Infected Leiomyoma: A Case Report and Review of Literatures

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ABSTRACT

A 57-year-old, single Thai woman presented with a sudden onset of severe pain in the right lower quadrant of the abdomen. The patient had intermittent abdominal pain for five months. Previous pelvic examination and ultrasonography demonstrated a right adnexal mass compatible with right ovarian tumor or subserous myoma. An exploratory laparotomy revealed a ruptured infected leiomyoma. Total abdominal hysterectomy and bilateral salpingo-ophorectomy were performed. Antibiotics therapy was continued post-operatively until clinical improved. Although the infected leiomyoma is uncommon, the diagnosis should be considered in septic patients with history of leiomyoma, especially in those who had the risk of uterine infection.

Keywords: Infected leiomyoma; Pyomyoma; Leiomyoma

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A 57-year-old, single Thai woman presented with acute abdominal pain at the Gynecological Outpatient Unit, Siriraj Hospital, in June 2005. She had pelvic pain off and on for five months. Her menstrual history was unremarkable, and her last menstrual period was in 1998. The pain progressed in severity and frequency thus she sought for medical advice. The pelvic examination and ultrasonographic finding revealed a hyperechoic (mostly solid) irregular-outlined mass, 90 x 75 mm in diameter at the right adnexal area. A right ovarian tumor or subserous myoma was suspected. She was advised to have an operation but she did not come as planned.

Five months later, she came back with a sudden onset of severe pain in the right lower quadrant of her abdomen, five hours prior to admission. Her vital signs on admission revealed the temperature of 38.5°C, pulse rate 120/minute, respiratory rate 22/minute and blood pressure 110/60 mmHg. She looked mildly dehydrated. On physical examination, there was distended abdomen with guarding and tenderness of the entire lower abdomen. Bowel sound was absent. Pelvic and rectal examinations revealed a tender fixed, ill-defined midline mass of approximately 14-week pregnancy size.

Routine laboratory examination was obtained. The complete blood count showed a hemoglobin of 10.4 g, a hematocrit of 31%, a white blood count of 7,700/mm^3 with 80% polymorphonuclear cells. Urinalysis was unremarkable.

Shortly after admission an exploratory laparotomy was performed with a provisional diagnosis of a complicated ovarian tumor. The finding showed 200 cc of purulent exudates poring from a pelvic mass with a rupture site of 3 cm in diameter. The mass was at first sight believed to be an infected ovarian cyst or tubo-ovarian abscess. Further inspection showed that both adnexa were normal, but the site of rupture was from the uterus (Fig 1). The provisional diagnosis was then changed to pyomyoma. Total abdominal hysterectomy and bilateral salpingo-ophorectomy were performed. Purulent exudative peritoneal fluid was sent for examination and culture.

Gross examination of the specimen showed multiple subserous and intramural leiomyoma. There were two big subserous leiomyomas at the anterior and posterior aspects of the uterus, each measuring 10 cm in diameter. The anterior one showed infection with a 3-cm rupture site (Fig 2). Histologic examination, which confirmed the gross diagnosis, showed infected subserous leiomyoma with cystic degeneration, fibrosis and calcification. But bacteriologic culture revealed no growth.

The postoperative recovery period was uneventful. Her intermittent abdominal pain subsided. Intravenous antibiotics including ampicillin, gentamicin and metronidazole was administrated for 3 days, and ampicillin and metronidazole was continued orally for 4 days. She was discharged on the seventh postoperative day.

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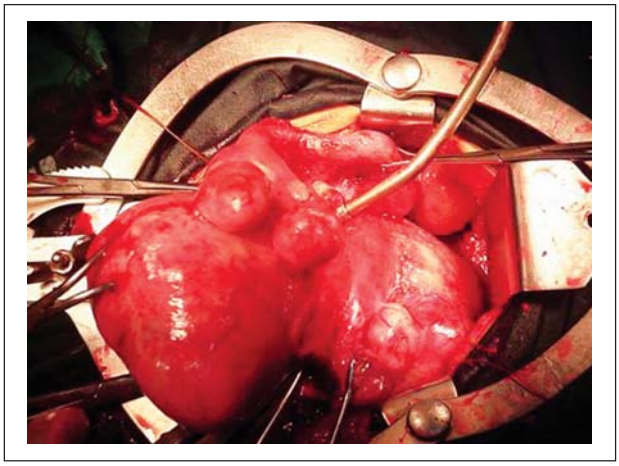

Fig 1. The intra-operative field revealed multiple leiomyomas and swollen both fallopian tubes.

