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Myometrial Abscess: A Complication of Myomectomy of a Large Lower-Uterine Segment Myoma

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Abstract

Background: This article describes a patient with a history of two early miscarriages. She presented with menorrhagia and a recurrence of multiple fibroids. Laparotomy and myomectomy were performed and were complicated by a myometrial abscess. The diagnosis and management of such a rare complication are described. ***Case:*** A 39-year-old African American female (gravida 3, para 1) presented with a history of two early miscarriages, menorrhagia, and a recurrence of multiple fibroids. An ultrasound (US) scan revealed an enlarged uterus with at least six uterine fibroids. Laparotomy and myomectomy were performed. Four weeks later, this patient presented with complaints of pelvic pain, nausea, vomiting, constipation, and a fever of 1 day's duration. A US scan revealed a slightly enlarged uterus caused by a possible infected hematoma. The patient was admitted to the hospital and she was started on intravenous antibiotics after a blood culture was obtained. A computed tomography (CT) scan of her abdomen and pelvis confirmed the diagnosis of a myometrial abscess. This patient underwent CT scan–guided placement of a ''pigtail'' catheter in the myometrial abscess for continuous drainage. The result of the culture of the pus obtained from the abscess revealed the presence of multiple bacteria. The pigtail catheter was removed once there was no drainage 2 weeks after its initial insertion. ***Results:*** Two months after her discharge, a transvaginal US scan revealed that this patient's condition was essentially normal. ***Conclusions:*** This case report describes how a minimally invasive technique was used to manage a myometrial abscess, which is a complication of myomectomy. This report also illustrates the value of transvaginal US scanning for diagnosing such a pathology, and the roles US plays during management and follow-up. (J GYNECOL SURG 30:240)

Introduction

Uterine abscess and pyomyoma (suppurative leiomyoma of the uterus) is a very rare complication of myomectomy. Since 1945, only 19 cases have been reported.[1]

Pyomyoma usually develops in association with either recent pregnancy or in postmenopausal patients who frequently have underlying vascular disease. The triad of: (1) bacteremia or sepsis (2) leiomyoma uteri and (3) no other apparent source of infection should suggest the diagnosis of pyomyoma.[2] Many mechanisms have been reported for the development of pyomyoma: (1) direct extension of infection from the uterine cavity; (2) hematogenous spread; and (3) lymphatic spread.[1] Pyomyoma may pose both diagnostic and therapeutic difficulties, leading to potential complications, such as bacteremia, uterine rupture, and even death.[2] Uterine abscess has been reported secondary to endometrial cryosurgery.[3] Hysterectomy was the definitive treatment for both pyomyoma and uterine abscess in all previously reported cases. Obstructed labor from asymptomatic intramyometrial abscess resulted in cesarean section.[4] Pyomyoma after uterine artery embolization has also been reported.[5,6]

Case

A 39-year-old African American female, gravida 3, para 1, with a history of two early miscarriages presented with

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menorrhagia and recurrence of multiple fibroids. She had undergone laparotomy and myomectomy 9 years earlier. Transvaginal two-dimensional (2D) ultrasound (US) scanning revealed an enlarged uterus with at least 6 uterine fibroids—the largest being 9 cm in diameter (Figs. 1 and 2).

An attempt at robotic-assisted laparoscopic myomectomy was abandoned, as the largest fibroid was arising from the posterior wall of the lower-uterine segment, and because of the presence of multiple fibroids. Laparotomy and myomectomy were performed. The patient's postoperative course was complicated by a drop in hemoglobin by 2 g, requiring transfusion of 2 units of the patient's predonated blood. In addition, this patient had an element of paralytic ileus, which was resolved by supportive measures in 2 days and, therefore, the she was discharged to go home. Four weeks later, this patient presented with complaints of pelvic pain, nausea, vomiting, constipation, and a fever of 1 day's duration. An examination revealed that her temperature was 102°F, her pulse was 120 beats/minute, her blood pressure was 120/78, and respiration was 16 breaths/minute. Examination of her abdomen revealed left lower-quadrant tenderness, rebound tenderness, and guarding, but no rigidity. A transvaginal, 2D US scan revealed a slightly enlarged uterus caused by a possible infected hematoma in the posterior wall of the lower-uterine segment, measuring 52 × 42 mm in diameter. The possible infected hematoma was located where the largest fibroid was removed (Fig. 3).

The patient was admitted to the hospital and she was started on intravenous (I.V.) antibiotics (cefotetan and clindamycin) after a blood culture was obtained. The diagnosis of myometrial abscess was confirmed by a computed tomography (CT) scan of the abdomen and pelvis with and without contrast. No other pathology was detected. One day later, this patient underwent CT scan–guided placement, by an interventional radiologist, of a ''pigtail'' catheter in the center of the myometrial abscess for continuous drainage (see the two images in Fig. 4).

