

Live cervical ectopic pregnancy successfully managed with a single dose methotrexate. A case report

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Abstract

A case presentation of a 36-year-old nulliparous woman diagnosed with live cervical ectopic pregnancy. It was diagnosed at 7 weeks and 4 days of gestation by 2D transvaginal ultrasonography, and treated solely with systemic administration of a single dose of methotrexate.

Keywords

cervical; ectopic; systemic; methotrexate

Introduction

Cervical ectopic pregnancies occur with an incidence of one in 2,500 to one in 18,000 pregnancies and constitute less than 1% of all ectopic pregnancies [1]. Early diagnosis of cervical ectopic pregnancies could allow conservative approach that would reduce morbidity and preserve fertility. A case of live cervical ectopic pregnancy is presented here highlighting a conservative approach and avoidance of invasive management with good outcome.

Case Presentation

A 36-year-old nulliparous woman with a history of previous laparoscopic right salpingectomy for tubal ectopic pregnancy was admitted to Accident and Emergency Department at 7 weeks +4 days from the first day of her last menstrual period with right lower abdominal pain and vaginal spotting in early pregnancy. She used to have regular cycles. She had a body mass index of 42 and was asthmatic, well-controlled on inhalers.

She had a trans-vaginal ultrasound scan which showed a normal sized uterus, with endometrium measuring 7mm and a 2.2cm hemorrhagic corpus luteum on the left ovary with no pelvic free fluid detected. Within the cervix there was a single regular gestation sac measuring 6.08mm and lying 1.2cm away from the external os containing a single live embryo and a yolk sac equivalent to 6 weeks and 2 days gestation (Figure 1). The ultrasound scanning was repeated the following day by a different operator that confirmed the same findings hence a presumptive diagnosis of cervical ectopic pregnancy was made.

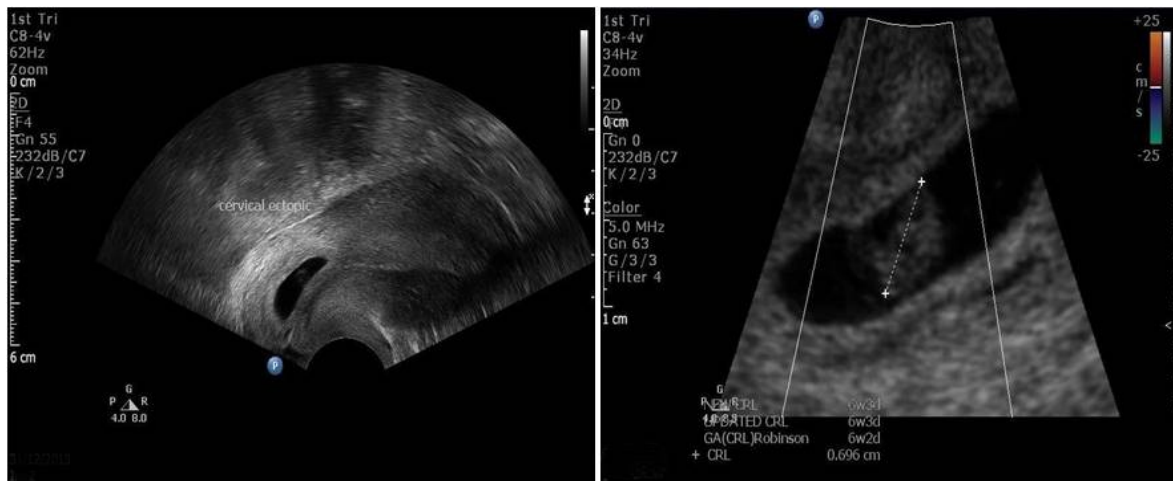


Figure 1: The trans-vaginal ultrasound scan picture on admission showing an empty uterine cavity and a regular sac in the cervix with fetal pole of CRL 0.69 cm equivalent to 6 weeks and 2 days

Baseline routine blood tests on admission were all normal with Hb level of 145 g/L. Serum B-hCG level of 7574 IU/L.

