CASE REPORT

Effectiveness of Using of Single Dose of Methotrexate in Management of Cervical Ectopic Pregnancy

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ABSTRACT

We are reporting a case of cervical ectopic pregnancy of 32-year-old patient, gravida 3 para 1 abortion 1 at 5 weeks which presented to the emergency department with vaginal spotting early in the first trimester. A diagnosis was made based on transvaginal ultrasound findings. The patient was conservatively managed by methotrexate. We describe the ultrasound findings in this case and discuss the conservative management methods in treating a cervical ectopic pregnancy without complications.

Key words: Cervical ectopic, cervical miscarriage, conservative management, ectopic pregnancy, human chorionic gonadotropin, methotrexate, transvaginal ultrasound

INTRODUCTION

Ectopic pregnancy is considered to be a major obstetric emergency; it is one of the leading causes of maternal mortality in the first trimester and has an incidence of 2% of all pregnancies.[1] Different locations are reported in the literature, including fallopian tubes, cesarean scar, intramural, and within the cervical canal.[1,2]

A cervical ectopic pregnancy is the least common ectopic site with an incidence of 0.15% of all pregnancies, in which the blastocyst plants in the cervical mucosa below the internal os.[1,3] The risk factors are variant anatomy, uterine fibroids, use of an intrauterine contraceptive device, an *in vitro* fertilization (IVF) pregnancy, and repeated dilatation and curettage.[3]

The diagnosis of cervical ectopic pregnancy is made based on the patient's symptoms, β-subunit of human chorionic gonadotropin (β-hCG) titer which should be increased by doubling after 48 h and transvaginal ultrasound findings.[4] Ultrasound imaging is able to differentiate between cervical pregnancy and the cervical stage of miscarriage.[1] Hence, early cervical pregnancy may be mistaken with the cervical stage of miscarriage [Figure 1].

Conventionally, cervical ectopic pregnancies have been managed surgically due to the anatomical location of the implantation. Due to the rare occurrence of cervical ectopic pregnancy, there are no recommendations or research studies as to the most appropriate treatment option. Treatment options include methotrexate IM, dilatation and curettage, and hysterectomy, and since 1995, uterine artery embolization was included in the study.[5] There has been a significant shift in management toward conservative treatment as early diagnosis is made easier with the easy access to transvaginal ultrasound scanning facilities and the rapid assay of serum β-hCG.[2]

CASE REPORT

A 32-year-old female, known case of type 2 diabetes mellitus on oral Glucophage 1500 mg, gravida 3 para 1 abortion 1 at 5 weeks of gestation, presented to the emergency department with vaginal spotting for 2 days associated with mild lower abdominal pain. Obstetric history revealed one normal

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spontaneous vaginal delivery and one previous first-trimester miscarriage managed by dilatation and curettage 10 months ago. Her current pregnancy was first detected through a home pregnancy urine test with no history of a previous ultrasound.

On examination in the obstetric assessment room, the patient was hemodynamically stable with normal vital signs. Vaginal examination revealed a closed cervical os without visible bleeding. Her β-hCG level at presentation was 3146 IU/L. A transvaginal ultrasound showed no intrauterine or extrauterine gestational sac. The patient was admitted to the ward for observation. A repeat transvaginal scan the next day showed a gestational sac at the level of cervix measuring 0.87 cm, corresponding to 5 + 5 weeks of gestation. A yolk sac without fetal pole was visualized, and a posterior uterine fibroid was noticed as well. B-hCG was repeated after 48 h, which increased to 5322 IU/L. At 72 h, the value increased to 48,046 IU/L.

The patient had received a single dose of methotrexate which was (50 mg/m^2) after 2 days of admission intramuscularly; half dose in each buttock, calculated according to her body weight, height, and body surface area. After 48 h of administration of methotrexate, the patient's β-hCG dropped to 709 IU/L. Repeat transvaginal ultrasound showed a gestational sac with remnant ballooning in the cervix [Figures 2 and 3]. The sac was then removed under aseptic technique, using forceps only to get the content out without any bleeding. The patient was discharged after 1 week in good condition with the following of beta-human chorionic gonadotrophin weekly as an outpatient which dropped to 241 IU/L then 14.3 within 2 weeks [Figure 4], so the steady decline in beta-hCG and stable condition of the patient reflects the resolution of the patient's ectopic pregnancy.

DISCUSSION

The etiology of cervical ectopic pregnancies is unknown.[2] It happens secondary to pathological implantation of the blastocyst outside the uterus in the lining of the endocervical canal. It accounts for 0.15% of ectopic pregnancies. Cervical ectopic pregnancy results from many risk factors such as previous dilatation and curettage,[6] Asherman's syndrome, previous cesarean section, previous cervical or uterine surgery, and IVF–embryo transfer.[7]

The most common presentation symptom of cervical ectopic pregnancy is profuse painless vaginal bleeding in the first trimester. Pain with lower abdominal cramps occurs only in one-third of the patients. Pain without bleeding is rare. In this case, the patient presented with vaginal spotting and mild lower abdominal pain.