The patient continued to have spiking of her temperature for 2 days. Her blood culture was negative, but the result of the culture of the pus obtained from the abscess revealed gram-negative rods, gram-positive cocci, and *Staphylococcus aureus*. A consultation with an infectious disease specialist to assist in the management of this case. The infectious disease specialist added gentamicin and replaced the clindamycin with flagyl, as the patient had experienced diarrhea. Her temperature came down and remained normal thereafter. The size of the myometrial abscess decreased with time (Fig. 5A and B).

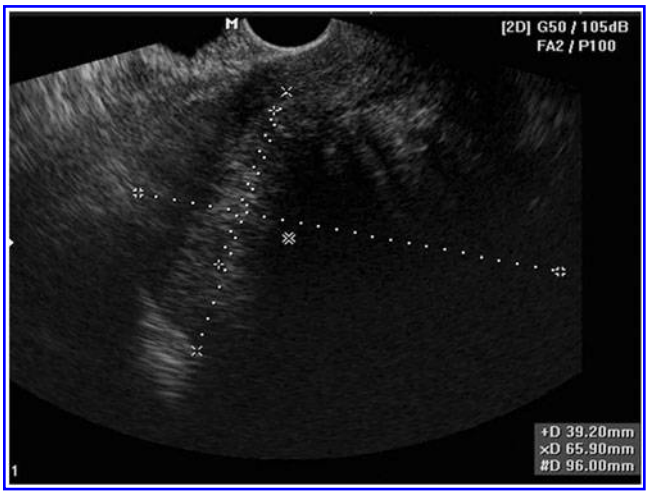

FIG. 1. Transvaginal two-dimensional ultrasound scan showing fibroid. The largest diameter is 9.6 cm.

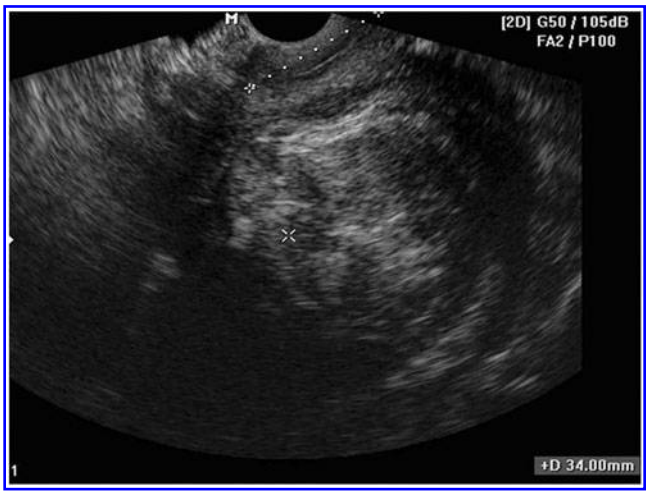

FIG. 2. Transvaginal two-dimensional ultrasound scan showing a large uterine fibroid in posterior wall of the lower uterine segment.

The pigtail catheter continued to drain more than 30 cc of fluid. Therefore, a decision was made to discharge the patient to go home with the pigtail catheter in place. She was discharged to go home 8 days after hospital admission with a pic line in place to continue the I.V. antibiotics, (cefepime, 1 g q 12 hours and flagyl, orally 500 mg t.i.d.) for an additional 14 days. Arrangements were made with home care to help with her care. The pigtail catheter was removed once there was no drainage, 2 weeks after its initial insertion (Fig. 6).

Results

The patient's pic line was removed after she completed the antibiotic course. Two months after her discharge, a

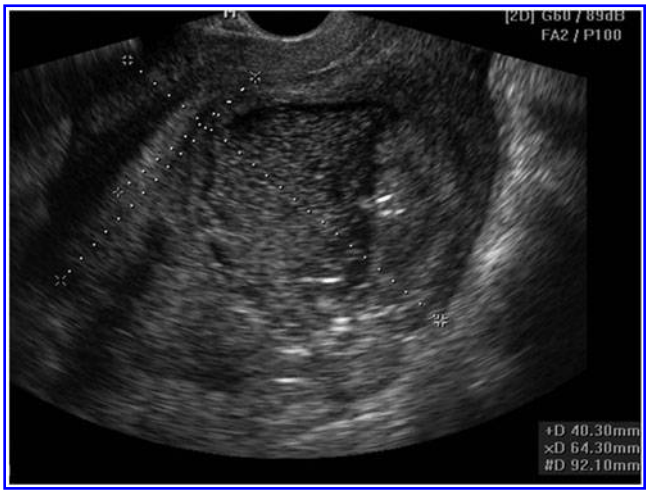

FIG. 3. Transvaginal two-dimensional ultrasound scan showing infected hematoma in the posterior wall of the uterus.

