Conservative management of second-trimester cervical ectopic pregnancy with placenta percreta

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Objective: To report successful conservative management of advanced cervical ectopic pregnancy with placenta percreta.
Design: Case report. Setting: University tertiary care hospital.
Patient(s): A 37-year-old woman with second-trimester cervical ectopic pregnancy and placenta percreta.
Intervention(s): Ultrasound-guided injection of potassium chloride into the fetal heart followed by multiple systemic methotrexate injections, removal of fetal bones, cervical cerclage suture, and Foley catheter placement for control of hemorrhage.
Main Outcome Measure(s): Low maternal morbidity and successful conservative management with preservation of fertility.
Result(s): The cervical ectopic pregnancy was treated successfully without significant morbidity; the uterus was preserved, and the woman was delivered of a full-term live fetus in the next pregnancy.
Conclusion(s): Advanced cervical ectopic pregnancy with placenta percreta is associated with high morbidity with surgical intervention. Conservative management with attendant low morbidity and uterus preservation is possible in advanced cervical ectopic pregnancy. (Fertil Steril® 2007;87:697.e13–6. ©2007 by American Society for Reproductive Medicine.)

Key Words: cervical ectopic pregnancy, potassium chloride, methotrexate, epoetin alfa, cerclage, Foley catheter

Cervical pregnancy is a life-threatening condition that is associated with unexpected occurrence of uncontrollable hemorrhage. Until the introduction of ultrasound, diagnosis of cervical ectopic pregnancy was difficult; it could be made only after uncontrollable hemorrhage and hysterectomy (1). Availability of ultrasound imaging permits early diagnosis of cervical ectopic pregnancy, and conservative management with preservation of uterus is possible.

A number of different approaches have been used in the conservative treatment of cervical pregnancy. These include curettage and tamponade, amputation of the cervix, cervical cerclage, Foley catheter placement in the cervical canal, internal iliac artery ligation, angiographic uterine artery embolization, systemic methotreaxate injection, and needle aspiration of the products (2–5, 6).

Advanced gestation and placenta percreta further complicates the cervical ectopic pregnancy. In patients with advanced ectopic pregnancy and placenta percreta, the management is difficult, and surgical management is associated with a high morbidity and mortality rate.

We report what we believe is the first case of a 15-week gestation cervical ectopic pregnancy with placenta percreta that was managed conservatively with the use of multiple steps.

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CASE REPORT

We obtained approval from our institutional review board for conservative management of cervical ectopic pregnancy.

A 37-year-old woman who was 15 weeks pregnant (G 6 P3023) with a history of intermittent painless vaginal bleeding that began at 7 weeks of gestation was referred for ultrasound evaluation. She had an ultrasound evaluation done at 7 weeks of gestation at another facility and was diagnosed with threatened abortion. Her obstetric history was significant for 3 cesarean deliveries, 1 termination of pregnancy, and 1 spontaneous abortion.

Transabdominal ultrasound imaging with the ATL HDI 5000 (Advanced Technology Laboratories, Bothell, WA) at the time of presentation showed an empty uterus with ballooning of the cervix (Fig. 1A). A cervical ectopic pregnancy with a live fetus of biometry that was consistent with 15 weeks of gestation that was compatible with her last menstrual period was noted. The placenta was anterior and percreta (Fig. 1B). Color flow Doppler imaging revealed placental blood flow that extended into the bladder wall that confirmed the presence of percreta.

After a discussion with the patient, we decided to manage her pregnancy conservatively because she desired future fertility, and we anticipated a high surgical morbidity because of placenta percreta.

With ultrasound guidance, 2 mL (2 mEq/mL) of potassium chloride was injected transabdominally into the fetal

