

Woman, 36, With Fever and Malaise

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A 36-year-old Bengali woman with a history of well-controlled diabetes presents to the emergency department with complaints of feeling “unwell” for about two weeks. She does not speak English, and a hospital-provided phone translator is used to obtain history and explain hospital course. The patient is vague regarding symptomatology, describing general malaise and tiredness. She says she became “much worse” two days ago and has shaking chills, sore throat, headache, and non-productive cough, but she denies shortness of breath or chest pain. She also developed nausea and vomiting, stating, “I can’t keep anything down.”

She has not recently traveled out of the country and has no known sick contacts. Influenza activity is high in the area, and the patient has not received immunization. She had a “normal” menstrual period two weeks ago and firmly states, “There is no way I can be pregnant.” She admits to vaginal “spotting” off and on for the past two weeks without abdominal pain. She is married with six children and has no history of miscarriage, ectopic pregnancy, or induced abortion; she is not taking any form of birth control.

On exam, the patient is tachycardic, with a heart rate of 127 beats/min, and has a fever of 103.3°F. Blood pressure, respiratory rate, and pulse oximetry are normal. She appears unwell and dehydrated. Her mucous membranes are dry, but no skin rash is noted. There is no tonsillar swelling or exudate and no meningismus; the lung exam is clear, with no adven-

titious sounds. Abdominal exam demonstrates mild, generalized tenderness in the lower abdomen without peritoneal signs. No costovertebral angle tenderness is noted. Initial diagnostic considerations include sources of fever (eg, influenza, pneumonia, urinary tract infection, viral illness), or abdominal sources, such as appendicitis.

An upright anteroposterior chest x-ray shows no infiltrate, pleural effusion, or cardiomegaly. Laboratory results include a high white blood cell (WBC) count (16.9 k/mm³) with bandemia and normal electrolytes without anion gap. Rapid influenza A and B testing is negative. A urine pregnancy test is positive, and the urinalysis shows no infection but +2 ketones. Rh factor is positive. A serum quantitative β-hCG is 130,581 mIU/mL. Blood cultures are obtained, but results are not available.

Due to cultural differences, the patient is very reluctant to consent to a pelvic exam. After extensive counseling, she agrees to a bimanual exam only. The uterus is boggy and enlarged to about 12 weeks. There is exquisite uterine tenderness and purulent discharge on the gloved finger. The cervical os is closed, and there is scant bleeding.

A transvaginal ultrasound is obtained; it reveals a thickened endometrium with echogenicity, without increased vascularity, and no identifiable intrauterine pregnancy. The adnexa have no masses, and there is no free fluid in the endometrium (see Figures 1 and 2, facing page).

The patient is given broad-spectrum antibiotics and urgently transported to the operating room by Ob-Gyn for uterine evacuation. She is found to have a septic abortion due to retained products of conception (RPOC) from an incomplete miscarriage.

DISCUSSION

It is not uncommon for a woman to miscarry a very early pregnancy and not realize she had been pregnant.¹ Many attribute it to a “heavy” or unusual period. In one study, 11% of patients who denied the possibility of pregnancy were, in fact, pregnant.²

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Miscarriage is a frequent outcome of early pregnancy; it is estimated that 11% to 20% of early pregnancies result in a spontaneous miscarriage.³⁻⁵ Most resolve without complications, but risk increases with gestational age. When they do occur, complications include RPOC, heavy prolonged bleeding, and endometritis. *RPOC* refers to placental or fetal tissue that remains in the uterus after a miscarriage, surgical abortion, or preterm/term delivery (see Table, page 32, for additional terminology related to miscarriage and abortion). Because of increased morbidity, it is important to suspect RPOC after a known miscarriage or an induced abortion, or in a pregnant patient with bleeding.

Incidence and pathophysiology

Septic abortion is a relatively rare complication of miscarriage. It can refer to a spontaneous miscarriage complicated by a subsequent intrauterine infection, often caused by RPOC. Septic abortion is much more common after an induced abortion, in which there is instrumentation of the uterus.

The infection after a spontaneous miscarriage usually begins as endometritis. It involves the necrotic RPOC, which are prone to infection by the cervical and vaginal flora. It may spread further into the parametrium/myometrium and the peritoneal cavity. The infection may then progress to bacteremia and sepsis. Typical causative organisms include *Escherichia coli*, *Enterobacter aerogenes*, *Proteus vulgaris*, hemolytic streptococci, staphylococci, and some anaerobic organisms, including *Clostridium perfringens*.³

Death, although rare in developed countries, is usually secondary to the sequelae of sepsis, including septic shock, renal failure, adult respiratory distress syndrome, and disseminated intravascular coagulation.^{3,6,7} Pelvic adhesions and hysterectomy are also possible outcomes of a septic abortion.