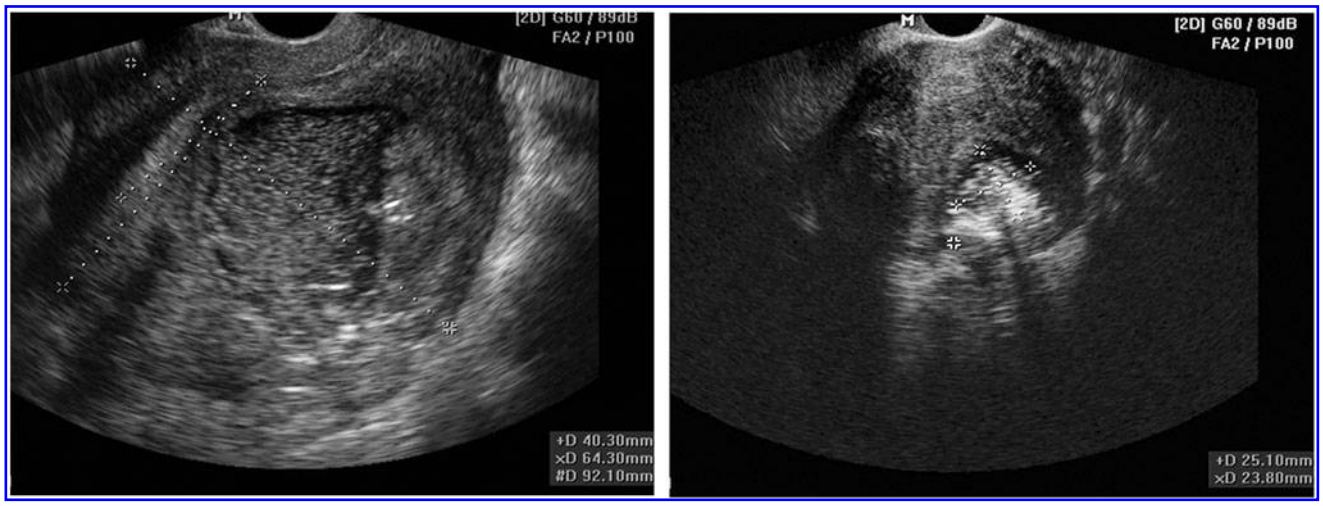

FIG. 4. Two views of transvaginal two-dimensional (2D) ultrasound (US) scan showing ''pigtail'' catheter in the center of the myometrial abscess.

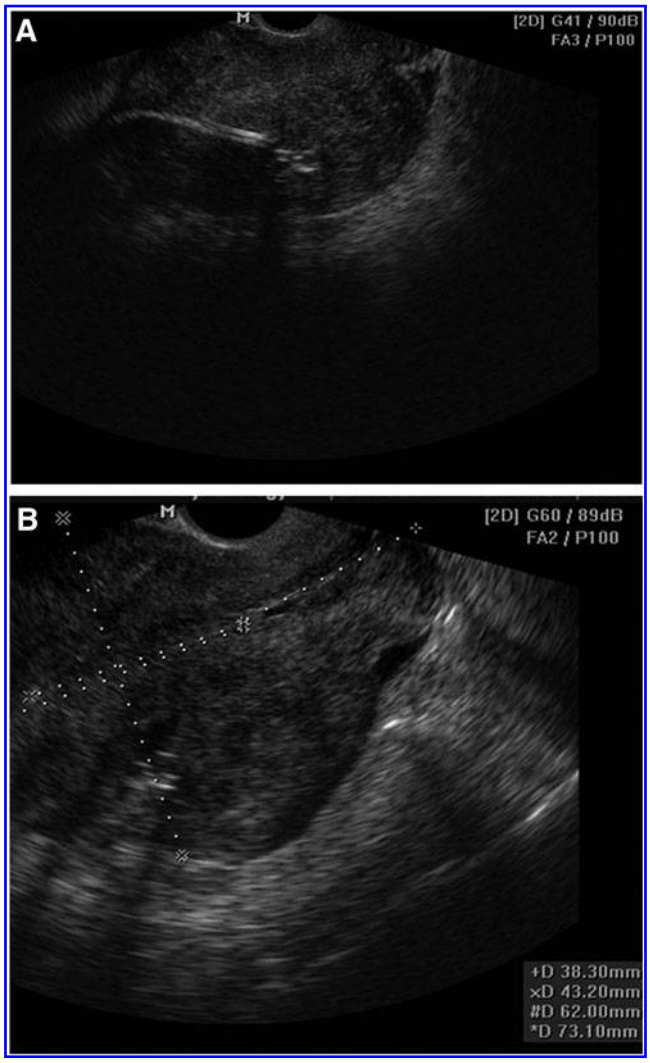

FIG. 5. **(A)** Transvaginal two-dimensional (2D) ultrasound (US) scan showing myometrial abscess decreasing in size with ''pigtail'' catheter in place. **(B)** Transvaginal 2D US showing myometrial abscess decreasing in size.

transvaginal US showed that her condition was essentially normal (Fig. 7).