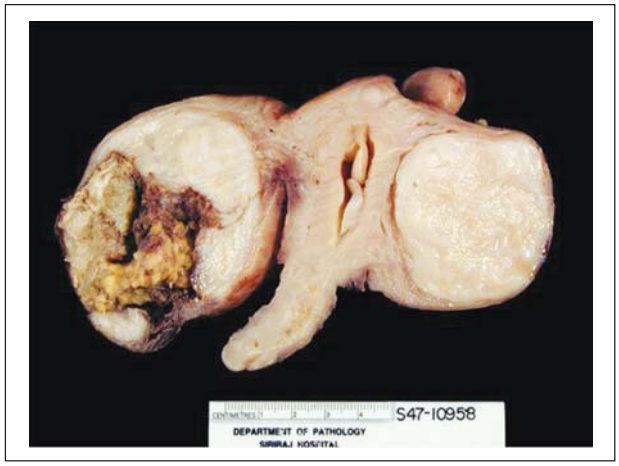

Fig 2. The bisected uterus revealed two big subserous leiomyomas at anterior and posterior aspect of uterus measuring 10 cm in diameter each. The anterior one showed infection with 3 cm rupture site.

DISCUSSION

Uterine myomas are mostly asymptomatic and occur in 40-50% of women over 35 years of age.[1] Suppurative degeneration or pyomyoma is, however, a very rare complication.[2] This case is one of the unusual causes of acute abdomen. The patient had a history of untreated pelvic mass that was suspected to be an ovarian tumor or subserous leiomyoma. The operative findings showed pus in ruptured subserous leiomyoma compatible with pyomyoma. She was completely cured after total abdominal hysterectomy and bilateral salpingoophorectomy and seven days of antibiotics treatment.

In a review of the literature form 1871-1945, Miller[3] found fewer than 75 cases of pyomyoma, and since then only 16 more cases have been described [2-17] (Greenspoon[11] reported 10 cases in 1990 and the other 6 cases was summarized in Table 1) Two important factors contributing this dramatic decrease are the availability of antibiotics and the more aggressive surgical treatment of women with uterine leiomyoma.[11]

In the 1945 review, Miller did not list any factors associated with the development of pyomyoma.[3] In a 1990 review, Greenspoon listed several risk factors for the development of pyomyoma. These included a recent history of pregnancy, following either vaginal or cesarean delivery; instrumentation of myomatous uterus (e.g. dilatation and curettage, intrauterine devices); ascending uterine infections; and cervical stenosis. In cases that are not associated with pregnancy, it frequently occurs in postmenopausal women with underlying vascular (hypertensive or diabetic) disease.[11]

Eight cases of pyomyoma were temporally related to pregnancy. One resulted in pelvic peritonitis in a 12-week pregnant woman followed by hysterectomy in situ[13]; two presented after a second trimester spontaneous abortion[9,17]; one occurred after an uneventful second trimester elective abortion[12]; one was associated with an intrauterine device with second trimester septic spontaneous abortion[10]; one was detected at 26 weeks gestation treated by cesarean section and myomectomy[14]; one was complicated by preterm labor and delivery associated with uterine rupture[6]; and one occurred in an appearing normal pregnancy.[5] Since 1945, none of the eight cases associated with pregnancy were fatal. There were three possible reasons for the better outcomes of this disease. Firstly, the recent pregnancy led to suspicion of a uterine source of infection and surgery when medical therapy was judged inadequate.[5,6,9,12,14] Secondly, five cases had a subacute presentation. The patients were not in septic shock.[5,6,9,12,14] Thirdly, three cases presented with obvious peritonitis leading to surgical exploration without delay.[6,13,17] The surgical procedures included hysterectomy in five patients, myomectomy is a reasonable alternative when possible.[14,17] The patient with a pedunculated pyomyoma delivered vaginally was an exception.[5]

