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# Pyomyoma after abortion: Uterus conserving surgery is possible to maintain fertility. Case report



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## ABSTRACT

**INTRODUCTION:** Pyomyoma is a rare complication associated with high rates of morbidity and mortality.

**PRESENTATION OF CASE:** We report the case of a 28-year-old nulligravida patient presenting pyomyoma following a spontaneous abortion at fourteen weeks and four days. Fourteen days following spontaneous miscarriage she was referred to the hospital with abdominal pain and fever. An antibiotic treatment was initiated. However, after ten days, the patient's condition deteriorated and a decision for an emergency laparotomy made. The pyomyoma was successfully resected and the patient's postoperative recovery was uneventful. A new pregnancy was confirmed two years later.

**DISCUSSION:** The diagnosis of pyomyoma can be difficult but surgical treatment is often indicated. Performing a prompt myomectomy avoids the need for hysterectomy, preserving future fertility.

**CONCLUSION:** Pregnancy is possible following uterine sparing treatment of pyomyoma.

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## 1. Introduction

Uterine fibroids are a frequent pathology but pyomyoma (also called infected or suppurative leiomyoma) is a rare complication resulting from the bacterial colonization of an infarcted leiomyoma. Early diagnosis is important as it is associated with high rates of morbidity and can lead to fatal results [1].

Moreover, maintaining fertility in young women is crucial. Here we present a case of pyomyoma successfully managed with antibiotics and uterus conserving surgery, resulting in a successful pregnancy two years later.

## 2. Presentation of case

The patient was a 28-year-old African-woman (gravida 3, para 0, past medical history of one miscarriage and two abortions) who had a medical history of asymptomatic uterine leiomyomas. The largest measured 25 cm. A spontaneous abortion occurred at 14 weeks and 4 days. Ultrasonography revealed no placental remnants.

She was referred to the Emergency Department with fever and significant pelvic pain, fourteen days following spontaneous abortion. On admission, vital signs showed a temperature of 38°C, pulse rate of 105/min, blood pressure of 13.3/9.3 kPa and a respiratory rate of 16/min. Physical examination revealed offensive vaginal loss, abdominal tenderness and painful palpation of a large myoma extending to the umbilicus.

Blood tests revealed a raised C-reactive protein of 368 mg/L, raised white cell count at  $17 \times 10^9/L$ , anemia with Haemoglobin of 95 g/L, platelets at  $549 \times 10^9/L$  and PT time at 68%. Blood cultures were negative. Ultrasonography demonstrated a significant heterogenous leiomyoma and an endometrial thickness of 10 mm.

A contrast enhanced computed tomography (CT) scan was subsequently performed, revealing a large pelvic mass measuring  $16 \times 18 \times 17$  cm, containing air and heterogeneous tissue suggesting necrosis of a uterine fibroid. Three additional masses were noted in the right lumbar region and iliac fossa measuring 10 cm,  $5 \times 3$  and  $5 \times 4$  cm diameter, compatible with uncomplicated fibroids. Free intraperitoneal fluid in the right lumbar region and right iliac fossa was present, not associated with any pneumoperitoneum.

A provisional diagnosis of endometritis was made and conservative treatment with broad spectrum antibiotics initiated: Amoxicillin/clavulanic acid 1 g three times per day and Ofloxacin 400 mg two times per day.

After 10 days of medical treatment, a deterioration of the patient's clinical status was observed with persistent fever, persistence of biological inflammatory syndrome ((C- reactive proteine 440 mg/mL, leukocytosis  $20 \times 10^9/L$ , Procalcitonin 29 µg/L), occurrence of bleeding disorders with a 49% PT time, cholestasis (PAL

Abbreviation: CT, computed tomography.

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**Fig. 1.** Axial section of CT scan: myoma with air gaz and fluid level.

235 UI/L, GGT 307 UI/L) and electrolyte disorders with persistent hypokaliemia at 2,35 mmol/L.

The patient was transferred to the intensive care unit. A repeat CT scan was performed which showed persistence of an aspect of reshapes of the necrobiotic myoma complicated with an abscess as supported by the air fluid level (Fig. 1).

As her health condition was worst, we decided to realize an exploratory laparotomy.

During Surgical exploration, 500 mL of a thick reddish-brown fluid was found immediately along with multiple myomas. The largest one of these, situated in an anterior position and sizing about 20 cm, was found in septic necrobiosis deforming the left side of the uterus at the level of the insertion of the left annex. After an extensive dissection to free the uterus from adhesions, a selective myomectomy of a large myoma of 17 × 15 × 11 cm was performed. Padding and hemostatic knots were made using a Vicryl suture. Finally, extensive lavage of the peritoneal cavity with warm normal saline was performed. It was decided to preserve the uterus and the other uterine fibroids.

