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Case Report

Bilateral Uterine Artery Embolization as a Rescue Method in a Rare Case of Cervical Ectopic Pregnancy

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Abstract

Cervical pregnancy, being the second rarest form of ectopic pregnancy after abdominal pregnancy, is a difficult clinical entity to diagnose and manage in a young primigravida with no identifiable risk factors or associated symptoms. Further, early intervention is of utmost importance owing to the deleterious complications and high mortality associated with it if not addressed to. It is also difficult to choose a particular management approach for this out of the available options. We report a case of 23-year-old primigravida with 8 weeks of gestation, asymptomatic and with no underlying risk factors, diagnosed with cervical pregnancy during a routine antenatal scan. She was successfully managed with bilateral uterine artery embolization in conjunction with systemic methotrexate followed by suction and evacuation.

Keywords
- cervical
- ectopic
- embolization

Introduction

Cervical pregnancy is a rare form of ectopic pregnancy and constitutes 0.2% of all ectopic pregnancies.[1] It is defined as the implantation of the egg below the internal orifice of the cervix. Described for the first time in 1817, the hemorrhagic complications inherent in this ectopic implantation can be life-threatening.[2] Cesarean section scars, scarring from previous dilation and curettages, Asherman syndrome, cervical conization, pelvic inflammatory disease, smoking, intrauterine device use, anatomic anomalies, in vitro fertilization, and diethylstilbesterol exposure are the commonly encountered risk factors associated with cervical pregnancy.[3] However, occurrence of this rare clinical entity in a primigravida without risk factors is even rare. Given its high mortality, the diagnosis must be made early even in pregnant women without obvious risk factors. Because of its rarity, therapeutic approaches in practice are also different with varied frequency globally. A synergistic two-pronged approach of uterine artery embolization in conjunction with systemic methotrexate administration has shown high therapeutic efficacy.[4]

We report a case of cervical pregnancy diagnosed at 8 weeks gestation in a 23-year-old primigravida without risk factors, diagnosed by ultrasound, and managed by bilateral uterine artery embolization using Gelfoam particles followed by systemic methotrexate, and suction and evacuation thereafter. Postprocedure recovery was uneventful. This timely intervention with a multipronged approach led to a complication free therapy, preserving the quality of life and also the fertility of the patient.

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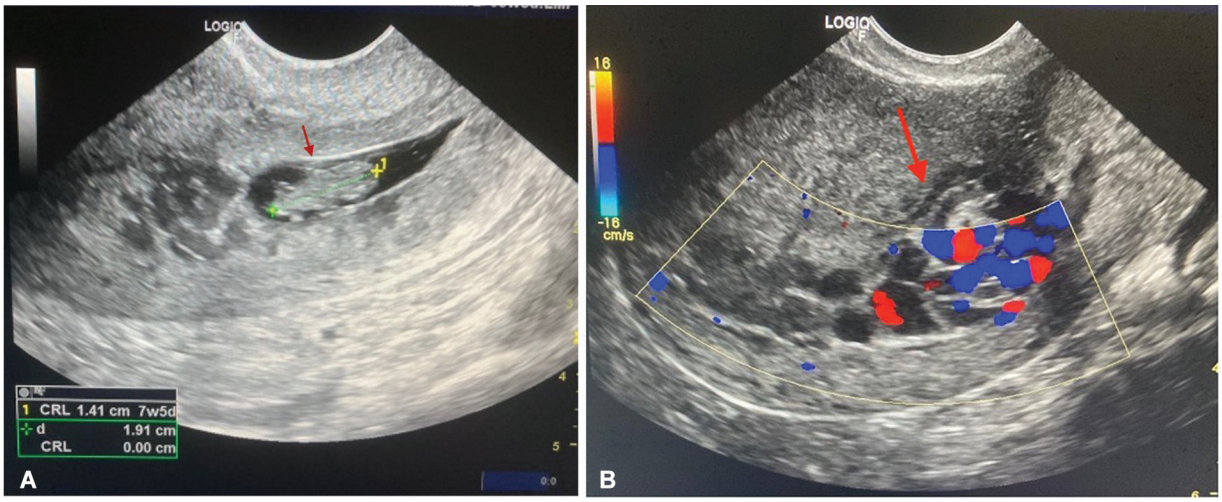

Fig. 1 (A) An antenatal transvaginal ultrasound revealed a single irregular gestational sac in the cervical canal below the internal os, (B) with prominent surrounding vascularity giving a hypervascular trophoblastic ring.

