

CASE REPORT

Successful Conservative Management of a Case of Cervical Ectopic Pregnancy complicated with Preexisting Cardiomyopathy

¹Naimah Raza, ²Nitin P PaiDhungat

ABSTRACT

Background: Cervical ectopic pregnancies account for less than 1% of all pregnancies. It may present with abnormal and occasionally heavy bleeding.

Aim: To understand the challenges associated with management of cervical ectopic pregnancies and learn to individualize the available treatment modalities for a successful outcome.

Case report: A 42-year-old woman, G6P2L2MTP3 with amenorrhea of 2 months, was diagnosed with cervical ectopic pregnancy of 9 weeks on ultrasonography. She was a known case of dilated cardiomyopathy with type II diastolic dysfunction and an ejection fraction of 25%. The patient was given systemic methotrexate followed by intra-amniotic methotrexate and fetal intracardiac potassium chloride. She was followed up with serial β -human chorionic gonadotropin (hCG) reports. However, she developed abdominal pain with bleeding per vaginum and ultrasonography suggestive of a hematoma. The patient was then taken up for a bilateral uterine artery embolization followed by an immediate suction evacuation. The products of conception sent for histopathology confirmed the microscopic diagnosis of cervical pregnancy.

Conclusion: It is a challenging clinical situation to diagnose and manage. It needs to be diagnosed early, and management needs to be individualized.

Clinical significance: Even with advanced diagnostic modalities and reduction in current mortality rates, cervical pregnancy remains a life-threatening condition. It is of utmost importance to be thorough with the emerging trends in its management, as it comes with the promise of being unpredictably catastrophic.

Keywords: Case report, Cervical pregnancy, Ectopic, Suction evacuation, Uterine artery embolization.

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BACKGROUND

Cervical ectopic pregnancies account for less than 1% of all pregnancies, with an estimated incidence of 1 in 2,500 to 1 in 18,000.^{1,2} In the past, cervical ectopic pregnancies were associated with significant hemorrhage and were often treated presumptively with hysterectomy. Earlier detection of these pregnancies due to improved ultrasound resolution has led to the development of more conservative treatments that attempt to limit the associated morbidity and preserve fertility. Given the rarity of the condition, even today, the most effective method of its management is under investigation.

A case of cervical ectopic pregnancy is presented here, highlighting the successful diagnosis, management, and challenges of this rare condition.

CASE REPORT

A 42-year-old woman, G6P2L2MTP3 with 2 months of amenorrhea and a positive urine pregnancy test, presented with complaints of mild pain in abdomen and history of irregular bleeding per vaginum sine 1 week, following ingestion of pills for medical termination of pregnancy. Her previous menstrual cycles were regular. She had two full-term normal vaginal deliveries in the past. She underwent suction evacuation thrice after that for termination of pregnancies.

The patient was a known case of dilated cardiomyopathy with hypertension, (diagnosed 5 years back), with an ejection fraction of 25% at present, type II diastolic dysfunction, and mild pulmonary hypertension.

Transabdominal and transvaginal ultrasonography examination revealed a ballooned-out cervical canal with a gestational sac of 4.6 cm \times 4.2 cm and an empty uterus with thickened endometrium. The sac contained a fetus with a crown-rump length of 2.3 cm, corresponding to 9 weeks' gestation with the presence of cardiac activity. The diagnosis of a live cervical ectopic pregnancy was made.

Her serum β -hCG was 242,703 IU/mL.

¹Registrar, ²Consultant

^{1,2}Department of Obstetrics and Gynecology, Bombay Hospital Institute of Medical Sciences, Mumbai, Maharashtra, India

Corresponding Author: Naimah Raza, Registrar, Department of Obstetrics and Gynecology, Bombay Hospital Institute of Medical Sciences, Mumbai, Maharashtra, India, Phone: +917208703184, e-mail: naimahr91@gmail.com

