Cervical Pregnancy: Two Cases with Different Treatment Strategies

Hanan Shamrani, MD
Department of Obstetrics and Gynecology, Faculty of Medicine
King Abdulaziz University, Jeddah, Saudi Arabia

ABSTRACT

Cervical pregnancy is a rare, potentially life-threatening condition that presents challenging management options. We report the cases of two patients: a 38-year-old, gravida 11 para 8+2 who presented with first-trimester vaginal bleeding and a 32-year-old female primigravida who presented in her ninth week of gestation with vaginal spotting and abdominal pain. Radiological and histopathological findings were consistent with cervical pregnancy in both cases, which were managed successfully with different approaches. Conservative management with intra-embryonic injection of potassium chloride was successful in the first case while dilatation and curettage after intramuscular methotrexate administration resolved the second patient's symptoms. Cervical pregnancy, when diagnosed early, can be successfully treated with medical therapy. Surgical intervention may be necessary, but adopting medical treatment as a first line therapeutic option offers the advantage of uterine preservation.

Keywords

Cervical pregnancy; Ectopic pregnancy; Dilatation and curettage; Conservative treatment; Methotrexate; Potassium chloride
INTRODUCTION

Ectopic pregnancy is a rare condition that occurs in 1–2% of pregnancies\(^1\). The fallopian tubes are reported to be the commonest site of implantation\(^2\). In less than one percent of these cases, the cervix is the site of implantation\(^3\). In the past, cervical pregnancy (CP) was diagnosed when dilation and curettage (D&C) for a suspected incomplete abortion resulted in unexpected hemorrhage\(^4\). However, CP can now be more easily and accurately diagnosed with a first-trimester ultrasound examination. As a result, therapeutic options have expanded with the use of ultrasound guided local injections and aspirations\(^5\). Ectopic pregnancies carry a zero prognosis for the baby and are also a cause of maternal mortality and morbidity\(^6\). In some cases, cervical blood vessels are destroyed, and an emergency hysterectomy may be indicated solely to increase the patient's chance of survival\(^7\). Thus, clinicians should be more knowledgeable about this condition, as early diagnosis can lead to better management and prognosis.

Until now, there has been no consensus regarding the optimal therapeutic approach to CP. However, conservative management based primarily on the use of methotrexate remains the primary protocol\(^8\). This paper describes two cases of CP that were managed successfully with intraembryonic injection of potassium chloride (KCL) in one case and D&C after intramuscular methotrexate administration in the other patient.

CASE PRESENTATION

Case 1

A 38-year-old Saudi female (G1P0A0I2) was admitted to King Abdulaziz University Hospital with per-vaginal bleeding and amenorrhea of six weeks and six days. The bleeding was painless and associated with minimal clots. Her medical history was unremarkable; her surgical history was only remarkable for a cesarean section (CS) performed four years prior and two D&C procedures.

On examination, the patient’s vital signs were stable. Her abdomen was soft and lax, but there was mild tenderness in the suprapubic region. A vaginal examination was not done.

Laboratory investigations showed the following: β-human chorionic gonadotropin (β-hCG), 29369.8 mIU/L; white blood cell, 7.6 x 10^9/L (reference range, 4.5–11.0 x 10^9/L); platelets, 347 x 10^3/μL (150–350 x 10^9/μL); hemoglobin, 11.1 g/dL (reference range, 14.0–17.5 g/dL); hematocrit, 33.8% (reference range, 41–50%); blood group, O Rhesus positive; human immunodeficiency virus, hepatitis B and C and syphilis serology, negative; serum sodium, 137 mEq/L (reference range, 136–142 mEq/L); serum potassium, 3.8 mEq/L (reference range, 3.5–5.0 mEq/L); urea, 2.4 mmol/L (reference range, 2.9–8.2 mmol/L); serum creatinine, 54 μmol/L (reference range, 53–106 μmol/L); prothrombin time, 11.1s (reference range, 10–13s); and partial thromboplastin time, 29.6s (reference range, 25–35s).