Case Report

A spontaneously conceived 23-year-old female with no known comorbidities, with nonconsanguineous marriage presented to the outpatient department with h/o amenorrhoea. Her last menstrual period was 08 weeks prior to the outpatient department visit. She was asymptomatic and on physical examination, her vital signs were normal and there was no pallor. Abdomen was soft, nontender, and undistended. Pelvic examination showed closed external os with no active bleeding. Urine pregnancy test was positive and serum beta-human chorionic gonadotropin (β-hCG) levels were 1,07,918 mIU/mL. An antenatal transvaginal ultrasound revealed a single irregular gestational sac in the cervical canal below the internal os (►**Fig. 1A**), with prominent surrounding vascularity giving a hypervascular trophoblastic ring (►**Fig. 1B**). After appropriate counseling, risk explanation, and consent, she was referred by the obstetrics consultant to the interventional radiology department for opinion on uterine artery embolization. After a thorough discussion between the obstetrician and intervention radiologist, it was decided to treat the patient by a multidisciplinary approach. Initially a uterine artery embolization was planned for the patient. Under local anesthesia right common femoral artery was accessed using Seldinger technique and a 5F sheath was placed. 5F cobra catheter was taken into the left internal iliac artery and a 2.7 F Progreat microcatheter with microwire was taken into left uterine artery beyond the horizontal segment. Catheter contrast injection showed presence of blush in the lower uterine/cervical segment (►**Fig. 2A**). Gelfoam particles were injected until stasis was achieved (►**Fig. 2B**) and the same procedure was repeated on the right side (►**Fig. 3A, B**). Post-embolization images showed satisfactory occlusion (►**Fig. 3**). Patient was stable after the procedure and was shifted to the ward where she was started on intramuscular methotrexate. Preoperative transvaginal scan with Doppler 3 days later showed no vascularity around the gestation sac and the patient

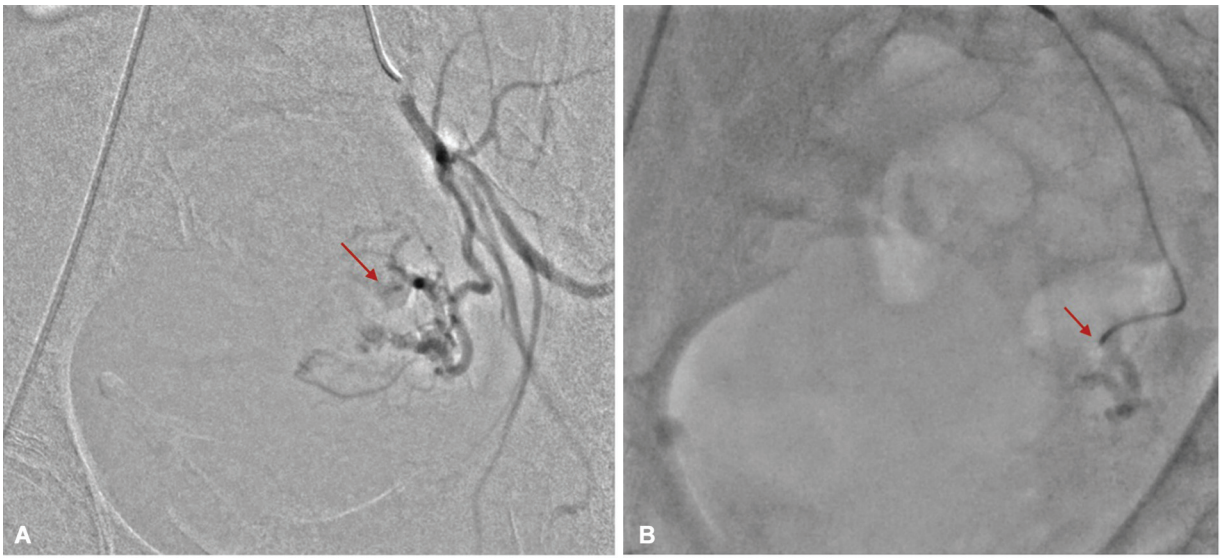

Fig. 2 (A) Catheter contrast injection in the left uterine artery showed presence of blush in the lower uterine/cervical segment. (B) Gelfoam particles were injected until stasis was achieved.

