

Cervical Ectopic Pregnancy with Diagnostic Challenges and Conservative Surgical Management: A Case Report

Raja Rajeswari KS¹, Sadhana Karthikeyan², Priya Shaunthini³

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ABSTRACT

Cervical ectopic is a rare potentially life-threatening condition where a fertilized egg implants in cervical canal instead of uterine cavity. This abnormal implantation can lead to catastrophic hemorrhage. This condition poses significant diagnostic and management challenges and we present one such case. She was a 30-year-old parous woman with previous two cesarean sections on lactational amenorrhea with complaints of bleeding per vaginum for 15 days, with an ultrasound scan done elsewhere suggestive of cesarean scar ectopic pregnancy. Sonological and clinical examination clinched the diagnosis of cervical ectopic pregnancy. She was initially started on medical management, which failed and she had profuse bleeding per vaginum, hence had to proceed to surgical management. With preparedness for all consequences, proceeded with suction evacuation under ultrasound guidance. When bleeding was profuse even after complete evacuation tried bilateral descending cervical artery ligation which helped to achieve complete hemostasis. Diagnostic hysteroscopy was done to confirm the findings. Intracervical Foley's tamponade was kept at the end of the procedure. We are presenting this case to emphasize the importance of applying clinical guidelines promptly and correctly in our day today's clinical practice to achieve the best outcome. Early detection and prompt intervention are crucial to prevent complications and preserve fertility.

Keywords: Case report, Cervical ectopic, Descending cervical artery ligation, Sliding sign.

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INTRODUCTION

Cervical ectopic pregnancy (CEP) is a rare form of ectopic pregnancy where the embryo implants inside the cervical canal. It presents with painless vaginal bleeding following a period of amenorrhea. High index of suspicion with early diagnosis using ultrasonography as a diagnostic tool and appropriate management will prevent serious complications. Inadequate contractility of the cervical tissue causes the placental vessels to bleed torrentially causing life-threatening hemorrhage which may warrant hysterectomy. No definitive guideline regarding management has been proposed as yet. We present an interesting case of CEP, highlighting early diagnosis, appropriate management, and challenges encountered during management.

CASE DESCRIPTION

A 30-year-old parous woman with previous two cesarean sections on lactational amenorrhea for the past 1 year presented with complaints of bleeding PV for 2 weeks with lower abdominal pain for 3 days with an ultrasound report done elsewhere suggestive of scar ectopic pregnancy of 10 weeks gestation without cardiac activity. Her general examination revealed significant pallor with soft non-tender abdomen with a healthy supra pubic cesarean scar. Speculum examination revealed minimal bleeding with gestational sac protruding through the external cervical OS. If she had not done an ultrasound scan before, we would have thought it to be an expelling gestational sac. Since the ultrasound report was scar ectopic pregnancy, we did not dare to meddle with it. A repeat ultrasound was done by an experienced sonologist in our presence, which revealed an empty uterine cavity confirming the finding of ectopic pregnancy. The gestational sac which was present below the uterine cavity was corresponding to 7 weeks with absent cardiac activity. Contrary to the previous scan, we

^{1,2}Department of Obstetrics and Gynecology, Southern Railway Headquarters Hospital, Chennai, Tamil Nadu, India

³Department of Radiology, Southern Railway Headquarters Hospital, Chennai, Tamil Nadu, India

Corresponding Author: Sadhana Karthikeyan, Department of Obstetrics and Gynecology, Southern Railway Headquarters Hospital, Chennai, Tamil Nadu, India, Phone: +91 6380850206, e-mail: Sadhana31051997@gmail.com

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found the sac to be below the internal OS which is against the diagnosis of cesarean scar ectopic by RCOG guidelines. For diagnosing a scar ectopic pregnancy, the gestational sac should be above the internal OS and at the level of the cesarean scar and cervical canal should be empty. In our case, since the sac was big, it was almost abutting the previous scar, but on looking carefully, we were able to make out that the gestational sac was below the internal OS and in the cervical canal. But external OS was not made out clearly sonologically. Since we had already found that the sac was protruding through the external OS, we confirmed that the gestational sac was in the cervical canal. Now the challenge was to differentiate between expelling gestational sac and CEP. Sliding sign was negative and peripheral trophoblastic flow was seen as

suggestive of viable gestation. In an expelling pregnancy, sliding sign will be positive and the pregnancy will be nonviable, thus confirming the diagnosis of CEP.

