

CASE REPORT

A Case of Cervical Ectopic Pregnancy: Successful Therapy with Methotrexate

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Introduction

We report a case of cervical ectopic pregnancy (CEP) of six weeks' duration presenting with abdominal pain. The pregnancy was terminated by methotrexate without any known complications of CEP.

Case Report

A 25-year-old lady G₂P₁L₁A₀ presented to the emergency room with four-day history of lower abdominal pain and six weeks' amenorrhea. Her sexual and past medical history was unremarkable. Her previous delivery was by cesarean section. The vital signs were within normal limits. Physical examination was also within normal limits except for mild-to-moderate lower abdominal tenderness on palpation without rigidity or guarding. Urine pregnancy test was positive.

A transvaginal sonography was performed, which revealed an empty uterus with an endometrial thickness of

13 mm, normal ovaries, and mild probe tenderness in the right fornix and an echolucent area in the cervix with yolk sac suggestive of a gestational sac (Fig. 1). This was confirmed on the 3D scan (Fig. 2). In further evaluating the patient, human chorionic gonadotrophic hormone (β -HCG) was obtained which was elevated at 4,407 mIU/l. Routine blood results were within normal limits.

After explaining the risk–benefit ratio, the patient opted for a treatment with methotrexate and 50 mg per square meter of body surface area was administered, intramuscularly. A second dose was given after 1 week as the serum β -HCG levels did not fall. The serum β -HCG levels were followed and displayed in Fig. 3. The serum β -HCG levels reached the normal limits in 5 weeks and a follow-up scan showed complete resolution.

Discussion

Ectopic pregnancy, i.e., the implantation of the blastocyst outside the endometrium of the uterine cavity is a high-risk condition that occurs in 1.9 % of reported pregnancies, the most common site of implantation being the fallopian tube, which accounts for approximately 97 % of all ectopic pregnancies [1]. The prevalence of ectopic pregnancy is increasing. A number of risk factors have been identified including previous cesarean section, rapid transit of the fertilized ovum due to non receptive endometrium, pre-pregnancy smoking, and pelvic inflammatory disease. Recently, in vitro fertilization has been reported to be

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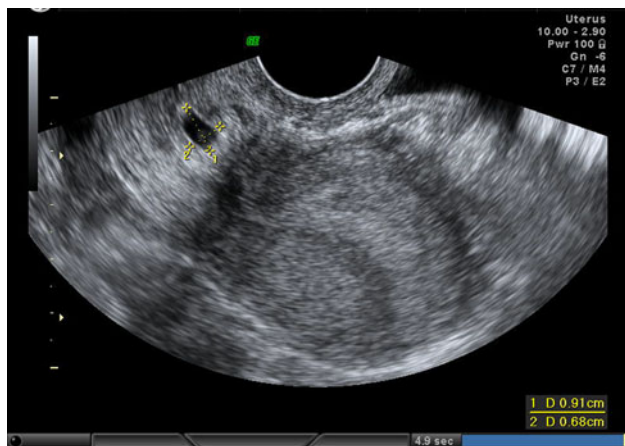


Fig. 1 Echolucent area in the cervix with yolk sac suggestive of a gestational sac

associated with increased risk of CEP. According to one review, CEP results in 0.1 % of in vitro fertilization pregnancies and accounts for 3.7 percent of IVF ectopic gestations.

Cervical pregnancy is a rare form of ectopic pregnancy in which the blastocyst implants in the lining of the endocervical canal. It accounts for less than 1 percent of ectopic pregnancies with an incidence of approximately 1:9,000 deliveries.

The most common symptom is profuse vaginal bleeding that is often painless in the first trimester. Pain and lower abdominal cramps occur only in one-third of the patients. Pain without bleeding is rare. In the present patient, however, lower abdominal pain was the predominant symptom with minimal spotting on examination.

CEP was first described in 1817 and first named as such in 1860. In a 1911 case report, Rubin established diagnostic criteria for cervical pregnancy. In 1996, Jurkovic et al.

proposed two additional diagnostic criteria to distinguish CEP from an aborting intrauterine pregnancy residing in the cervix. The “sliding sign” is detected on endovaginal ultrasound examination: when the sonographer applies gentle pressure on the cervix with the probe, the gestational sac of an abortus slides against the endocervical canal unlike in an implanted cervical pregnancy. The second criterion is demonstration of peritrophoblastic blood flow on color Doppler ultrasonography [2].

Number of procedures including dilatation and curettage were in vogue for a long time as surgical therapy for CEP. Uncontrollable hemorrhage requiring ligation of vaginocervical branch of uterine artery or hysterectomy remains major limitation of all surgical procedures. In this context, introduction of methotrexate with or without intra-amniotic installation of potassium chloride represents a major advance in terminating CEP, particularly when fetal heart is present [3]. Methotrexate may be administered intravenously, intramuscularly, or orally. There are no studies, however, comparing the efficacy of methotrexate alone versus methotrexate with intra-amniotic potassium chloride.