The other eight published cases were not associated with pregnancy; they were reported since 1945 that it occurred in patients who were 49-68 years old.[2-4,7,8,11] Three cases died of septic shock before surgery.[3,7,11] Among the five cases that were cured, two patients had subacute presentation: one was a diabetic who presented with multiple utero-cutaneous fistulae[8]; the other had two months history of an abdomino-pelvic mass.[2] The third patient presented with an acute surgical abdomen due to the rupture of a pyomyoma, and there was no delay in surgical exploration.[4] The other two had fever with pelvic pain which occurred after uterine artery embolization in hypermenorrhea caused by leiomyoma[15] and symptomatic adenomyosis.[16]

Myoma may be infected via the following routes: 1) direct spreading of infection from the endometrial cavity; 2) extension of infection from adjacent structures such as infected adnexae or bowel; 3) hematogenous or lymphatic spreading from an occult or obvious infection elsewhere in the body.[11]

The differential diagnosis for pelvic mass associated with signs of pelvic peritonitis includes: infected ovarian tumor, tubo-ovarian abscess, pyometra (usually associated with endometrial cancer or cervical cancer), gastrointestinal tract infection (such as appendiceal abscess), and pyomyoma.

The course of disease in our patient was similar to that in Bedrosin's report in 1956[4] and Weiss' report in 1976[8] which happened in postmenopausal women without any risk factor. The postmenopausal status may itself be a risk factor, because of the decrease of vascular supply to the uterus in this age group.

In some cases, signs and symptoms of pyomyoma are mild or nonspecific. Therefore, it is difficult to diagnose this condition early. Pyomyomas following pregnancy or

TABLE 1. Summary of cases reported since 1990

Cases	Age/GPA	Underlying/Presentation	Treatment and outcome	Organisms
		Two cases : not related to pregnancy		
2001 Lohle		1 wk fever after UAE for hypermenorrhea caused by myoma uteri	TAH, Cured	-
2003 Huang	41 y G5P4A1	Incomplete vg expulsion of pyoadenomyosis, sepsis after UAE for symptomatic adenomyosis	Expulsion of pyoadenomyosis Antibiotics, Cured	-
		Four cases: related to pregnancy		
1996 Tobias	32 y G3P1A2	Elective abortion at 15 wk 10 wk later presented with pelvic pain	Initial Rx for endometritis TAH Rt SO, Cured	Enterococcus faecalis
1996 Prahlow	31 y G1	Pregnancy 12 wk with LLQ pain and mass	TAH BSO (enlarged perforated Lt cornu with purulent discharge), Cured	Staph. aureus
2001 Grune	44 y G1	Pregnancy 26 wk with 12 cm myoma presented with sepsis	C/S with myomectomy, Cured	Klebsiella pneumoniae
2003 Karcaaltincaba	36 y G1	Spont abortion at 17 wk, no D&C, 1 wk later presented with abdominal pain and sepsis	Myomectomy, Cured	Peptpstrep. Tetradrus

abortion develop over a few days to weeks after the infection is introduced presumably at the time of pregnancy termination.[6] However, if the patient presents with obvious peritonitis, urgent surgical therapy is necessary.[4,6,8-10,12-17]

Ruch summarized a series published prior to 1928 and noted that death occurred in 10 of 34 cases (29%).[6] These data included a series of reports by Kelly and Cullen with four deaths in 13 cases (30%).[18] Greenspoon also reported in 1990 that the mortality rate in cases published since 1945 was not better, i.e., three deaths in ten cases.[11] But six cases after 1990 are all cured after surgery, hysterectomy or myomectomy, indicating the importance of early detection and early surgical intervention.

CONCLUSION

Pyomyoma is one of the unusual causes of sepsis. This diagnosis should be considered in septic patients with history of leiomyoma, especially those who have a risk of uterine infection. The risks include postpartum, post-abortion, uterine intervention, intrauterine device, and post-menopausal patient who had underlying vascular disease. Early recognition in suspected cases and urgent surgical intervention with appropriated antibiotics are mandatory to improve the outcome of treatment.