She was counselled regarding medical and surgical treatment options and treatment with systemic methotrexate was agreed as she was keen to preserve fertility. An adjusted dose of intramuscular methotrexate was administered as a single dose according to body surface area in the dose of 50 mg/m² after discussion with the local pharmacist.

On day 3 after administration of the single methotrexate dose, she started to develop side effects in the form of loose stools, nasal bleeding and headache relieved with simple analgesia in addition to raised serum ALT level reaching a peak of 241 U/L on day 3 of treatment then gradually settled to normal range. In addition she had moderate vaginal bleeding with blood clots, however she remained hemodynamically stable with haemoglobin level of 133 g/L and normal clotting profile, while serum B-hCG level increased to 9073 IU/L and trans-vaginal ultrasound scan showed a regular cervical gestation sac showing no fetal heart pulsations (figure 2).

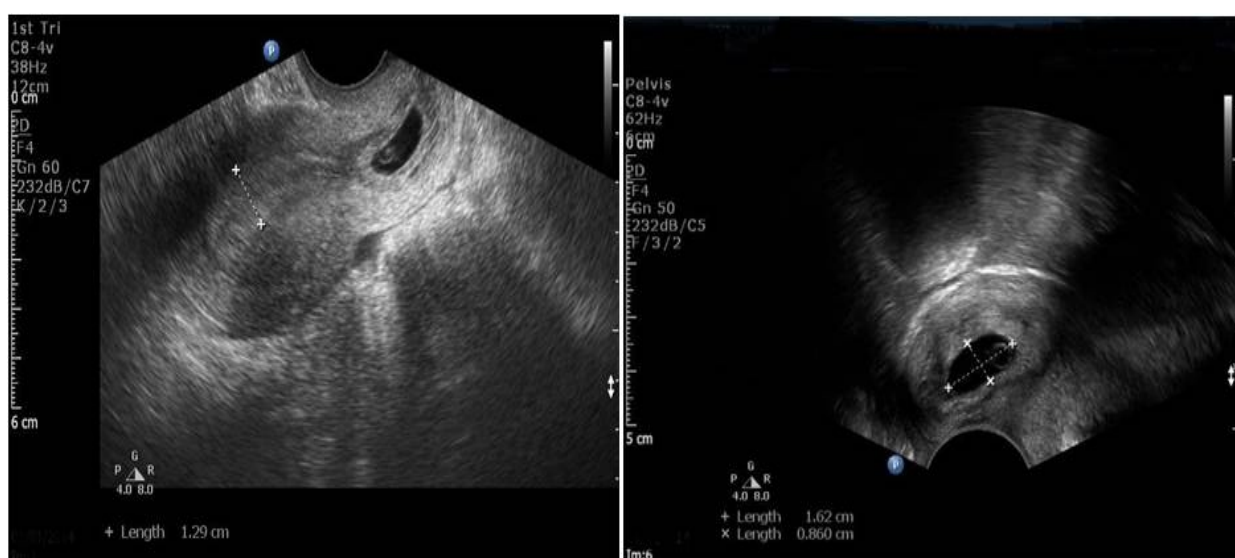


Figure 2: The trans-vaginal ultrasound scan picture on day 3 of treatment showing a regular sac in the cervix. Heart pulsations were absent.

On day 6 after methotrexate single dose, she developed chest tightness with oxygen saturation 94-95% on room air. She was seen by the physicians on the ward and had a normal electrocardiogram and a normal chest X-ray. Since the chest tightness improved with temporary oxygen therapy we concluded that pulmonary embolus was unlikely. The differential diagnosis included transient anginal pain, neuro-musculo-skeletal pain, pleuritic pain and psychosomatic pain.

On day 9 after methotrexate single dose, serum B-hCG level dropped to 3670 IU/L and trans-vaginal ultrasound scan showed endocervical thickness of 19mm with an area of mixed cystic and solid echoes (figure 3). She then started heavy vaginal bleeding that settled the following day with haemoglobin level dropped to 101 g/L.