The postoperative course was favorable under IV antibiotic treatment with Tazocilline, Metronidazole and Amikacin, secondarily relayed by Ofloxacin as a monotherapy regimen.

Culture of the peritoneal fluid yielded no growth of bacteria.

Histopathologic examination of the fibroid revealed a leiomyoma with advanced ischemic necrosis, inflammation and foci of abscess formation.

At one month postoperative follow up, the patient had a resumption of regular and normal menses and her pain had completely resolved. Pelvic ultrasound showed an increased volume of the uterus with the largest fibroid measuring 10 cm.

Two years later, the patient conceived spontaneously. The fetal growth was normal with an anterior placenta praevia (29 mm from the cervix). A cesarean section was performed because of previous myomectomy. We found some adhesions on the anterior wall of the uterus but no signs of uterine rupture. A corporeal hysterotomy was performed and a 3320 g baby delivered with Apgar's of 10. Post-operative recovery was unremarkable.

### 3. Discussion

Since its first description in 1871, less than a hundred cases of pyomyomas have been reported. Without appropriate treatment, the mortality rate is 20% [1].

Women who specifically vulnerable to myomatous infections include pregnant women, postpartum or post-abortion women, those with a history of instrumentation of the uterus, postmenopausal and immunocompromised women [2–5]. In the postpartum period women are at risk of myoma infection because of the increased risk of hemorrhage or ischemia of the fibroid resulting from hormonal changes.

In most reported cases of pyomyoma they occurred in the post-abortion period following endo-uterine instrumentation [5,6] only one case, similar to ours, did not occur after endo-uterine instrumentation [7]. Consequently, any infarcted leiomyoma can be complicated by an occult infection. The absence of endo-uterine instrumentation does not eliminate this diagnosis [8].

The triad sign of myoma, bacteremia and fever proposed by Greenspoon et al. without a clear source of infection should always raise the suspicion of a pyomyoma [9]. But the pyomyoma may present itself without any clear clinical sign [10]. The interval between the initial onset of symptoms and diagnosis varies greatly: pyomyoma may present themselves with abrupt onset or may extend to a year of incubation with progressive dissemination of the infection. In our case, the first diagnosis was a simple endometritis which caused a delay of surgical management. It was the unfavorable clinical and biological evolution under antibiotics treatment that lead to the final diagnosis.

The delay in diagnosis may have severe consequences such as rupture with peritonitis [11], renal cortical necrosis [12], deep vein thrombosis by compression [13], endocarditis [10], pancreatitis [14] and death [9]. So it is important to do the surgical treatment to make the diagnosis and treat the patient. It is important to recognize the need for surgical intervention and treat the patient accordingly.

In our case the CT scan assisted us in making the diagnosis. In some cases reports, the CT scan contributed to the diagnosis by showing a solid heterogeneous mass with cystic component. CT findings of ruptured pyomyoma including gas and debris inside the leiomyoma, discontinuity of the leiomyoma wall and free intra peritoneal gas and fluid [7]. In our case, we discovered a large heterogeneous mass with solid and liquid component and the presence of gas (Fig. 1). The differential diagnoses of a pelvic mass with fever are: endometritis with cervical obstruction, ruptured or tubo-ovarian abscess, aseptic necrobiosis and bowel invasion from a gynecologic malignancy [9]. Due to the low incidence and the type of patients affected the possibility of malignancy should never be excluded [8,10].

The most common treatment in literature is surgery associated with antibiotics. Most of the cases reported hysterectomy [12,13,15] as the definite surgical treatment while others reported performing a myomectomy alone [6,7,9,16–19]. Myomectomy allows fertility preservation and consequently it remains an important option for young women desiring future conception. In our case myomectomy was achieved and where possible represents a feasible alternative to hysterectomy. Preserving the uterus permits future pregnancies and enabled our patient conceived spontaneously after 2 years with a subsequent live birth. To our knowledge this is the first case in the literature with a successful pregnancy following treatment of a pyomyoma.

### 4. Conclusion

Although rare, the diagnosis of pyomyomas should be considered in patients with a fibroid uterus, presenting with signs of pelvic infection, even in the absence of recent endo-uterine intervention. Surgical treatment is often necessary and myomectomy may be reasonably carried out in order to preserve fertility. A successful spontaneous pregnancy is possible following surgical treatment.

**Conflict of interest**

None.

**Consent**

We obtained the patient' consent.

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

**Ethical approval**

The research committee of our department, September 5, 2015, approved this study.

**Author contribution**

Veronique Thoma and Cherif Youssef initiated the study. Cherif Youssef, Veronique Thoma and Israël Nisand contributed to the acquisition of the data. Anne Pinton and Gabrielle Aubry drafted the article, which was revised by all the authors

**Guarantor**

Israël Nisand and Cherif Youssef Akladios are the guarantors of this article.