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บทคัดย่อ

การอักเสบของเนื้องอกกล้ามเนื้อมดลูก: รายงานผู้ป่วยหนึ่งราย และการทบทวนวรรณกรรม

อรรถพล ใจชื่น พ.บ., สุวนิตย์ ธีระศักดิ์วิชยา พ.บ.

ภาควิชานิติเวชศาสตร์-นรีเวชวิทยา, คณะแพทยศาสตร์ศิริราชพยาบาล, มหาวิทยาลัยมหิดล, กทม.10700, ประเทศไทย

รายงานผู้ป่วยหญิงอายุ 57 ปี มาโรงพยาบาลด้วยอาการปวดท้องน้อยเฉียบพลัน ผู้ป่วยมีอาการปวดท้องเป็น ๆ หาย ๆ มา 5 เดือน เคยได้รับการตรวจภายในและคลื่นเสียงความถี่สูงสงสัยเนื้องอกรังไข่หรือเนื้องอกมดลูก การผ่าตัดพบว่าเป็นเนื้องอกมดลูกซึ่งมีการอักเสบเป็นหนอง จึงทำการตัดมดลูกและรังไข่ทั้ง 2 ข้าง หลังจากนั้นให้ยาปฏิชีวนะต่อจนอาการดีขึ้น

แม้ว่าการอักเสบของเนื้องอกกล้ามเนื้อมดลูกจะพบได้ไม่บ่อย แต่ก็ควรอยู่ในการวินิจฉัยแยกโรคของผู้ป่วยเนื้องอกกล้ามเนื้อมดลูกที่มาด้วยอาการของการติดเชื้อโดยเฉพาะรายที่มีความเสี่ยงต่อการติดเชื้อของมดลูก

CONTINUING MEDICAL EDUCATION **CME Quiz**

เฉลย CME ฉบับเดือนกันยายน 2548

Death from Volatile Substance Abuse

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1. ต่อไปนี้เป็นวิธีการเสพสารระเหย ยกเว้น

A. sniffing
B. snorting
C. bagging
D. finging
E. squirting

คำตอบ B

2. กลไกการเสียชีวิตจาการเสพสารระเหยที่พบได้มากที่สุด คือ

A. กลไกความเป็นพิษต่อหัวใจ
B. กลไกความเป็นพิษต่อปอด
C. กลไกความเป็นพิษต่อระบบประสาท
D. กลไกความเป็นพิษต่อตับ
E. กลไกความเป็นพิษต่อระบบเลือด

คำตอบ A

3. Hippuric acid เป็นสารอนุพันธ์ของ

A. trichloroethylene
B. xylene
C. toluene
D. benzene
E. chloral hydrate

คำตอบ C

4. ข้อใดผิดเกี่ยวกับการเก็บรักษาตัวอย่างเพื่อการตรวจวิเคราะห์สารระเหย

A. การระเหยได้ของสารเป็นสาเหตุสำคัญของการสูญเสียสารระเหยในตัวอย่าง
B. การสูญเสียนี้ยังคงเกิดขึ้นในกรณีที่เอาตัวอย่างออกมาตรวจโดยไม่ได้เปิดภาชนะ
C. ฝาปิดภาชนะที่ดีควรแน่นสนิทและทำด้วยวัสดุที่สารระเหยไม่สามารถซึมผ่านได้
D. การจัดการใด ๆ กับตัวอย่างควรกระทำที่อุณหภูมิ (-5) - 4°ซ
E. การเก็บตัวอย่างควรกระทำภายหลังการผ่าชันสูตรศพ

คำตอบ E

5. ปัจจัยที่มีผลต่อการตรวจวิเคราะห์สารระเหยมีดังนี้ ยกเว้น

A. การทำปฏิกิริยาระหว่างสารระเหยกับสารที่เป็นส่วนประกอบอยู่ในเมตริกซ์
B. คุณสมบัติการระเหยได้ของสาร
C. โครงสร้างทางเคมีของสาร
D. ความผิดปกติทางด้านเมทาบอลิซึม
E. ความเสถียรของสาร

คำตอบ D