Figure 3: The trans-vaginal ultrasound scan picture on day 9 of treatment showing an area of mixed echoes within the cervix.

Trans-vaginal ultrasound scan showed a 2 x 1.9cm area suggestive of retained products of conception within the cervical canal 13 days after treatment (figure 4), however she was asymptomatic with complete cessation of bleeding and serum B-hCG level steadily dropped to 436 IU/L 17 days after treatment (figure 5). She was discharged and followed up as an outpatient where her serum B-hCG level became normal at 15 IU/L 24 days after treatment.

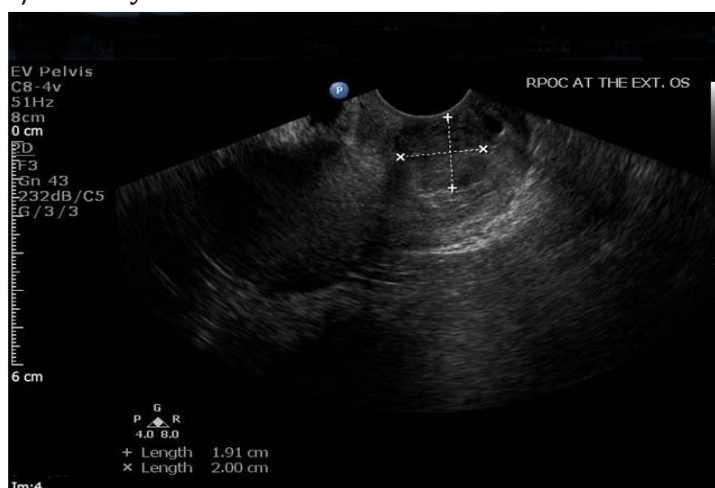


Figure 4: The trans-vaginal ultrasound scan picture on day 13 of treatment showing area of suggested retained products of conception

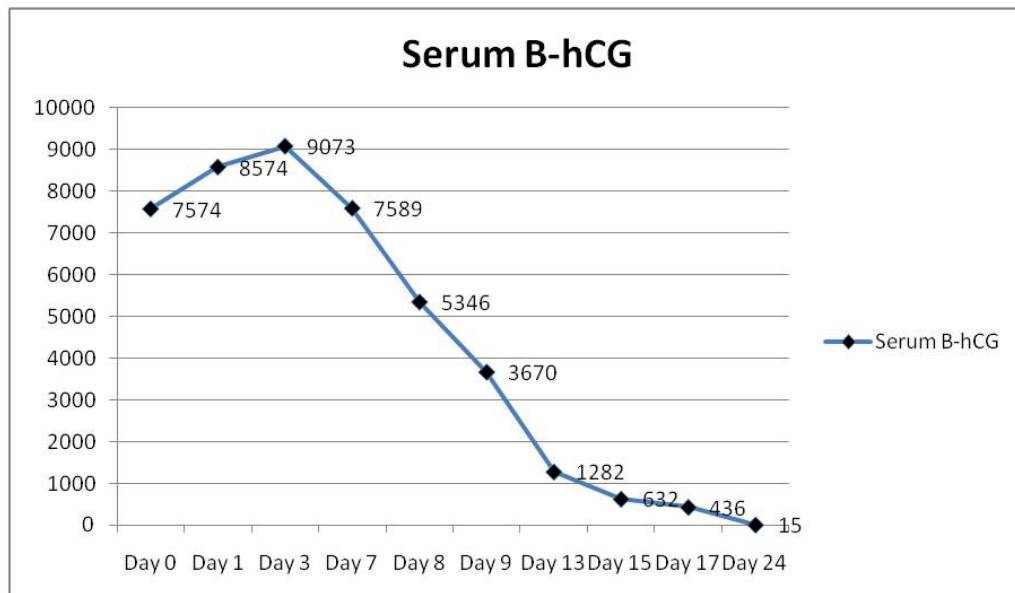


Figure 5: Serum B-hCG levels during treatment and follow up

Six weeks after treatment, she presented with heavy vaginal bleeding and open cervix hence had a uterine evacuation under general anesthetic where histological assessment of the products showed blood clots with absence of retained products of conception. She then resumed her normal periods 10 weeks after treatment.