An ultrasound revealed an empty uterus with a bulky cervix, and the endometrium measured 1.18 cm. A gestational sac with a single viable fetal pole (crown-rump length of 2.45 cm, equivalent to nine weeks and two days gestation) was observed in the cervix.

Conservative treatment was offered. Under general anesthesia, the patient was placed in lithotomy position, cleaned and draped in the usual sterile manner. After insertion of a Sim’s speculum, an examination was performed, and the anterior cervical lip was held with a tenaculum. Under transvaginal ultrasound guidance, KCL 0.5 mL was injected into the gestational sac, resulting in the expulsion of the pregnancy. The conception products were sent for histopathological examination.

The patient tolerated the procedure well and was transferred to the ward. Post-procedure treatment included oral antibiotics and methotrexate. On day 1 post-procedure, the patient was stable, and she only experienced mild vaginal bleeding. A repeat β-hCG showed a level of 13724.8 mIU/L three days after her admission. Results of histopathology showed a gestational sac and placental tissue. Ten days after admission, her β-hCG level had fallen to 402.3 mIU/L.

Case 2

A 32-year-old primigravid Sudanese (gestational age, 9 weeks + 5 days) presented with vaginal spotting and abdominal pain. Her medical history was only significant for bronchial asthma while her surgical history was unremarkable. On physical examination, she was hemodynamically stable. After an initial assessment and fetal ultrasound, a provisional diagnosis was made for CP and possible uterine didelphys.

The results of laboratory investigations were as follows: β-hCG, 151497.5 mIU/L; white blood cell, 11.9 x 10^9/L; hemoglobin, 12.5 g/dL; hematocrit, 40.4%; platelets: 311 x 10^9/μL; blood group, B Rhesus positive; hepatitis B surface antigen, negative; immunoglobulin M toxoplasma antibodies, 257.9 IU/mL; immunoglobulin G rubella antibodies, 246.6 IU/mL; sodium, 127 mEq/L; potassium, 3.5 mEq/L; urea, 2.2 mmol/L; creatinine, 61 μmol/L; prothrombin time, 11s; and partial prothrombin time, 25.2s. A pelvic ultrasound revealed a gestational sac with a single viable fetal pole (crown-rump length of 2.45 cm, equivalent to nine weeks and two days gestation) in the cervix. Magnetic resonance imaging findings were also consistent with CP, showing minimal extension of the gestational sac into the lower uterine segment and no uterine anomalies.

Conservative management was given. Under general anesthesia, the patient was placed in lithotomy position, cleaned and draped in sterile manner. The cervix was held with a tenaculum, and dilatation and suction was done. The evacuated product was sent for histopathological examination, and curettage was subsequently performed. No active bleeding was observed during the procedure, which the patient tolerated. She was transferred to the recovery room in a satisfactory condition.
Post-operative treatment included misoprostol 800 mcg. On the fifth day of admission, the patient's βhCG level fell to 3279.2 mIU/L and histopathological examination results showed the specimen comprised products of conception. On the sixth day of admission (day 2 post-surgery), the patient presented no complaints and her physical examination was unremarkable. A further drop of her βhCG level was observed as follows: 1090.2 mIU/L on day 17 post-surgery, 210.7 mIU/L on day 24 post-surgery, and 4.5 mIU/L two months after surgery.

**DISCUSSION**

The etiology of CP is still unknown; however, it may be associated with many factors, including prior instrumentation, D&C, pre-pregnancy smoking, previous pelvic surgery, CS or ectopic pregnancy, pelvic inflammatory disease, advanced age, in vitro fertilization, intrauterine device use, and low parity. The first patient in our report had a history of CS and two D&C procedures; the second patient was primigravid.

Both patients in our report had painless vaginal bleeding, which is the most common presenting symptom of ectopic pregnancy, especially in the first trimester. Abdominal pain and hemodynamic instability have been reported in more severe cases, comprising less than one third of patients with CP. Findings of an enlarged, globular or distended cervix with external os dilatation can also be documented during admission.