Although there are no established criteria, because of the rarity of the condition, candidates for medical intervention alone must be chosen with care; potentially appropriate candidates are women who have (a) hemodynamic stability, (b) willingness to comply with post-treatment monitoring, and (c) pre-treatment serum β -HCG levels $\leq 5,000$ mIU/mL. Methotrexate should be administered with caution in patients with established renal and hepatic insufficiency. While a single dose intramuscular methotrexate, i.e., 50 mg per square meter of body surface area is sufficient in fallopian tube pregnancy, CEP is often treated with multidose methotrexate, i.e., 1.0 mg/Kg body weight on days 1,3,5, and 7 interspaced by leucovorin 0.1 mg/Kg body weight. We chose intramuscular methotrexate because of lack of

Fig. 2 3D scan showing a cervical gestational sac

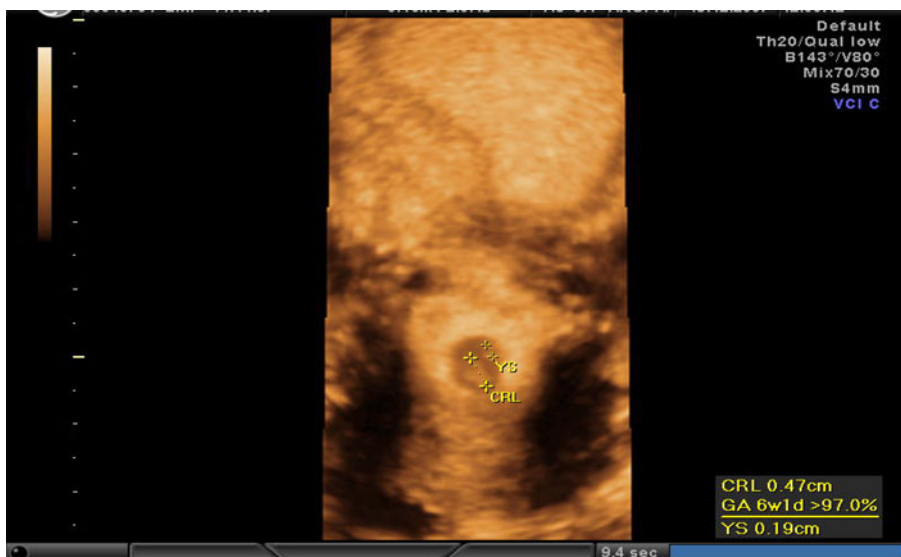
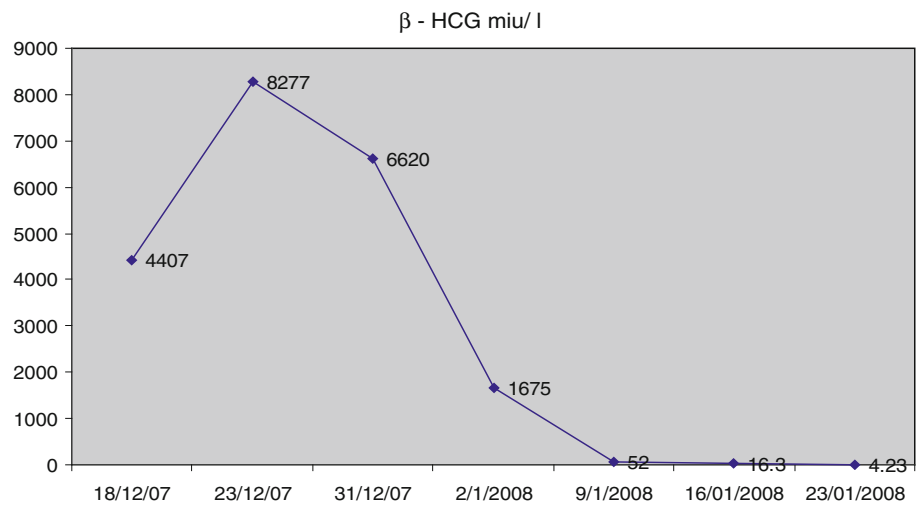


Fig. 3 Serial serum β -HCG levels

significant vaginal bleeding and relatively early gestation. Regardless of the regimen of choice, decline in serum or urine β -HCG levels correlates well with successful therapeutic intervention, as demonstrated in our patient (Fig. 3).

In summary, patients with CEP are at high risk of severe, potentially life-threatening hemorrhage, especially if diagnosis is delayed. The conservative management of CEP is effective and safe [3]. The success of conservative treatment for cervical pregnancy depends on the diagnostic accuracy of the initial ultrasound. Correct diagnosis would reduce the chance of hysterectomy or blood transfusion [4]. Cervical pregnancy, when diagnosed early, can be successfully treated with medical therapy.

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