

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/8204793>

# A Fatal Case of Clostridium sordellii Septic Shock Syndrome Associated With Medical Abortion

Article in *Obstetrics and Gynecology* · December 2004

DOI: 10.1097/01.AOG.0000142738.68439.9e · Source: PubMed

CITATIONS

24

READS

332

5 authors, including:



**Ellen R Wiebe**

University of British Columbia - Vancouver

124 PUBLICATIONS 1,401 CITATIONS

[SEE PROFILE](#)



**Edith Raphaëlle Guilbert**

Laval University

108 PUBLICATIONS 841 CITATIONS

[SEE PROFILE](#)



**Caitlin Shannon**

EngenderHealth

44 PUBLICATIONS 856 CITATIONS

[SEE PROFILE](#)



**Beverly Winikoff**

299 PUBLICATIONS 5,529 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Third stage of labour and postpartum haemorrhage [View project](#)



The Cost of Unintended Pregnancy [View project](#)

# Obstetrics & Gynecology

© 2004 The American College of Obstetricians and Gynecologists

Volume 104(5, PART 2) Supplement

November 2004

pp 1142-1144

## A Fatal Case of *Clostridium sordellii* Septic Shock Syndrome Associated With Medical Abortion

[Case Reports]

Wiebe, Ellen MD\*; Guilbert, Edith MD†; Jacot, Francis MD‡; Shannon, Caitlin MPH§; Winikoff, Beverly MD, MPH§

\*Department of Family Practice, University of British Columbia, Vancouver, British Columbia, Canada; †University of Laval, Laval, Quebec, Canada; ‡University of Sherbrooke, Sherbrooke, Quebec, Canada; and §Gynuity Health Projects, New York, New York

Address reprint requests to: Caitlin Shannon, Gynuity Health Projects, 15 East 26th Street, Suite 1609, New York, NY 10010; e-mail: caittspencer@yahoo.com.

Received December 3, 2003. Received in revised form February 6, 2004. Accepted March 18, 2004.

### Outline

- [Abstract](#)
- [COMMENT](#)
- [CONCLUSION](#)
- [REFERENCES](#)

### Abstract<sup>▲</sup>

**BACKGROUND:** Clostridia bacteria are infrequent human pathogens. In the obstetric and gynecologic literature, *Clostridium sordellii* infections have been very rarely reported. This is a case of infection following medical termination of early pregnancy with mifepristone and misoprostol.

**CASE:** A 27-year-old woman presented for termination of pregnancy at 5.5 weeks from her last menstrual period. She received mifepristone 200 mg orally followed by 800 µg vaginal misoprostol. Three days after administration of misoprostol, she complained of dizziness, pelvic pain, and bleeding. The next day, she experienced worsening of symptoms and was hospitalized. She developed pulmonary edema, ascites, and heart failure. Despite supportive measures, antibiotics, and hysterectomy, she died 3 days later. The post mortem examinations indicated that death was caused by shock secondary to *C sordellii* infection.

**CONCLUSION:** The frequency of infection following medical abortion is low. The rapid and fatal course of this infection is similar to other obstetric and gynecologic cases reported in the literature. Although providers should remain vigilant to the possibility of infection following medical abortion, the overall proven safety of medical abortion remains the same.

A 27-year-old woman presented August 16, 2001, for termination of early pregnancy. Her reproductive history included one vaginal delivery and a surgical abortion with no complications. Other than childhood asthma, there was no significant medical history. A transvaginal ultrasound examination revealed an intrauterine pregnancy consistent with 5.5 weeks after last menstrual period. On August 20, she was seen again. The hemoglobin was 13.6 g/dL, the hematocrit was 40.3%, and the white blood cell (WBC) count was 6,100/mm<sup>3</sup>. A *Chlamydia trachomatis* screen was negative, and the blood pressure was 95/60 mm Hg. The patient was given 200 mg mifepristone and 800 µg of misoprostol to

take vaginally 2 days later.

On August 23, she took 200 mg mifepristone orally, and 2 days later, she inserted 800  $\mu$ g misoprostol vaginally. She telephoned the clinic on August 27 while at work complaining of persistent bleeding heavier than menstruation accompanied by painful cramping. She had not taken any analgesics. She was advised to take an additional dose of misoprostol (800  $\mu$ g, vaginally) and 200  $\mu$ g of methylergonovine by mouth and to come to the clinic the following day.

