, nonpalpable liver, nonpalpable spleen and no costovertebral tenderness. Except for tachypnea and tachycardia, the cardiorespiratory examination was otherwise unremarkable. Upon pelvic examination, there was a 30-cm tender midline mass with a palpable tender right fundal nodule extending to the right upper quadrant.

Renal and liver function tests were normal. A complete blood count revealed a hemoglobin of 9.9 g per deciliter, a hematocrit of 29.3% and a leukocyte count of 33,000 mm^3.

Imaging studies of an abdominal and pelvic ultrasound revealed a large mass 27x30 cm, without free fluid in the culdesac. A computerized tomogram revealed a small uterus with a large complex cystic mass, 15x17x25 cm extending to the right upper quadrant with peripheral calcifications. Large amounts of ascitic fluid were noted in the upper abdomen.

Postpartum endometritis with degenerating myomas were the initial admitting diagnoses. Despite a five-day course of intravenous ampicillin, gentamicin and metronidazol, the mass enlarged to

40 cm with persistent temperature elevations to 38.9° C. Blood and urine cultures were negative. Tumor markers were obtained: CEA = 1.0NG/ml, CA125 = 39U/ml and CA 19-9 = 15.0 U/ml.

Hospital day 6, the patient underwent surgical exploration. The findings were 1,000 cc of foul-smelling, thick, yellow, green purulent fluid; dense adhesions; multiple pockets of purulent exudate; involuted uterus of 18–20 weeks; a large mass extending from the right fundal portion of the uterus into the upper abdomen; and normal appearing adnexa (Figure 1). After extensive lysis of adhesions, the large mass was dissected from the uterus (Figure 2). After copious irrigation was performed, the bowel was fully evaluated, the abdomen closed and patient taken to the recovery room in stable condition.

The patient's postoperative course was uneventful. Intravenous antibiotics were continued for seven days. Discharge occurred postoperative day 8. The pathology specimen was a 2,700-g, 24x18x9-cm mass, yellow, necrotic, 2-cm thick, firm, white-to-pink capsule that exuded pus. The final diagnosis: pyomyoma with acute and chronic inflammation and abscess formation; leiomyoma with central coagulative necrosis. Aerobic and anaerobic cultures obtained from the specimen did not reveal bacterial growth. At the six weeks' postoperative visit, the patient had a 14-week size uterus and reported normal menses.

DISCUSSION

Since its first description in 1871, 90 cases of pyomyoma (including this case) have been reported.[4] As of 1945, only 15 cases have been described—three in premenopausal nonpregnant women, five in postmenopausal women and seven related to pregnancy.

Leiomyomas can be infected by bacterial seeding of necrotic foci. This occurs due to vascular insufficiency in postmenopausal patients or hemorrhage and necrosis during pregnancy. The infected leiomyoma can manifest as a painful abdominal or pelvic mass, as bacteremia without a clear source or as an acute abdomen due to intra-abdominal rupture.[5] Review of the literature confirms the difficulty in early diagnosis of pyomyomas secondary to mild or nonspecific symptoms. Pyomyomas following pregnancy or abortion develop insidiously over days to weeks as a result of extension of infection from the uterine cavity, from adjacent structures or via hematogenous or lymphatic spread.[6] In our patient, the pyomyoma may have developed from intrauterine inoculation after manual removal of the placenta. Organisms reported to cause pyomyomas include *Clostridium sp*, *Staphylococcus aureus*, *Streptococcus milleri*, *Steptococcus hemolyticus*, *Proteus sp*, *Serratia marcescens*, *Actinomyces myeri*, *Enterococcus faecalis*, and *Staphylococcus agalactiae*.[4,7-9]

Six cases of pyomyoma temporally related to pregnancy have been previously reported.[5] One second-trimester spontaneous abortion later was followed by pyomyoma.[9] Another patient had an intrauterine device and second-trimester septic spontaneous abortion prior to developing a pyomyoma.[8] A woman whose pregnancy had been complicated by preterm labor associated with uterine rupture later developed a pyomyoma.[7] A pyomyoma also occurred after a first-trimester elective abortion with hemorrhage.[6] Another pyomyoma presented as a pregnancy complication in an intravenous drug abuser.[7] An apparently normal pregnancy was complicated by pyomyoma.[4] All required abdominal exploration and total abdominal hysterectomy except for the last mentioned case, wherein a vaginal myomectomy was performed.[4]

The initial admitting diagnosis for this patient was degenerating myoma and postpartum endometritis. Standard conservative treatment for degenerating myoma includes analgesics, ice packs and bedrest.

Figure 1. Uterus with the pyomyoma attached.

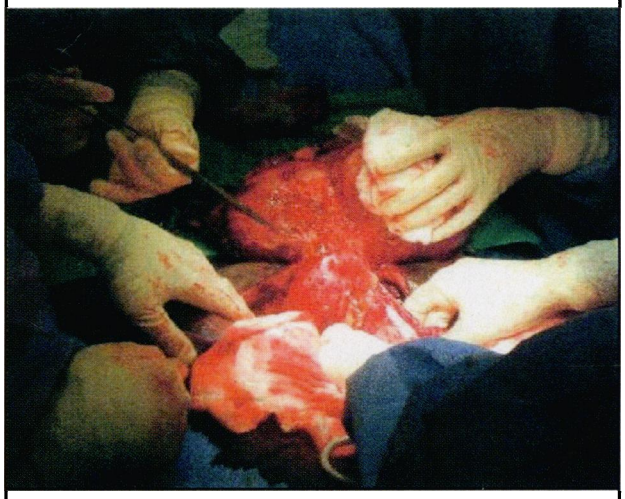
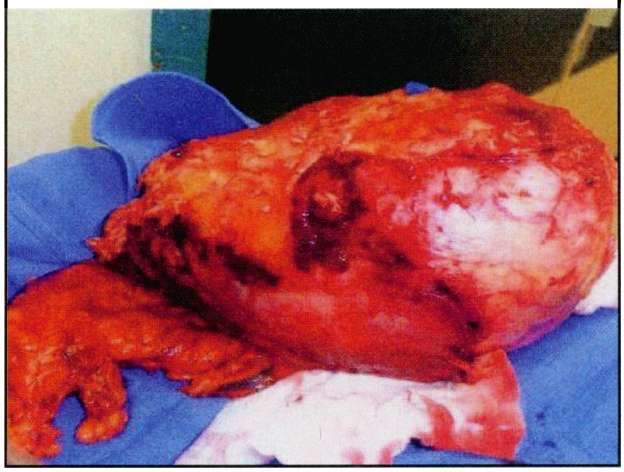


Figure 2. Surgical specimen, i.e. infected leiomyoma.



Standard treatment for postpartum endometritis includes intravenous antibiotics. This case represents the first reported pyomyoma that required abdominal exploration, presence of extensive infectious material requiring myomectomy, lysis of adhesions, pelvic and abdominal washing, but with retention of the uterus, fallopian tubes and ovaries.

The differential diagnosis of pyomyoma is extensive and includes any pelvic mass associated with signs of infection (e.g., pyometra, tubo-ovarian abscess, adnexal mass, etc.) or malignancy. In pregnant women, the differential diagnosis expands to threatened or spontaneous abortion, infected ectopic pregnancy and degeneration of leiomyoma.

Though pyomyomas are rarely reported, our case should increase the index of suspicion in populations with leiomyomas, unexplained fevers and abdominal pain. As this case and one other show,[4] the presence of pyomyoma does not invariably require a hysterectomy; with appropriate treatment, some patients with this disorder may have continued fertility potential.

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