Serum beta-hCG done on the day of presentation was 969 mIU/mL. Hemoglobin was 6 gm/dL. Since there is no clear-cut evidence to suggest one management to be superior over the other, medical management was started as the Hb was low and bleeding was minimal. Two units of packed red cells was transfused and 75 mg of intramuscular methotrexate injection was given after calculating the dose using Mosteller formula. There was an almost 50% fall in serum beta-hCG value to 507 mIU/mL after 48 hours of starting MTx. But suddenly, she had heavy bleeding per vaginum. On examination, she had severe pallor, hypotension, and tachycardia. Since she was hemodynamically unstable, proceeded to surgical management after getting consent and a detailed explanation about the possible procedures. Keeping in mind all the possible surgical management options required, the surgical team was prepped to perform any procedure starting from the simple suction evacuation to laparotomy and internal iliac artery ligation/hysterectomy. Since the products of conception were protruding through the external OS, a decision was taken to start with its evacuation. In the meantime, 1 unit of packed cell transfusion was started. Under spinal anesthesia, the products of conception in cervix were removed using ovum forceps and Karman cannula under transabdominal ultrasound scan guidance. Cautery was used to achieve hemostasis but in vain. After the complete evacuation of the products of conceptus also there was persistent bleeding; hence, decided to do hysteroscope and see the source of bleeding. A 30° hysteroscope was introduced, a cervical canal was found to be roomy and vision was obscured by fresh bleeding from the anterior wall of the cervical canal. Hysteroscope was passed beyond the internal OS, and both the uterine cavity and cesarean scar site were inspected and found to be normal confirming our diagnosis. In view of persistent bleeding, decided to do bilateral descending cervical artery ligation before proceeding to laparotomy. A descending cervical artery was ligated bilaterally using 1-0 vicryl suture by taking deep sutures at 3 and 9 o'clock positions. To our surprise and relief, the bleeding stopped completely. A 24 F Foleys catheter was placed in the cervix with 20 mL NS for tamponade effect and left in situ for 12 hours. Parenteral antibiotics and parenteral iron correction were given in the postoperative period. Repeat serum beta-hCG after 2 weeks was normal.

DISCUSSION

Following fertilization, if the embryo transits through the fallopian tube, and implants outside the endometrial cavity below the level of internal OS in the cervix, it is CEP. The incidence of CEP is less than 0.1% of all ectopic pregnancies.¹ Artificial reproductive techniques, pelvic inflammatory disease, repeated uterine curettage, recurrent abortions, and intrauterine devices are some of the known risk factors for ectopic pregnancy (Fig. 1).

Various pathogenesis for ectopic pregnancy viz., Kouliev et al., have attributed, damaged endometrium to cause the failure of implantation of blastocyst in the uterine cavity.² Hofmann et al. proposed that the endometrial asynchrony is another cause for the failure of implantation in the endometrium.³

ESHRE has classified cervical pregnancy into two types, namely, partial and complete. When ectopic is completely confined to the cervical stroma, it is known as complete cervical ectopic

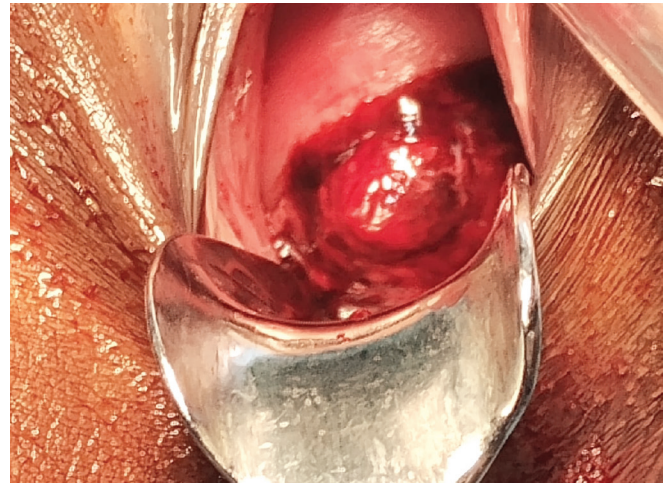


Fig. 1: Cervical ectopic pregnancy

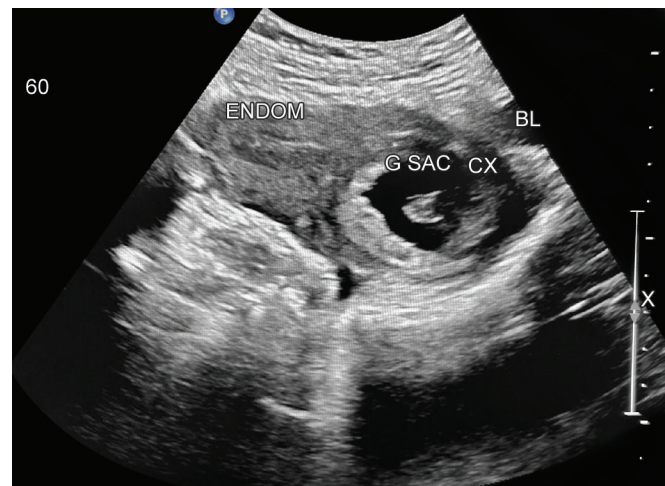


Fig. 2: Ultrasound imaging

whereas cervical pregnancy extending into the endocervical canal is partial cervical pregnancy.⁴

The most common clinical presentation is painless vaginal bleeding. On speculum examination, the cervix is usually hyperemic, with bluish discoloration of products of conception due to venous congestion seen through the external OS. The potential diagnosis that is to be differentiated from cervical ectopic includes incomplete miscarriage, cervical carcinoma, cervical or prolapsed submucosal leiomyoma, gestational, trophoblastic disease and low-lying placenta. Subnormal increase in human chorionic gonadotropin (β -hCG) raises a suspicion of ectopic pregnancy (Fig. 2).