On August 28, she presented at the clinic complaining of severe pelvic pain and dizziness. She was noted to have good color, a blood pressure of 90/60 mm Hg, and a pulse rate of 125 beats per minute (bpm). On bimanual examination, the uterus was tender but difficult to palpate. A small amount of serous discharge was seen coming from the cervical os. A transvaginal ultrasound examination revealed a completed medical abortion. A complete blood count was drawn, and the patient was sent home with analgesics.

On August 29, she called the clinic complaining of nausea and palpitations. The hemoglobin, measured the previous day, was 17.3 g/dL, the hematocrit was 51.1%, the platelet count was 281,000/mm<sup>3</sup>, and the WBC count was 21,000/mm<sup>3</sup> with a left shift. Later that evening, she presented to hospital with complaints of abdominal pain, nausea, vomiting, subjective sensations of fever and chills, decreased frequency of urination, slight vaginal bleeding, and foul-smelling discharge. Her temperature was 35.3° C, blood pressure was 90/60 mm Hg, pulse was 120 bpm, and O<sub>2</sub> saturation was 94% on room air. On examination, there was abdominal rebound tenderness with guarding and cervical motion tenderness. Pertinent laboratory results were as follows: WBC count 55,100/mm<sup>3</sup>, hemoglobin 19.9 g/dL, hematocrit 58.2%, platelet count 202,000/mm<sup>3</sup>, blood urea nitrogen 7.1 mmol/L (20 mg/dL), creatinine 90  $\mu$ mol/L (1.0 mg/dL), sodium 128 mmol/L, potassium 4.2 mmol/L. Blood gas analysis revealed pH 7.34, P<sub>CO</sub><sub>2</sub> 31.3 mm Hg, HCO<sub>3</sub> 16.4 mmol/L. The diagnosis was endometritis, "preshock," and dehydration.

On August 30, the patient was treated with ampicillin, gentamicin, and clindamycin, as well as oxygen, analgesics, and antiemetics. She developed hypotension with decreased oxygen saturation. Additionally, urine output decreased, complete blood count remained abnormal, and serum levels of sodium, potassium, calcium, and albumen were all low. She was treated with vigorous crystalloid therapy and potassium replacement and transferred to the intensive care unit.

Ultrasonography revealed no retained tissue in the uterus. A computed tomography scan revealed pleural effusion, ascites, and 2 small air bubbles in the vagina and cervix. The antibiotics were changed to piperacillin, tazobactam, and ciprofloxacin. The patient's condition continued to deteriorate, with increasing hemodynamic instability. An endometrial biopsy sample revealed moderate-to-severe necrosis and gram-positive rods.

On August 31, a hysterectomy was performed. Operative findings included ascites, edema of the pelvic tissue, and bluish discoloration of the uterus without crepitation. On September 1, the patient suffered refractory multiple organ system failure, and, despite intraaortic balloon therapy, experienced cardiac arrest and died. Final cultures, both from the endometrial biopsy and the surgical specimen, were positive for *C sordellii*, *Streptococcus milleri*, and *Peptostreptococcus* species. Autopsy revealed ascites, bilateral pleural effusions, and hemorrhagic gastritis.

## COMMENT<sup>▲</sup>

Clostridia are ubiquitous gram-positive, spore-forming, obligate anaerobes that are generally found in soil and in the alimentary tract of humans and other animals. Clostridial species have been isolated from the vaginas of 4–18% (average 11%) of normal healthy women.<sup>1</sup> The most common isolates are *C perfringens*.<sup>2</sup>

Infections with *C sordellii* are exceedingly rare, with only 22 cases reported in the literature. Eight cases were in obstetric or gynecologic patients, 7 after vaginal or cesarean deliveries, and 1 case of endometritis was reported in a woman with no known risk factors.<sup>3-8</sup> These women all developed septic shock that was uniformly fatal. Factors predisposing to endometritis or myometritis in postpartum women include trauma and necrosis of retained decidua. In the 7 reported cases of *C sordellii* infections in postpartum women, 2 had had cesarean deliveries, 2 had had episiotomy infections, and 1 had had a retained vaginal pack.