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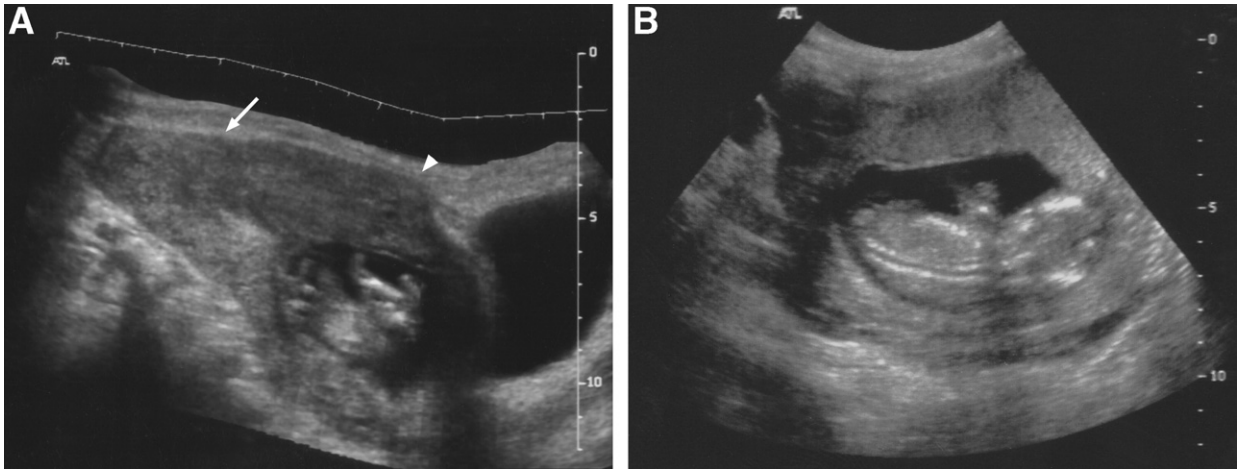
FIGURE 1

A, Transabdominal sonogram shows empty uterine cavity represented by the arrow; ballooning of the cervix and fetus in the cervix is represented by the arrowhead. **B,** Transabdominal sonogram shows fetus of biometry consistent with 15 weeks of gestation and placenta percreta.



Verma. Cervical ectopic pregnancy. Fertil Steril 2007.

heart, and 70 mL amniotic fluid was aspirated from the sac. Immediate arrest of fetal cardiac activity was confirmed by Doppler imaging. The patient received methotrexate 75 mg/sq body surface area IM after the procedure. She was admitted in the hospital, and on day 3 she received another dose of methotrexate 75 mg/sq body surface area with leucovorin (10 mg/m^2) rescue. She also received epoetin alfa 40,000 units SC.

At the time of her hospitalization, the β-hCG level was 31,145 mIU/mL, and her hemoglobin and hematocrit levels were 12.4 gm/dL and 35.8%, respectively. After fetal death and methotrexate injections, the β-hCG level continued to drop progressively (Fig. 2). The patient experienced moderate vaginal bleeding on day 15, and her hematocrit level dropped to 30.9%. She received another dose of epoetin alfa 40,000 units SC on day 15. She continued to have intermittent bouts of bleeding and received a third injection of epoetin alfa 40,000 units SC. The patient's hematocrit level, β-hCG level, and treatment with epoetin alfa are shown in the graph (Fig. 2). She required no blood transfusion.

On day 58, the patient was taken to the operating room for removal of retained fetal bones in the cervical canal. The procedure was performed with ultrasound guidance to avoid disruption of the placental implantation site. During the procedure, she had severe hemorrhage and required cerclage suture and placement of an inflated Foley catheter (26F) in the cervix to tamponade the bleeding. The bleeding was well controlled. Her postoperative hematocrit level was 25.4%, and she received a fourth dose of epoetin alfa 40,000 units SC. The patient was discharged home the next day.

The patient continued to have mild intermittent bleeding for several weeks, which was self-controlled. Follow-up ultrasound imaging was performed 1 week after the procedure and showed a hematoma 5.6 × 6.2 × 5.8 cm in the cervix at the placental implantation site. The patient was reassured, and the hematoma resolved gradually over a period of 8 weeks from the time of surgery. After the use of methotrexate treatment, the placental tissue in the bladder wall underwent resolution, and no placental tissue was detected on ultrasound scanning during the follow-up studies. The patient was advised to avoid pregnancy for 6 months.

She subsequently had a normal intrauterine pregnancy and was delivered of a full-term healthy baby by cesarean delivery without any complication.

DISCUSSION

Cervical ectopic pregnancy is a rare form of ectopic pregnancy. It accounts for approximately 0.15% of all ectopic pregnancies (1). The cause of cervical ectopic pregnancy is unclear. Curettage, Asherman's syndrome, previous cesarean delivery, previous cervical or uterine surgery, and in vitro fertilization are the likely causative or contributing factors. Delayed diagnosis and surgical management of cervical ectopic pregnancy are associated with significant morbidity and death.

With the availability of transvaginal ultrasound imaging, early diagnosis and conservative management of cervical ectopic pregnancy has now become possible. Raskin (4) suggested the criteria for ultrasound diagnosis of cervical ectopic pregnancy. Timor-Tritsch et al. (7) in 1993 sug-