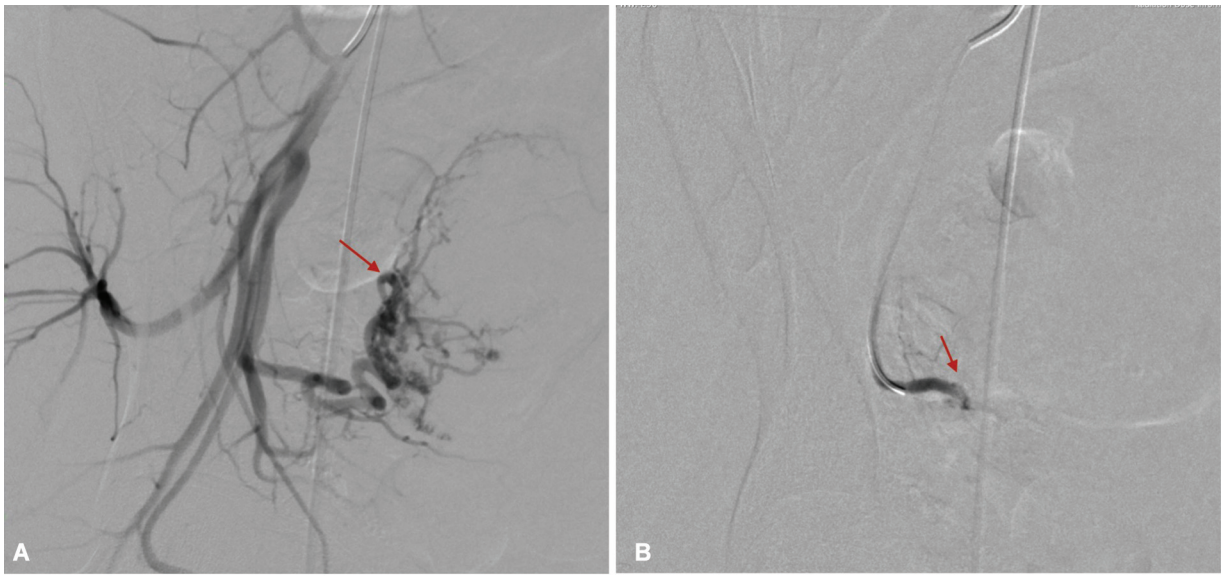

Fig. 3 (A) Catheter contrast injection in the right uterine artery showed presence of blush in the lower uterine/cervical segment. (B) Gelfoam particles were injected until stasis was achieved.

was taken up for suction and evacuation. Significant products of conception were removed and postprocedure transvaginal ultrasound scan did not show any products of conception. Serum β-hCG levels were 6180 mIU/mL on third postoperative day and after 1 week a color Doppler scan showed normal flow in bilateral uterine arteries. Patient was clinically stable and discharged to home.

Discussion

Cervical and abdominal ectopic pregnancies are rare locations for ectopic pregnancy. The seriousness of the condition lies in its hemorrhagic complications (50% mortality) due to the hypervascularization of the cervix during pregnancy, its low content (only 20%) in smooth muscle leading to a low sensitivity of the fibrous tissue to mechanical and uterotonic stimulation.[5] Transvaginal ultrasound is the most sensitive modality of choice. Magnetic resonance imaging can be used to know the depth of invasion.

Because of these complications that impede the vital prognosis, monitoring and treatment remain delicate. Methotrexate either systemic or in situ often along with hysteroscopic resection has been performed by some if the diagnosis is early at less than 6 weeks.[6]

Interventional radiology where available may replace surgical ligatures by more or less selective embolization of the uterine arteries. With the intention to preserve fertility, uterine artery embolization has shown efficacy in managing cervical ectopic pregnancies. Moreover, a synergistic two-pronged approach of uterine artery embolization in conjunction with systemic methotrexate administration has demonstrated high therapeutic efficacy.[4] Uterine artery embolization alone has been proven effective if methotrexate therapy is contraindicated.[7] It is proven that concurrent therapy with methotrexate along with uterine artery embolization is more effective than uterine artery embolization alone.[8]

Complications of uterine artery embolization for ectopic pregnancy include uterine ischemia, and subsequent amenorrhea due to endometrial ischemia.[9]

The earliest resumption of normal menstruation is seen at 1 month after procedure. Apart from methotrexate, other treatment methods that complement uterine artery embolization can also be used. Curettage alone for cervical ectopic pregnancy is not a safe option as it has a high predisposition for uncontrolled bleeding. Once embolization is done to control the risk of bleeding, curettage can be safely done. Curettage can be performed along with embolization and if there is significant bleeding, the interventional radiologist can immediately identify the source on angiogram and embolize it. One of the main benefits of doing curettage after embolization is that it decreases the possibility of delayed bleeding from reestablishment of collateral vessels. It is important to consider the choice of the embolization medium. Gelfoam is a temporary embolization agent and will considerably reduce circulation in the catheterized region for 24 hours, and there will be recanalization of the vessels in 2 to 6 weeks.[10]

As our case was a primigravida we wanted to use a temporary embolization agent and hence used Gelfoam particles.

Conclusion

Bilateral uterine artery embolization using Gelfoam is an effective mode of intervention in treating cervical ectopic pregnancy prior to suction and evacuation to decrease the changes of bleeding significantly. This procedure preserves fertility with a very low complication rate, is a minimally invasive approach, and has a lesser duration of stay in hospital. In conjunction with systemic or local methotrexate followed subsequently by surgical evacuation highly enhances its efficacy. Furthermore, it is associated with an early return of vascularity of the uterine arteries. However, application of the same depends on a multitude of factors like picking up the

diagnosis early, availability of the facility, skilled personnel, choice of the treatment, and patients consent.

Patient's Consent

A full and detailed consent from the patient/guardian has been taken. The patient's identity has been adequately anonymized.

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Conflicts of Interest

None declared.

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