Discussion

Almost all of the pyomyoma and uterine-abscess cases described in the literature were treated via hysterectomy,[1,3] and 1 case resulted in death of the patient.[2] To the current authors' knowledge, this is the first case report regarding treatment of a uterine abscess with a minimally invasive technique, thus preserving the uterus and the reproductive potential of the patient. Early diagnosis with the use of transvaginal 2D US, CT scanning and collaboration among different departments (obstectrics and gynecology, radiology, and infectious disease) in the hospital resulted in appropriate management and the best outcome for this patient.

The decision to proceed with laparotomy instead of da Vinci, robotic-assisted laparoscopic myomectomy was correct in the current authors' opinion, as the largest fibroid

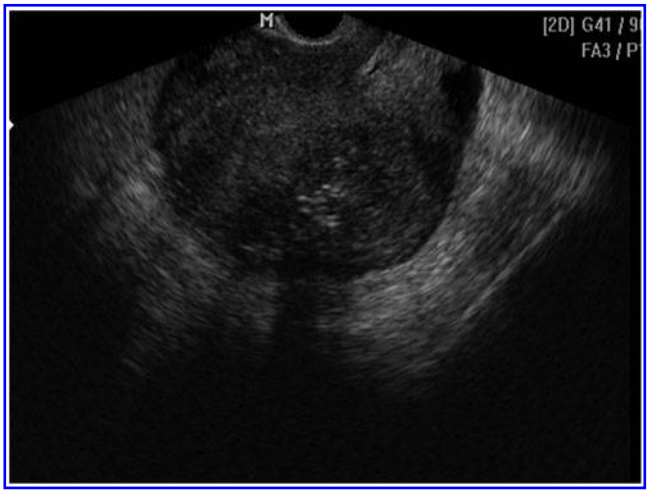

FIG. 6. Transvaginal two-dimensional ultrasound scan showing size of the uterus after 2 weeks of draining the abscess with ''pigtail'' catheter.

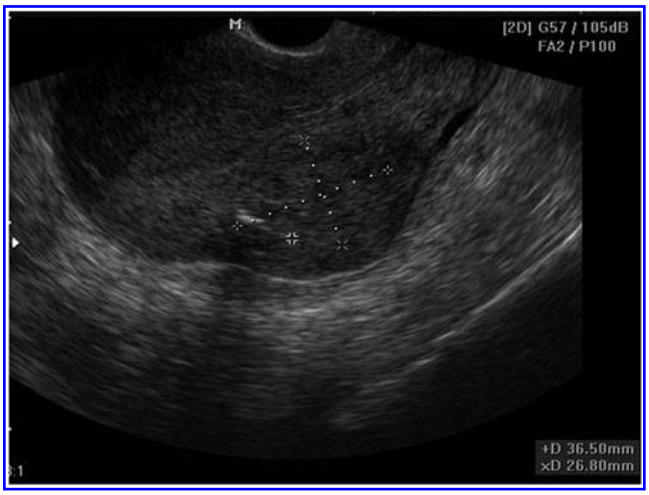

FIG. 7. Transvaginal two-dimensional ultrasound scan showing normal uterus after 2 months of treatment.

arose from her lower-uterine segment and because of the presence of multiple fibroids. The use of magnetic resonance imaging could have helped in reaching this decision prior to the procedure and avoiding laparoscopy in this patient. However, despite that, the use of a suprapubic transverse incision may have led to inadequate obliteration of the ''dead space'' in the myoma bed in the posterior wall of the lower-uterine segment. This may have resulted in an element of myometrial hematoma, as was suggested by the drop in hemoglobin and an element of ileus postoperatively, necessitating blood transfusion. This is the most likely cause for the formation of the myometrial abscess, secondary to infection of the myometrial hematoma. Based on the finding in this case, the current authors believe that a midline incision should be used in a case of a large myoma arising in the lower-uterine segment and cervical region to ensure adequate hemostasis and closure of the myoma bed and, in turn, prevention of hematoma formation and possible infection.

Conclusions

The purpose of presenting this case was to discuss a minimally invasive technique for manageing a myometrial abscess and to illustrate the role of transvaginal US in the diagnosis and follow-up of this abscess, as a very rare late complication of myomectomy. The current authors believe that the best way to avoid such a complication is to ensure complete obliteration of the dead space in the myometrial bed and to ensure complete homeostasis after myomectomy.

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Disclosure Statement

None of the authors has any competing financial interests nor do any of the authors have any commercial associations that might create a conflict of interest.

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