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**References**

- [1] Z.H. Chen, H.D. Tsai, M.J. Sun, Pyomyoma a rare and life threatening complication of uterine leiomyoma, *Taiwan J. Obstet. Gynecol.* 49 (2010) 351–356.
- [2] D. Stroumsa, E. Ben-David, N. Hiller, D. Hochner-Celnikier, Severe clostridial pyomyoma following an abortion does not always require surgical intervention, *Case Rep. Obstet. Gynecol.* 2011 (2011) 364641.
- [3] E. Carballo Núñez, M. Vega Álvarez, E. Guldriés Nieto, M. Vieitez Villaverde, S. Cernadas Pires, C. López Ramón y Cajal, Pyomyoma after miscarriage in the second trimester of pregnancy, *Progresos de Obstetricia y Ginecología* 53 (4) (2010) 159–162.
- [4] J.A. Prahlow, J.O. Cappellari, A.S. Washburu, Uterine pyomyoma as a complication of pregnancy in an intravenous drug abuser, *South. Med. J.* 89 (1996) 892–895.
- [5] S.S. Das, M. Dogra, Y. Bala, Abscess in fibromyoma following instrumentation, *Int. J. Gynaecol. Obstet.* 45 (3) (1994) 285–287.
- [6] F.G. Ugurlucan, A.C. Iyibozkurt, S. Sen, O. Kuru, S. Berkman, Pyomyoma after dilatation and curettage for missed abortion, *Clin. Exp. Obstet. Gynecol.* 40 (1) (2013) 168–169.
- [7] M. Karcaaltincaba, G.S. Sudakoff, CT of a ruptured pyomyoma, *AJR Am. J. Roentgenol.* 181 (5) (2003) 1375–1377.
- [8] J.R. Chen, T.L. Yang, F.H. Lan, T.W. Lin, Pyomyoma mimicking advanced ovarian cancer: a rare manifestation in a postmenopausal virgin, *Taiwan J. Obstet. Gynecol.* 53 (1) (2014) 101–103.
- [9] J.S. Greenspoon, M. Ault, B.A. James, L. Kaplan, Pyomyoma associated with polymicrobial bacteremia and fatal septic shock: case report and review of the literature, *Obstet. Gynecol. Surv.* 45 (9) (1990) 563–569.
- [10] P.R. -Genta, M.L. Dias, T.A. Janiszewski, J.P. Carvalho, M.H. Arai, L.P. Meireles, Streptococcus agalactiae endocarditis and giant pyomyoma simulating ovarian cancer, *South Med. J.* 94 (5) (2001 May) 508–511.
- [11] S.K. Yeat, K.M. Chong, H.S. Pan, W.C. Cheng, J.L. Hwang, C.C. Lee, Impending sepsis due to a ruptured pyomyoma with purulent peritonitis: a case report and literature review, *Taiwanese J. Obstet. Gynecol.* 44 (1) (2005) 75–79.
- [12] K. Kuriyama, T. Makiishi, S. Maeda, T. Konishi, K. Hirose, Acute bilateral renal cortical necrosis complicating pyomyoma, *Intern. Med.* 49 (5) (2010) 511–512.
- [13] T.C. Wong, D.S. Bard, W. PeaceL, Unusual case of IUD-associated postabortal sepsis complicated by an infected necrotic leiomyoma, suppurative pelvic thrombophlebitis, ovarian vein thrombosis, hemoperitoneum and drug fever, *J. Ark. Med. Soc.* 76 (1986) 138–147.
- [14] C.H. Yang, C.K. Wang, Edwardsiella tarda bacteraemia- complicated by acute pancreatitis and pyomyoma, *J. Infect.* 38 (1999) 124–126.
- [15] Y. Kitamura, S. Ascher, G. Cooper, S.J. Allison, R.C. Jha, P.A. Flick, J.B. Spies, Imaging manifestations of complications associated with uterine artery embolization, *Radiographics* 25 (2005) S119–32.
- [16] H. Fletcher, R. Gibson, N. Williams, G. Wharfe, A. Nicholson, D. Soares, A woman with diabetes presenting with pyomyoma and treated with sub total hysterectomy: a case report, *J. Med. Case Rep.* 8 (3) (2009) 7439.
- [17] W.J. Walker, J.P. Pelage, Uterine artery embolisation for symptomatic fibroids: clinical results in 400 women with imaging follow up, *BJOG* 109 (2002) 1262–1272.
- [18] F. Kobayashi, E. Kondoh, J. Hamanashi, Y. Kawamura, K. Tatsumi, I. Konishi, Pyomyoma during pregnancy: a case report and review of literature, *J. Obstet. Gynaecol. Res.* 39 (1) (2013) 383–389.
- [19] M. Laubach, M. Breugelmans, M. Leyder, J. Demey, W. Foulon, Non surgical treatment of pyomyoma in the post partum period, *Surg. Infect.* 12 (1) (2011) 65–68.

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