In the case reported here, in association with medical abortion, there was no trauma, no retained tissue in the uterus or vagina, and no other known predisposing factors. Additionally, the medications used to induce abortion in this case—mifepristone and misoprostol—have no known effects that could be considered contributing factors for this event. The rate of infection following medical abortion is reported to be between 0.09% and 0.5% and is generally lower than the rate of infection following surgical abortion.<sup>9</sup>

Because Clostridia are part of normal vaginal flora, it is unlikely the patient introduced the bacteria when she inserted the misoprostol into her vagina. Vaginal misoprostol has been used by thousands of women as part of a medical abortion regimen, with either methotrexate or mifepristone, with very low infection rates. Moreover, many other vaginal medications are used routinely, for example, antifungal agents for vaginal candidiasis, without an increase in endometritis or myometritis.

This case followed the clinical course reported in other cases of *C sordellii* sepsis, including absence of fever, absence of purulent discharge, high WBC count and hemoglobin level, minimal uterine tenderness and flu-like symptoms until the onset of symptoms and signs of shock.<sup>6</sup> The standard of care for postabortal endometritis is oral antibiotics not adequate to treat clostridial infection. Additionally, because of the nature of this infection, early recognition of its severity is uncommon. The majority of *C sordellii* infections are fulminant, and in reported obstetric and gynecologic cases, uniformly fatal.

## CONCLUSION<sup>^</sup>

This patient developed fatal septic shock secondary to infection with *C sordellii* after medical abortion with mifepristone and misoprostol. This syndrome is extremely rare, with only 8 obstetric or gynecologic cases previously reported. The source of this infection was likely the resident flora in the patient's vagina. The infecting organisms gained access to the upper genital tract, as can occur during menstruation, delivery, and spontaneous or induced abortion. Given the rarity of this infection and its virulence, it is unlikely that there was any way to prevent this death. Although physicians should remain vigilant for the symptoms and signs of infection following medical abortion, this case does not alter the overall proven safety of medical abortions induced with mifepristone and misoprostol.

## REFERENCES<sup>^</sup>

- 1.Hammill HA. Normal vaginal flora in relation to vaginitis. Obstet Gynecol Clin North Am 1989;16:329-36. [Bibliographic Links](#) [\[Context Link\]](#)
- 2.Sweet RL, Gibbs RS. Clinical microbiology of the female genital tract. In: Infectious diseases of the female genital tract. Baltimore (MD): Williams & Wilkins; 1995. p. 3-15. [\[Context Link\]](#)
- 3.Hogan SF, Ireland K. Fatal acute spontaneous endometritis resulting from *Clostridium sordellii*. Am J Clin Pathol 1989;91:104-6. [Bibliographic Links](#) [\[Context Link\]](#)
- 4.Golde S, Ledger WJ. Necrotizing fasciitis in postpartum patients: a report of four cases. Obstet Gynecol 1977;50:670-3. [\[Context Link\]](#)
- 5.Soper DE. Clostridial myonecrosis arising from an episiotomy. Obstet Gynecol 1986;68:26S-8. [Bibliographic Links](#) [\[Context Link\]](#)
- 6.McGregor JA, Soper DE, Lovell G, Todd JK. Maternal deaths associated with *Clostridium sordellii* infection. Am J Obstet

Gynecol 1989;161:987-95. [Bibliographic Links](#) [Context Link](#)

7.Bitti A, Mastrantonio P, Spigaglia P, Urru G, Spano AI, Moretti G, et al. A fatal postpartum *Clostridium sordellii* associated toxic shock syndrome. J Clin Pathol 1997;50:259-60. [Bibliographic Links](#) [Context Link](#)

8.Rorbye C, Petersen IS, Nilas L. Postpartum *Clostridium sordellii* infection associated with fatal toxic shock syndrome. Acta Obstet Gynecol Scand 2000;79:1134-5. [Context Link](#)

9.Kruse B, Poppema S, Creinin MD, Paul M. Management of side effects and complications in medical abortion. Am J Obstet Gynecol 2000;183:S65-75. [Bibliographic Links](#) [Context Link](#)

*Accession Number: 00006250-200411001-00007*

---

Copyright (c) 2000-2004 [Ovid Technologies, Inc.](#)

Version: rel9.1.0, SourceID 1.9087.1.443.1.123