Table 1: Findings differentiating the cervical stage of a miscarriage from a cervical pregnancy Figure 2[2]

	Cervical pregnancy	Cervical abortion
Fetal heartbeat	Often present	Absent
Uterine fundus	Small "hourglass-shaped uterus"	Enlarged globular uterus
Endometrium	Regular echogenic decidual reaction, or pseudo sac	Mixed echogenic mass
Internal os	Closed	Open
Intact cervical canal between endometrium and sac	Present	Absent
Sac appearance with repeated scanning	Round and unchanged appearance	Increased crenulation and distension of sac

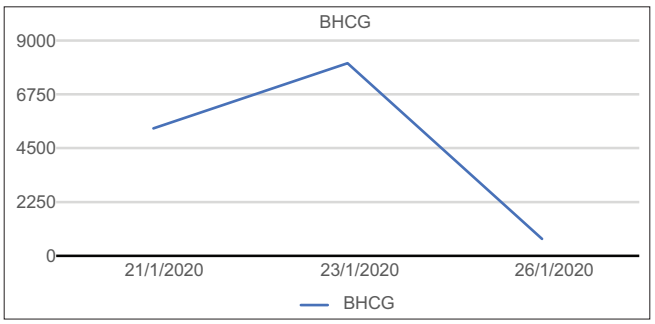

Figure 1: Bhcg in response to Methotraxte

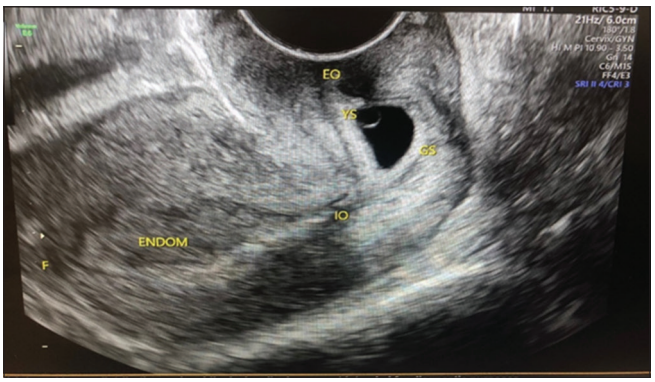

Figure 2: This picture showing transvaginal ultrasound of ectopic pregnancy consisting of gestational sac and yolk sac at the level of cervix with thin endometrium thickness

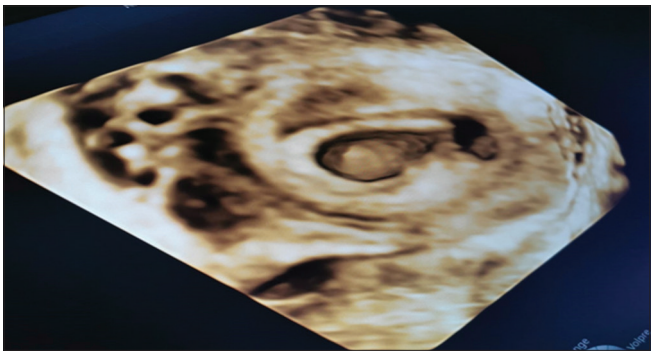

Figure 3: This picture showing three-dimensional of cervical ectopic pregnancy

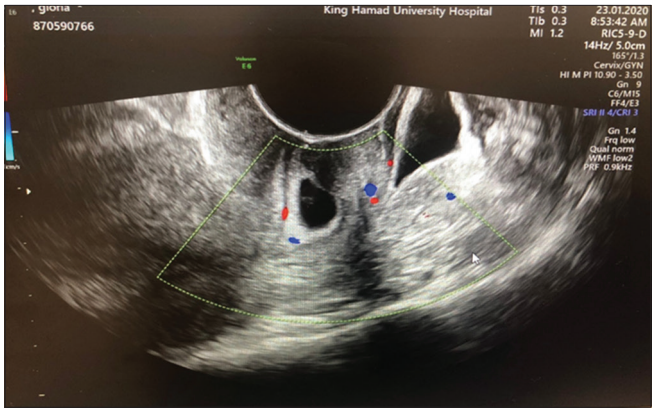

Figure 4: This picture showing transvaginal ultrasound of cervical ectopic pregnancy consisting of gestational sac and yolk sac

We can distinguish the cervical ectopic pregnancy from a miscarriage by many criteria.[8] Initial ultrasound shows "sliding sign" when the sonographer applies gentle pressure on the cervix with the probe. The second criterion is the demonstration of peritrophoblastic blood flow on color Doppler [Figure 2 and Table 1].

According to the literature, conservative management regimes, including chemotherapy, Foley catheter tamponade, curettage, and local prostaglandin injection, and arterial embolization and introduction of methotrexate with or without intra-amniotic instillation of potassium chloride, have been pursued with a consequent reduction in the number of hysterectomies.[2] Methotrexate can be administered intravenously, intramuscularly, or orally.[6] However, in this case, a single dose of methotrexate was injected intramuscularly for pregnancy termination without even needing for dilation and curettage, avoiding its complication which is the uterine perforation that is life-threatening complication for curettage.[9] Early diagnosis allows early intervention and increases the likelihood of successful conservative treatment.[2]

CONCLUSION

This case report showed using of a single dose of methotrexate which is safe, effective, and preserves ongoing fertility for treatment of cervical ectopic pregnancy without needing dilation and curettage.

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