

# Unilateral uterine artery embolization and systemic methotrexate therapy in cervical pregnancy

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## علاج حمل عنق الرحم بإحداث جلطة في أحد شرايين الرحم مع استخدام حقن الميثوتريكسيت.

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**الملخص:** سجل المؤلفون حالة حمل في عنق الرحم تم علاجها بنجاح عن طريق إحداث جلطة في أحد شرايين الرحم بالإضافة إلى استخدام حقن الميثوتريكسيت. إن إحداث جلطة في أحد شرايين الرحم في مثل هذه الحالة قد يلعب دوراً في الحفاظ على الوظيفة الإنجابية للرحم.

**ABSTRACT:** The authors report a case of cervical pregnancy successfully treated with combined methods of uterine artery embolization and systemic methotrexate therapy. Unilateral selective embolization may play a role in preserving reproductive functions.

**Key Words:** Cervical pregnancy, Omani, methotrexate, uterine artery embolization

Cervical pregnancy, though representing less than 0.1% of all ectopic gestations, tends to be a therapeutic challenge with its risk of profuse hemorrhage, often requiring hysterectomy to control the bleeding.<sup>1-3</sup> We describe a case of cervical pregnancy (suspected clinically and confirmed by abdominal and vaginal ultrasound), successfully managed with unilateral uterine artery embolization and systemic methotrexate therapy.

### THE CASE

A 35 year old woman presented at our accident and emergency department at 10 weeks gestation. She complained of painless vaginal bleeding since one week. Her obstetric history revealed one first trimester abortion, which had necessitated dilatation and curettage. For the second and third pregnancies, she had cesarean section at term. This was her first visit to hospital during the current pregnancy.

On pelvic examination, scanty vaginal bleeding was noted. The uterus was bulky and the cervix, soft and wide. Trans-abdominal and trans-vaginal ultrasound examinations showed an empty uterus and a well-defined gestational sac within the cervical canal, with the placenta embedded in the left lateral wall of the cervix (figure 1). There was no fetal pole.

A diagnosis of cervical pregnancy was made and the patient transferred to the angiography suite. A

Simmons nb.2 sidewinder catheter (outer diameter 1.83 mm) was introduced into the left internal iliac artery and inserted selectively into the left uterine artery, revealing a distinct area of placental vasculature in the cervical region (figure 2). The left uterine artery was then embolized with gelgoam sludge mixed with contrast medium; thereafter, the right internal iliac artery was catheterized. Since there was no evidence of placental vasculature on the right side, no embolization was attempted there. The following day, the methotrexate therapy was started at a dose of 50 mg/m<sup>2</sup> every 24 hours alternately with citrorum factor. The patient was given 3 doses of methotrexate. Laboratory data before the therapy was started had shown normal liver and renal functions tests, as well as normal coagulation profile. The  $\beta$ -hCG value was 5824 miu/ml.

The patient was observed for 7 days. On day 3 after the procedure, she expelled some tissue, which was confirmed histologically as products of conception. There were no episodes of bleeding during this period and she was discharged. Ultrasound examination, repeated on the day of discharge, showed an empty uterus and cervix.

The  $\beta$ -hCG level regressed to <5 miu/ml on day 23 after the procedure. Her menstruation returned on day 32, lasted for 4 days, without excessive bleeding. No side effects of methotrexate were noticed.

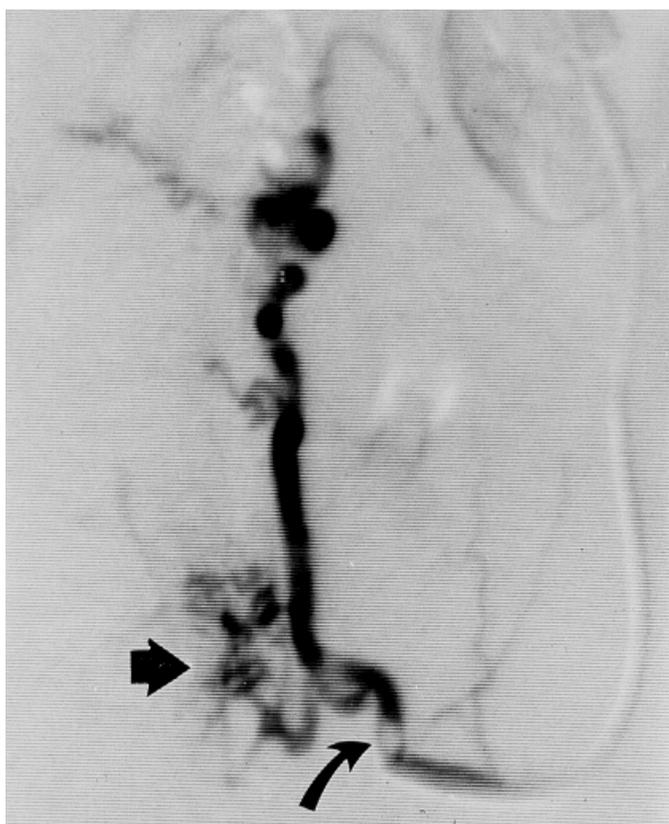
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**FIGURE 1.** *Sagittal ultrasound image of the uterus.*

The arrow points to the intumescence in the cervix where the ectopic pregnancy is located.



**FIGURE 2.** *Selective angiography of the left uterine artery.*

The straight arrow points to the placental vasculature in the cervix. Curved arrow indicates a gelfoam at the beginning of embolization.

#### DISCUSSION

Cervical pregnancy represents less than 0.1% of all ectopic gestations, but is frequently a therapeutic challenge. Traditional treatment involved dilatation and

curettage to remove the fetus and often hysterectomy to stop the ensuing bleeding.<sup>4</sup> Ultrasound has dramatically improved the early detection of cervical pregnancy, leading to the development of conservative methods of treatment such as chemotherapy, cerclage and arterial embolization.<sup>5</sup> Arterial embolization has proved excellent for controlling pelvic hemorrhage caused by trauma, cervical cancer and genital tract lacerations.

Complications from this procedure, such as sciatic nerve injury and necrosis of the bladder or rectum, are uncommon, but have been

documented.<sup>6</sup> Recently there were also reports on the use of arterial embolization before or after dilatation and curettage for successful treatment of cervical pregnancy, although the authors suggest arterial embolization only if significant bleeding occurs.<sup>6,7</sup> Our case illustrates that conservative management of cervical pregnancy using methotrexate and arterial embolization may obviate surgical procedure like hysterectomy, dilatation and curettage.<sup>5</sup>

#### CONCLUSION

Our patient made a full recovery. Post procedure ultrasound examinations were normal and final  $\beta$ -hCG result was negative.

To the best of our knowledge, unilateral uterine artery embolization has not been described before in this context. This particular approach should, at least theoretically improve the odds for future reproductive capability and further minimize the risk of complications.

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