Mc Elin proposed clinical criteria for a diagnosis of cervical pregnancy which include:

- Profuse painless vaginal bleeding following a period of amenorrhea.
- A soft distended cervix that is usually larger than the corpus.
- Palpable placenta in the endocervix.
- A closed internal cervical OS.

The ultrasound criteria to diagnose CEP include:

- Gestational sac or placenta visualized within the cervix.
- Cardiac motion was noted below the level of internal OS.

- Absent intrauterine pregnancy.
- Hourglass uterine shape with ballooned cervical canal.
- No sliding sign.
- Closed internal OS.

The two probable diagnoses that present with similar clinical features include incomplete miscarriage and scar pregnancy.

The “sliding sign” enables cervical ectopic pregnancies to be distinguished from miscarriages that are within the cervical canal. Movement of the sac with pressure from the transvaginal probe is noted in incomplete abortion which is absent in CEP.⁴ The differentiating feature between scar pregnancy and cervical pregnancy is the location of the pregnancy. Scar pregnancy is located at the cesarean scar site, above the internal OS whereas cervical pregnancy is located below the internal OS.

The most favorable treatment for cervical pregnancy is debatable. Both conservative and surgical methods have been used for management. The failure rate for medical management is higher in those with gestational age >9 weeks, B-HCG >10,000 mIU/mL, Crown-rump length more than 10 mm, the presence of fetal cardiac activity for whom surgical management is preferred.

Treatment Options Include:

- Systemic chemotherapy: Methotrexate is the first-line drug used for management. Single dose of 50 mg/m² or multidose 1 mg/kg on day 1, 3, 5, and 7 has been used. Serial beta-hCG follow-up is done to assess treatment response. However, methotrexate is contraindicated in the case of hypersensitivity, immunodeficiency, active pulmonary disease, hepatic, or renal dysfunction.
- Tamponade with Foley catheter: In case of hemorrhage, a 26F Foleys catheter with a 30 mL balloon is inserted intracervically and inflated to achieve hemostasis by tamponading effect on the vessel. The balloon can be left inflated for 24–48 hours and then gradually deflated with adequate hemostasis.⁵
- Intra-amniotic feticide: For those in whom failure rates of methotrexate are high, feticidal potassium chloride can be injected into the fetus or gestational sac under ultrasound guidance. Sonographic resolution lags behind beta-hCG fall.
- Reduction of blood supply: Preoperative uterine artery embolization is a great option to decrease blood loss, vasopressin can be injected intracervically, compression of the feeding vessel by placing hemostatic sutures at the level

of internal OS, hemostatic sutures at 3, 9 o'clock position to occlude the descending cervical branches of uterine arteries are the various options that can be considered to reduce blood loss.

- Surgical excision of trophoblast: Suction evacuation with consent for massive transfusion and hysterectomy is the surgical method of removal of trophoblastic tissues. Hysterectomy may be required in case of intractable hemorrhage. Therefore, suction evacuation along with mechanical methods like cervical artery ligation have hemostatic effect and is an excellent option in managing cervical pregnancy.

CONCLUSION

A combined approach of descending cervical/uterine artery ligation followed by hysteroscopic local endocervical resection to terminate cervical pregnancy has been described as a fertility-preserving option for managing cervical pregnancy. Early detection and prompt intervention are crucial to prevent complications and in fertility preservation. We are presenting this case to emphasize the importance of applying appropriate clinical guidelines appropriately in our day-to-day clinical practice to achieve the best outcome.

ORCID

Sadhana Karthikeyan  <https://orcid.org/0009-0001-1373-8595>

REFERENCES

1. Shirinzadeh L, Jafarian AH, Davachi B, et al. Successful management of cervical ectopic pregnancy: A case report. *J Midwifery Reprod Health* 2020;8(2):2254–2258. DOI: 10.22038/jmrh.2019.35481.1385.
2. Kouliev T, Cervenka K. Emergency ultrasound in cervical ectopic pregnancy. *J Emerg Med* 2010;38(1):55–56. DOI: 10.1016/j.jemermed.2007.09.059.
3. Hofmann HM, Urdl W, Höfler H, et al. Cervical pregnancy: Case reports and current concepts in diagnosis and treatment. *Arch Gynecol Obstet* 1987;241(1):63–69. DOI: 10.1007/BF00931444.
4. ESHRE working group on Ectopic Pregnancy; Kirk E, Ankum P, et al. Terminology for describing normally sited and ectopic pregnancies on ultrasound: ESHRE recommendations for good practice. *Hum Reprod Open* 2020;2020(4):hoaa055. DOI: 10.1093/hropen/hoaa055.
5. Singh S. Diagnosis and management of cervical ectopic pregnancy. *J Hum Reprod Sci* 2013;6(4):273–276. DOI: 10.4103/0974-1208.126312.