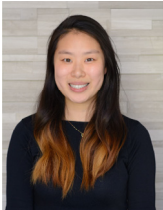


Arteriovenous Malformation Following Conservative Management of Cervical Pregnancy



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Abstract

Background: Medical management using potassium chloride feticide and methotrexate is often the first-line approach to cervical pregnancies.

Case: A 25-year-old woman presenting with a cervical ectopic pregnancy was unsuccessfully managed with conservative therapy, resulting in an arteriovenous malformation requiring a laparoscopic hysterectomy.

Conclusion: Conservative management of ectopic pregnancies is the treatment of choice for young women looking to preserve fertility. However, medical management is not without risk, and this case illustrates one such complication.

Résumé

Contexte : La prise en charge médicale par l'euthanasie fœtale au chlorure de potassium et au méthotrexate est souvent l'approche de première intention en cas de grossesse cervicale.

Cas : Les traitements conservateurs n'ont pas fonctionné pour une femme de 25 ans présentant une grossesse extra-utérine cervicale. Résultat : une malformation artérioveineuse nécessitant une hystérectomie laparoscopique.

Conclusion : La prise en charge conservatrice des grossesses extra-utérines est le traitement privilégié pour les jeunes femmes qui désirent préserver leur fertilité. Elle n'est cependant pas sans risque, comme l'illustre le cas décrit ici.

Key Words: Cervical ectopic pregnancy, methotrexate, conservative management, arteriovenous malformation

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INTRODUCTION

Cervical ectopic pregnancy is a life-threatening condition with a prevalence of 1 in 9000 pregnancies.¹ Women presenting with a cervical pregnancy are often young and hope to preserve fertility. Therefore, conservative management with potassium chloride feticide and methotrexate has been largely favoured over more radical, surgical treatment.² However, a conservative approach is not without risks. We present a case of conservatively managed cervical pregnancy in a woman presenting with a large arteriovenous malformation (AVM).

AVM has been reported following a caesarean scar ectopic pregnancy but never in the case of a cervical ectopic pregnancy.

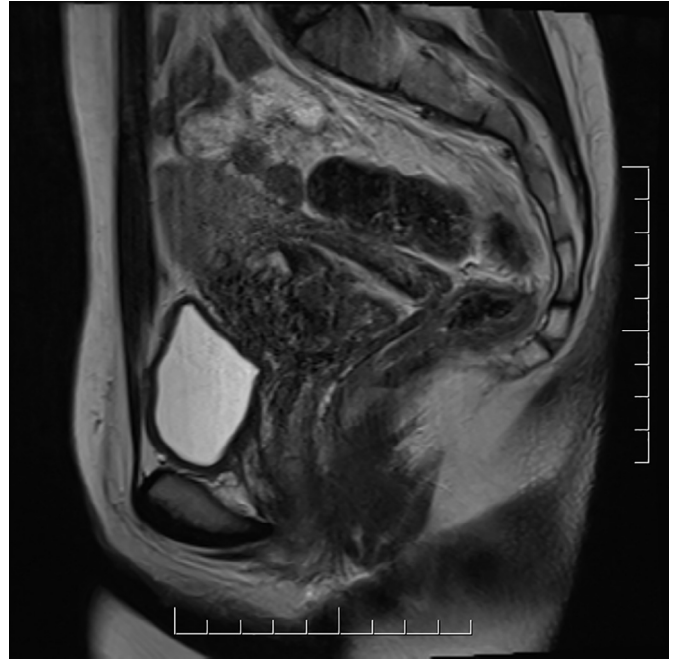
CASE

A 25-year-old gravida 2, para 1 presented to the emergency department following a routine first trimester ultrasound study that queried a pregnancy implanted near the cervical canal. Subsequent ultrasound examination showed a 10 + 4-week size live cervical pregnancy. The patient was asymptomatic. Her beta-human chorionic gonadotropin (β -hCG) level was 68 300 IU/L at presentation, and her hemoglobin was stable at 112 g/L. An MRI scan was obtained to map the pregnancy more accurately and confirmed a cervical implantation (Figure 1).

Figure 1. Sagittal T₁-weighted MRI scan of a cervical ectopic pregnancy before formation of an arteriovenous malformation.



Figure 2. Sagittal T₁-weighted MRI scan showing a large arteriovenous malformation at the site of the cervical ectopic pregnancy.



The patient wanted to preserve her fertility, and after extensive counselling, she embarked on medical management. She underwent ultrasound-guided fetal injection of 5 mL of 2 mmol/mL potassium chloride, followed by two courses of methotrexate 1 mg/kg/day alternating with leucovorin 0.1 mg/kg/day. Her β -hCG decreased to 47 700 (30% decrease) on post-admission day 5, and she was discharged home with weekly follow-up.

The patient came back to the emergency department 11 days following discharge with abdominal pain and light vaginal bleeding. The β -hCG had decreased to 3323 IU/L, and her hemoglobin was still stable at 115 g/L. Ultrasound findings were unchanged from the previous examination. She was hemodynamically stable and discharged home with outpatient management. Two months later, the β -hCG had decreased to 118 IU/L, and ultrasound showed a vascular gestation sac measuring 3.7 cm. A Doppler examination of the cervical canal showed enhanced vascularity and arteriovenous shunting. An MRI scan was performed to assess the cervix and found a gestational sac encased within the anterior wall of the upper cervix with aggressive vascularity (Figure 2).

Because this posed a high risk of bleeding, a decision was made to perform prophylactic bilateral uterine artery embolization with absorbable gelatin (Gelfoam), which immediately reduced uterine blood flow to the mass by

approximately 75%. After 6 months of normal menses, the patient returned to the emergency department with acute-onset vaginal bleeding. Her hemoglobin had dropped to 58 g/L, and she was resuscitated with fluids and packed red blood cells. An urgent embolization was performed using a Gelfoam slurry to obtain complete stasis of the uterine artery. Her vaginal bleeding subsided, but subsequent ultrasound examination showed persistence of the AVM with high-velocity arterial and venous flow, which was again confirmed with MRI. In an attempt to preserve fertility, a third embolization was performed using 300–500 μ m polyvinyl alcohol particles, but without any success in decreasing vascularity in the AVM (Figure 3).

After three failed angiographies and continued abnormal uterine bleeding symptoms, the patient was frustrated and expressed no desire to preserve future fertility. She was offered another attempted angiography, but she declined, opting instead for definitive management. She ultimately underwent total laparoscopic hysterectomy, bilateral salpingectomy, and bilateral internal iliac artery ligation. The cervical vascularity surrounding a ballooning cervix was appreciated at surgery (Figure 4). These vessels were sequentially coagulated and transected along with the left uterine pedicle. The patient had an uneventful postoperative course. Pathologic examination confirmed a large AVM involving the lower uterine segment and cervix.

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