Clinical presentation and evaluation

Many findings suggestive of septic abortion are non-specific, such as bleeding, pain, uterine tenderness,



FIGURE 1 Pelvic ultrasound showing thickened, irregular endometrium.

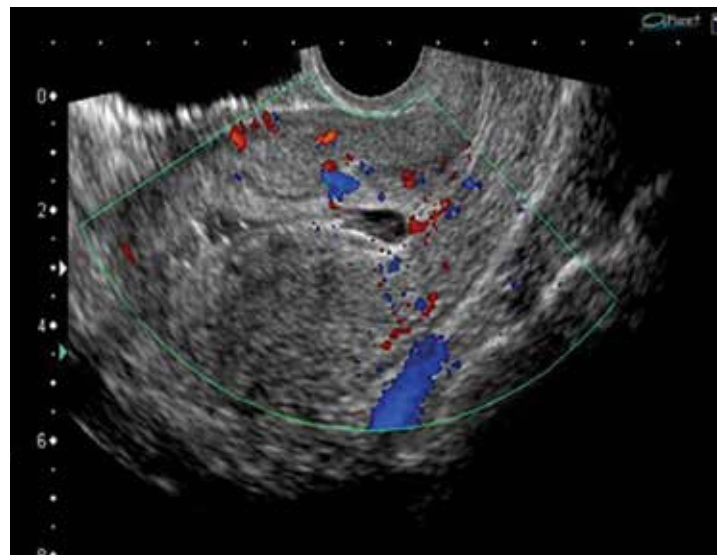


FIGURE 2 Pelvic ultrasound showing a complex heterogeneous mass without increased Doppler flow.

and fever. A combination of historical risk, physical exam, and laboratory and ultrasound findings will often be needed to confirm the diagnosis.

Fever is never to be expected in an uncomplicated miscarriage. Vaginal bleeding and some cramping are common after miscarriage; women will bleed, on average, between eight and 11 days afterward.⁵ Women who fall outside the normal range and experience prolonged bleeding, heavy bleeding, or severe

TABLE
Terminology of Miscarriage and Abortion

Term	Cervical os	Passage of product	Other considerations
Threatened	Closed	No	(+) Intrauterine pregnancy
Complete	Closed	Yes	(-) Intrauterine pregnancy
Inevitable	Open	Not yet	Passage of product imminent
Incomplete	Open	Some, but with delayed passage of the rest	(+) RPOC
Missed	Closed	No	(+) Intrauterine, but nonviable pregnancy
Septic	Open or closed	Will usually have RPOC	(+) Fever

Abbreviation: RPOC, retained products of conception.

abdominal pain should be evaluated.

A workup for patients with a possible septic abortion should include a complete blood count, blood culture with additional laboratory investigation if there is concern for bacteremia/sepsis, and type and screen for Rh factor and for possible blood transfusion, if needed.

All patients with postabortion complications should be screened for Rh factor; Rho(D) immune globulin (RhoGAM) should be administered if results indicate that the patient is Rh-negative and unsensitized. A quantitative β -hCG level can be obtained to confirm pregnancy. A single measurement will not be helpful; β -hCG can remain positive for weeks after an uncomplicated miscarriage. On the other hand, a low level does not exclude RPOC—the RPOC, if necrotic, may remain in the uterus without secreting hormone. The trend of β -hCG over time can be helpful if the diagnosis is unclear.

A careful physical exam, including a pelvic exam, should be performed. Assess for uterine tenderness, peritoneal signs, and purulent discharge from the cervix. An open cervical os is suggestive of RPOC, as the cervix closes quickly after a complete miscarriage, but a closed cervical os does not

exclude the possibility of RPOC or septic abortion. The amount of bleeding should be noted, along with any tissue or clots within the vaginal vault or cervix.

A pelvic ultrasound should be obtained in all patients concerning for a septic incomplete miscarriage. Ultrasound findings can be nonspecific, because small amounts of retained tissue can look like blood (a common finding after miscarriage). Ultrasound findings of heterogeneous, echogenic material within the uterus or a thick, irregular endometrium support a diagnosis of RPOC in patients considered at risk.^{8,9} Increased color Doppler flow is often seen with RPOC, but there

may be decreased flow in the case of necrotic RPOC. Ultrasound findings consistent with RPOC in a febrile, ill patient suggest a septic abortion.