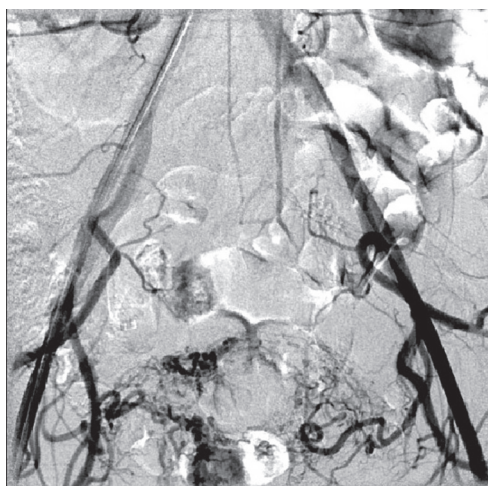


Fig. 1: Preembolization

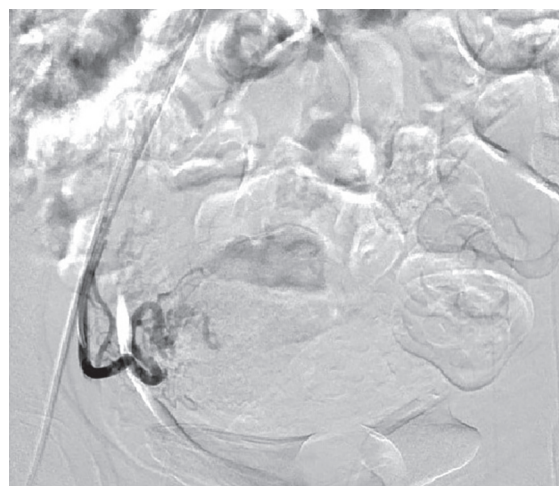


Fig. 2: Right uterine artery postembolization

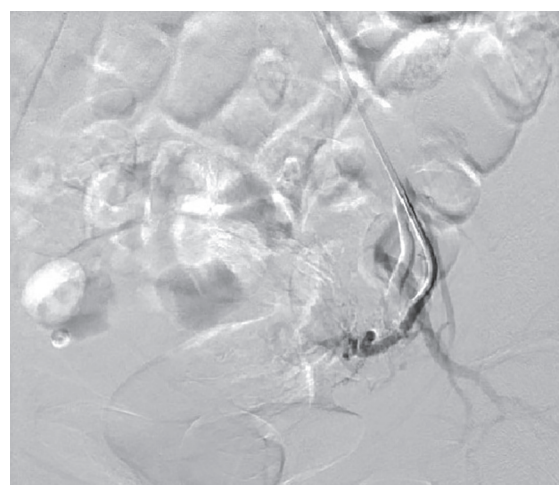


Fig. 3: Left uterine artery postembolization

A multidisciplinary team was made, comprising of an obstetrician, anesthetist, cardiologist, sonologist, and an interventional radiologist.

The patient received injection methotrexate (100 mg) intramuscularly (two doses on alternate days), followed by ultrasonography-guided instillation of 50-mg methotrexate in the gestational sac and few drops of potassium chloride in the fetal heart, a day later. A scan repeated the next day was suggestive of absence of fetal cardiac activity and a collapsed cervical gestational sac.

She was followed up with serial β -hCG. The levels fell to 138,428 IU/mL (on day 4) and to 54,402 IU/mL (on day 7). She was discharged from the hospital, given the instructions for follow-up, and asked to come with repeat β -hCG report next week. However, 5 days later, she came in emergency with complaints of intermittent pain in abdomen and bleeding per vaginum. A repeat ultrasonography showed a collapsed cervical gestational sac, an ill-defined fetal pole, no cardiac activity, and a hematoma surrounding the sac measuring 3 x 1 cm.

Under local anesthesia, bilateral uterine artery embolization was done via right transfemoral access (Figs 1 to 3), followed by suction evacuation done under total intravenous anesthesia. The products of conception were removed and sent for histopathological examination.

The patient was managed with avoidance of a major surgery, which was a high risk for the patient due to her medical condition. She tolerated the procedure well and was discharged the next day. Her β -hCG normalized 5 weeks later. Histopathology report confirmed the microscopic diagnosis of cervical pregnancy.

DISCUSSION

Cervical ectopic pregnancy results due to implantation of a fertilized ovum in the endocervical canal below the level of internal os with a reported incidence of less than

0.1% of all pregnancies.^{1,2} Even with advanced diagnostic modalities and reduction in current maternal mortality rates, it remains a life-threatening condition. Although predisposing factors such as endometrial damage after curettage or chronic endometritis, leiomyoma, intrauterine devices, *in vitro* fertilization, and primary embryo anomaly are implicated in the pathogenesis of cervical ectopic pregnancies, the rarity of the condition has prevented any retrospective studies, and its association with these factors remains weak.^{3,4}

Differential Diagnosis

It is important to distinguish cervical pregnancy from a cervical abortion or uterine scar pregnancy.