Discussion

Cervical ectopic pregnancy results from implantation of a developing embryo in the endocervical canal below the level of internal os [2]. Some predisposing factors have been postulated to increase the incidence of cervical pregnancy, namely fibroids, previous curettage, endometritis and IVF [3] however none of these factors was present in the presented case but there was a history of previous tubal ectopic pregnancy.

Cervical pregnancy is usually associated with painless vaginal bleeding [4], while painful vaginal bleeding is usually a symptom of cervical abortion. In our patient, there was no recent history of gestational sac loss and the uterus wasn't enlarged [5]. Moreover, the internal os was closed on ultrasound scan and the gestation sac was rounded with fetal heart pulsations that favoured the diagnosis of cervical ectopic pregnancy.

Treatment options for cervical pregnancy include systemic or local chemotherapy, tamponade with cerclage or catheter, devascularization, intra-amniotic feticide, curettage, surgical excision and hysterectomy, with the need in most cases for combined or sequential therapies [2]. Recently, success rate of systemic methotrexate in treatment of cervical ectopic pregnancies was found to be as high as 81% [6].

Methotrexate is an antimetabolite that inhibits DNA synthesis [7] and was first described in treatment of cervical pregnancies by Farabow et al. [8]. Its adverse effects include nausea, vomiting, diarrhea, stomatitis and deranged hepatic functions [9]. Our patient developed loose stools, nasal bleeding, chest tightness and headache relieved with simple analgesia in addition to transient increase in serum ALT level.

Successful treatment of cervical pregnancy using single dose methotrexate was first reported by Yankowitz et al [10], while Leeman and Wendland suggested that systemic methotrexate can be tried in stable patients with pregnancies less than 9 weeks and absent fetal heart pulsations, while the presence of fetal heart pulsations would require addition of intra-amniotic injection of potassium chloride; a procedure that requires high level of skills and carries a significant risk of serious hemorrhage [2].

In spite of presence of fetal heart pulsations, we decided to avoid local invasive methods for our patient. In other reports, systemic methotrexate was associated with oral mifepristone [11] or local treatment in the form of manual vacuum aspiration, the use of a Foley catheter for tamponade [12], hysteroscopic resection [13] or surgical uterine evacuation and curettage [14].

In some reports, conservative treatment was complicated with massive life-threatening haemorrhage [15], while in others, systemic methotrexate alone was unsuccessful in treating cervical pregnancy [16,17]. Also, the use of systemic methotrexate alone was found in most reports to be ineffective with high serum B-hCG levels especially above 10,000 IU/L [18]. In our patient, B-hCG level was rising and reached 9073 IU/L on day 3 after methotrexate treatment however, a decision of continuation of conservative treatment was made. The decision has taken into consideration the significant morbidity of invasive and surgical methods especially since our patient stayed hemodynamically stable without need for blood transfusion.

Delayed serious hemorrhage after conservative measures was described in few reports and can occur as late as 3 months after treatment [19]. In our patient, the delayed hemorrhage occurred 6 weeks after treatment and residual cervical pregnancy was suspected, however this was not confirmed on histological assessment.

Learning points

Conservative fertility-sparing approaches even with live cervical pregnancies and high or rising serum B-hCG levels, would still need to be considered as a first line approach to avoid potential morbidities of invasive methods.

Extended follow up is necessary for 3 months after conservative measures have been undertaken for live cervical ectopic pregnancies as there is a risk of delayed onset massive bleeding.

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Manuscript Information: Received: April 19, 2018; Accepted: July 12, 2018; Published: July 16, 2018

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Citation: Farag A, MRCOG; Nippani J. Live cervical ectopic pregnancy successfully managed with a single dose methotrexate. A case report. Open J Clin Med Case Rep. 2018; 1437.

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