Treatment and prognosis

Patients with a septic abortion require immediate evacuation of the uterus to prevent deadly complications; antibiotics may not be able to perfuse to the necrotic source of infection.¹⁰ Suction curettage is less likely than sharp curettage to cause perforation.

Broad-spectrum antibiotics should be administered. The bacteria associated with a septic incomplete miscarriage are usually polymicrobial and represent the normal flora of the vagina and cervix. The choice of agents recommended is usually the same as for pelvic inflammatory disease.¹¹

The treatment regimen typically includes clindamycin (900 mg IV q8h), plus gentamicin (5 mg/kg IV once a day), with or without ampicillin (2 g IV q4h).^{11,12} Alternatively, a combination of ampicillin, gentamicin, and metronidazole (500 mg IV q8h) can be used.

Further surgery, including laparotomy and possible hysterectomy, is indicated in patients who do not respond to uterine evacuation and parenteral

antibiotics. Other possible complications requiring surgery include pelvic abscess, necrotizing *Clostridium* infections in the myometrium, and uterine perforation.

OUTCOME FOR THE CASE PATIENT

The patient was started on IV ampicillin, gentamicin, and clindamycin and taken promptly for a suction dilation and curettage. Pathology later showed a gestational sac with severe acute necrotizing chorioamnionitis and extensive bacterial growth. This confirmed the diagnosis of a septic, incomplete miscarriage.

Blood cultures remained without any growth, and the patient was afebrile on the second postop day. The WBC count and β -hCG level trended downward.

The patient was discharged on a 14-day course of oral doxycycline and metronidazole. She was then lost to further follow-up.

CONCLUSION

The differential diagnosis in this ill, febrile patient was initially very broad. The importance of suspecting pregnancy in all women of childbearing age, especially those not using contraception, cannot be underestimated. The accuracy of patient history and recall of last menstrual period in de-

termining the possibility of pregnancy is not sufficiently reliable. **CR**

REFERENCES

1. Promislow JH, Baird DD, Wilcox AJ, et al. Bleeding following pregnancy loss prior to six weeks gestation. *Hum Reprod.* 2007;22(3):853-857.
2. Ramoska EA, Sacchetti AD, Nepp M. Reliability of patient history in determining the possibility of pregnancy. *Ann Emerg Med.* 1989;18(1):48-50.
3. Osazuwa H, Aziken M. Septic abortion: a review of social and demographic characteristics. *Arch Gynecol Obstet.* 2007;275(2):117-119.
4. Hure AJ, Powers JR, Mishra GD, et al. Miscarriage, preterm delivery, and stillbirth: large variations in rates within a cohort of Australian women. *PLoS One.* 2012;7(5):e37109.
5. Nielsen S, Hahlin M. Expectant management of first-trimester spontaneous abortion. *Lancet.* 1995;345(8942):84-86.
6. Eschenbach DA. Treating spontaneous and induced septic abortions. *Obstet Gynecol.* 2015;125(5):1042-1048.
7. Rana A, Pradhan N, Gurung G, Singh M. Induced septic abortion: a major factor in maternal mortality and morbidity. *J Obstet Gynaecol Res.* 2004;30(1):3-8.
8. Abbasi S, Jamal A, Eslamian L, Marsousi V. Role of clinical and ultrasound findings in the diagnosis of retained products of conception. *Ultrasound Obstet Gynecol.* 2008;32(5):704-707.
9. Esmailou H, Jamal A, Eslamian L, et al. Accurate detection of retained products of conception after first- and second-trimester abortion by color doppler sonography. *J Med Ultrasound.* 2015;23(7):34-38.
10. Finkielman JD, De Feo FD, Heller PG, Afessa B. The clinical course of patients with septic abortion admitted to an intensive care unit. *Intensive Care Med.* 2004;30(6):1097-1102.
11. CDC. Sexually transmitted diseases treatment guidelines, 2010. *MMWR Recomm Rep.* 2010;59(RR-12):1-110.
12. Mackeen AD, Packard RE, Ota E, Speer L. Antibiotic regimens for postpartum endometritis. *Cochrane Database Syst Rev.* 2015;2:CD001067.