In 2002, the following guidelines were laid down for ultrasound diagnosis of an ectopic pregnancy within a cesarean scar⁵:

- An empty uterine cavity and cervical canal,
- Development of the gestational sac in the anterior portion of the lower uterine segment, and

- Absence of a healthy myometrium between the bladder and the gestational sac.

For differentiating it from cervical stage of miscarriage, “sliding sign” has been described on transvaginal scanning by Jurkovic et al,⁶ which occurs when the gestational sac of an abortus slides against the endocervical canal following gentle pressure by the sonographer. (This will not be seen in an implanted cervical pregnancy and may assist in the differentiation.)

Imaging

The specificity of three-dimensional (3D) ultrasound imaging has been reported to be better than two-dimensional (2D) scans as the 3D image incorporates an additional coronal section, i.e., not possible with 2D imaging.⁷

Sometimes, when the diagnosis is in doubt, a magnetic resonance imaging (MRI) may be done as tissue characterization is better with MRI when compared with ultrasound. The MRI findings of cervical ectopic pregnancy include the following⁸:

- Presence of a mass with heterogeneous signal intensity
- Partial or complete dark rim on T2-weighted images.

Treatment

Treatment options for cervical ectopic pregnancy may be divided into five categories¹:

- *Tamponade with Foley catheter*: A Foley catheter, placed gently past the external os, followed by inflation of the bulb with 30-mL saline has been used mostly after other techniques (e.g., curettage) and results in hemorrhage.
- *Reduction of blood supply*: This may be undertaken by cervical cerclage, vaginal ligation of cervical arteries, uterine artery ligation, internal iliac artery ligation, and angiographic embolization of the cervical, uterine or internal iliac arteries. This is usually done in preparation for surgical therapy like curettage, or along with chemotherapy, as a conservative treatment modality aimed at preserving future fertility. Embolization is primarily used as a “rescue” therapy when profuse bleeding follows other conservative methods such as chemotherapy.
- *Surgical excision of trophoblast*: Curettage and hysterectomy are the classic methods for surgical excision of trophoblast tissue. Curettage is used in conjunction with mechanical methods such as cervical artery ligation and tamponade, to prevent the risk of hemorrhage. Primary hysterectomy may still be the preferred modality of treatment in intractable hemorrhage, second-trimester or third-trimester diagnosis of cervical pregnancy, and possibly to avoid emergency surgery and blood transfusion in a woman not desirous of fertility.

- *Intra-amniotic feticide*: Ultrasound-guided intra-amniotic instillation of potassium chloride and/or methotrexate has been used as a conservative approach for the management of cervical pregnancy.
- *Systemic chemotherapy*: The most commonly used agent is methotrexate, used in a single dose or multiple doses, with or without folinic acid.

In clinically stable patients, if ultrasound measurements show no cardiac activity and the gestational period is less than 9 weeks, systemic methotrexate may be tried. Gestational period more than 9 weeks with the presence of cardiac activity demonstrated on ultrasound in a clinically stable patient may require addition of intra-amniotic potassium chloride in addition to systemic methotrexate.¹ Second- or third-trimester diagnosis may warrant hysterectomy. In a hemorrhaging patient, the treatment options are tamponade with Foley’s balloon, large vessel ligation, or angiographic embolization with hysterectomy reserved for intractable bleeding. Often, more than one method is usually tried in the termination of cervical pregnancy.¹

Treatment with methotrexate chemotherapy of patients with either viable or nonviable cervical pregnancy at <12 weeks’ gestation carries a high success rate (>91%) for preservation of the uterus.⁹

CONCLUSION

Cervical ectopic pregnancy is a challenging clinical condition to diagnose and manage. There are inadequate studies to establish which modality is superior. Management, thus, needs to be individualized. The key to conservative management is an early diagnosis.

In conclusion, a case of cervical ectopic pregnancy is described, complicated by preexisting cardiomyopathy, which was successfully managed conservatively in a sequential way by involving a multidisciplinary team of experts. The risk of major surgery was hence avoided.

CLINICAL SIGNIFICANCE

Even with advanced diagnostic modalities and reduction in current mortality rates, cervical pregnancy remains a life-threatening condition. It is of utmost importance to be thorough with the emerging trends in its management, as it comes with the promise of being unpredictably catastrophic.

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