Several factors determine the therapeutic approach, including the gestational age and viability of the fetus, the presence of active hemorrhage, the patient's request for future fertility and the physician's personal experience using methotrexate. Therefore, clinicians have to carefully choose candidates for medical intervention alone because of the rarity of the condition. Patients who may receive medical treatment alone must: (a) be hemodynamically stable, (b) be willing to comply with post-treatment monitoring, and (c) have pre-treatment serum β-HCG levels ≤ 5,000 mIU/mL. We chose medical intervention in the first patient, who was hemodynamically stable. Although the second patient was also hemodynamically stable, we opted for methotrexate administration followed by D&C owing to the absence of significant vaginal bleeding and the relatively young gestational age.

Cervical pregnancy can be effectively treated with methotrexate without the need for D&C. Some authors have described a success rate of 81.3% in patients treated with local methotrexate. Intra-amniotic methotrexate instillation, when used alone or conjoined with other conservative methods, yielded a success rate of approximately 90% in women with CP. Systemic methotrexate in multiple doses has been recommended in first trimester pregnancies and in cases where fetal viability is absent. Otherwise, treatment would be associated with increased failure rates. In a retrospective study by Song et al., only nine out of 30 cases of CP treated with intramuscular methotrexate did not require curettage. In one report by Mangino et al., hysterectomy was performed in patients with CP following ineffective treatment with intra-amniotic methotrexate. Furthermore, Pereira et al. demonstrated a case of residual pregnancy three months after CP treatment with intramuscular methotrexate, intra-amniotic KCL injection and uterine artery embolization, indicating that close follow up is essential to ensure complete resolution of the pregnancy. Leeman and Wendland stated that conservative treatment of CP was more efficient if administered before 12 weeks of gestation, as the wall of the cervical canal was not deeply invaded by trophoblast cells. Irrespective of the regimen of choice, a fall in serum or urine β-hCG levels correlates well with successful therapeutic intervention, as demonstrated in our cases.

Finally, although CP is a rare condition, it can be successfully treated with conservative medical therapy when diagnosed early. Surgical intervention may be necessary, but conservative medical treatment as the first line therapeutic option is safe and effective as it decreases morbidity. Conservative treatment further offers the advantage of uterine preservation, thereby improving future fertility.

**Conflict of Interest**

The author has no conflict of interest.

**Disclosure**

The author did not received any type of commercial support either in forms of compensation or financial for this study. The author has no financial interest in any of the products or devices, or drugs mentioned in this article.

**Ethical Approval**

Obtained.

**REFERENCES**


Cervical Pregnancy: Two Cases with Different Treatment Strategies
H. Shamrani


حمل عنق الرحم: حالاتان مختلفتان مع تدخلات علاجية مختلفة

حنان الشمري
قسم النساء والولادة
كلية الطب
جامعة الملك عبدالعزيز
جدة - المملكة العربية السعودية

الملخص:

حمل عنق الرحم هو من الحالات النادرة ذات الخطورة على حياة الحامل، والتي تضع المختصين أمام خيارات علاجية صعبة.

هذا التقرير يتناول حالتين لمريضتين: الأولى تبلغ من العمر 38 عامًا في حملها الحادي عشر، لها 8 أطفال وتعرضت لإنجابات، واجتت المستشفى في الأسبوع الثالثة الأولى من حملها بسبب نزيف مهبلي، أما الحالة الثانية.

فتبين من العمر 23 عامًا في حملها الأول واجتت المستشفى في الأسبوع التاسع من حملها بسبب إصابتها بنزيف مهبلي خفيف والماء في البطن.

وتم إجراء العلاج الطبي المحافظ باستخدام حقن داخلية جينية بنرويسيد البنتاسوم في الحالة الأولى، وكانت ناجحة. بينما في الحالة الثانية تم إجراء التوسع والكشف بعد العلاج بحق الميتورتيكسيت العصلي، مما أدى إلى إنهاء الحمل.

ومن هذا يتبين أن العلاج الطبي التحفظي لحمل عنق الرحم يكون ناجحا عند ما يجري الكشف عنه مبكرًا، وقد يكون التدخل الجراحي ضروريا، ولكن اعتقاد العلاج الطبي التحفظي كخيار علاجي هو الاختيار الأول حيث يتم بتبعه الحفاظ على الرحم سليماً.