Cervical Pregnancy: Modes of Management

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ABSTRACT

Aim: To identify the various conservative methods available for the management of ectopic pregnancy.

Background: Cervical pregnancy is a rare variant of ectopic. It is associated with high morbidity and mortality. Earlier hysterectomy was the treatment of choice. But now, various conservative methods are used to preserve fertility. Here, we present four cases, each managed with a different method.

Case description: This was an analysis of cervical ectopic pregnancies in our hospital. The diagnosis of cervical pregnancy was made using transvaginal ultrasound. Serum β -human chorionic gonadotropin (β -hCG) levels were measured at presentation and monitored subsequently to determine the rate of successful resolution. Medical management involved administration of systemic or intra-sac instillation of methotrexate, with or without intra-amniotic potassium chloride, suction and evacuation with the use of Foley's tamponade, and uterine artery embolization.

Conclusion: This article shows that the conservative management is safe and effective.

Clinical significance: Ectopic pregnancy can be managed with the conservative methods other than resorting to hysterectomy.

Keywords: Ectopic pregnancy, Management, Methotrexate.

Journal of South Asian Federation of Obstetrics and Gynaecology (2019); 10.5005/jp-journals-10006-1736

BACKGROUND

When the fertilized ovum becomes implanted in a site other than the normal uterine cavity, it is called an ectopic pregnancy. It is a life-threatening condition that must be ruled out in any woman presenting with amenorrhea, vaginal bleeding, and lower abdominal pain.

Cervical pregnancy is a rare variant of ectopic pregnancy. Implantation occurs in the cervical canal or below the internal os. Previously, hysterectomy was the treatment of choice, but now, the conservative methods have been used to preserve fertility. Here, we present four cases of cervical pregnancy managed conservatively using different modes.

CASE DESCRIPTION

Case 1

Primi at 7 weeks + 1 day came with complaints of spotting per vaginum (pv) for 5 days. Vitals were stable.

Transvaginal scan (TVS) of the pelvis done showed a gestational sac measuring $0.8 \times 0.6 \times 0.7$ cm in the cervical canal with no intrasac contents suggestive of cervical ectopic pregnancy.

Serum β -human chorionic gonadotropin (β -hCG) on admission—8,117 mIU/mL.

She was managed with four doses of injection methotrexate 71 mg intramuscular (IM) alternated with injection folinic acid 7.1 mg IM.

Follow-up β -hCG values:

D3—604 mIU/mL

D6—369 mIU/mL

D10—96 mIU/mL

D21—<2 mIU/mL

Case 2

Primi at 5 weeks + 5 days came with complaints of spotting pv for 7 days. Vitals were stable.

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How to cite this article: Daniel O, Usha Rani G, Sirisha PSNRS. Cervical Pregnancy: Modes of Management. *J South Asian Feder Obst Gynae* 2019;11(6):392–396.

Source of support: Nil

Conflict of interest: None

TVS pelvis done showed thickened echogenic cavity with right adnexa showing heterogeneous mass of 2.1×1.8 cm with vascularity suggestive of right unruptured ectopic pregnancy.

Initial β -hCG done—7,072 mIU/mL. She was referred to our hospital for further management.

β -hCG repeated on admission in our hospital 2 days later—18,271 mIU/mL.

In view of increasing β -hCG, patient was planned for laparoscopic salpingectomy.

Intraoperative bilateral tubes and ovaries normal as shown in Figure 1.

Intraoperative TVS pelvis done showed a hypoechoic lesion 1.5×0.7 cm noted in the cervical canal as shown in Figure 2. Under ultrasound guidance vasopressin injected transvaginally into the cervix and suction and evacuation done. Products removed in toto and sent for histopathological evidence (HPE). Foley's tamponade done. Foley's removed after 24 hours.

Follow-up β -hCG values:

Postoperative day (POD) 1—4,614 mIU/mL

POD 5—399 mIU/mL

POD 12—22 mIU/mL

POD 19—<2 mIU/mL

HPE—products of conception

Fig. 1: This shows bilateral tubes normal

Fig. 2: Scan shows a gestational sac of 1.5×0.7 cm in the cervical canal

Case 3

Primi at 6 weeks + 5 days came with complaints of spotting pv for 3 days and lower abdomen pain for 1 day.

On admission, vitals were stable.

Scan done showed a gestational sac distal to the cervix with fetus of crown rump length (CRL) 2.5 mm with fetal cardiac activity (FH) suggestive of cervical ectopic as shown in Figure 3.

β -hCG—21,553 mIU/mL

She was given three doses of injection methotrexate 86 mg IM alternated with injection folinic acid 8.6 mg IM.

Follow-up β -hCG values:

D3—30,108 mIU/mL

D6—30,765 mIU/mL

Fourth dose of injection methotrexate 86 mg IM was given.

Repeat scan showed a viable cervical pregnancy.

Hence, intrasac KCl injection was given under ultrasound guidance on day 7.

Scan repeated after 2 days showed no gestational sac or fetal pole as shown in Figure 4.

Follow-up β -hCG values:

D8—20,911 mIU/mL

D10—16,284 mIU/mL

D12—10,520 mIU/mL

D21—398 mIU/mL

D30—3 mIU/mL

Case 4

G3P1L1A1 at 7 weeks + 5 days, previous lower segment cesarean section came with complaints of brownish discharge for 1 day.

Scan done showed viable cervical pregnancy.

β -hCG on admission—81,753 mIU/mL

She was given three doses of injection methotrexate 65 mg IM alternated with injection folinic acid 6.5 mg IM.

D4—104,575 mIU/mL

Transcervical intrasac instillation of methotrexate 50 mg was done on day 5.

Injection folinic acid 6.5 mg IM given on day 6.

Scan repeated on day 7 showed a single live intrauterine gestational sac corresponding to 7 weeks + 4 days with fetal heart rate.

Suction and evacuation with uterine artery embolization was done as shown in Figure 5.

The summary of the results are shown in Table 1.

DISCUSSION

Cervical pregnancy was first described in 1817.¹

It occurs in <1% of ectopic pregnancies.² Incidence is 1 in 16,000 to 18,000 pregnancies.³ Most commonly occurs with assisted reproductive techniques. The exact cause of cervical pregnancy is not known. History of dilatation and curettage, intrauterine contraceptive device (IUCD) use, pelvic inflammatory disease, and previous caesarean sections are seen as predisposing factors in cervical pregnancy.⁴ We have one case with previous LSCS. Patients present with painless vaginal bleeding in the first trimester although some present with cramping abdominal pain. On examination, there is a soft, distended cervix which is enlarged compared with the uterus. However, these signs were not seen in our cases. Palman and McElin proposed the following clinical criteria for diagnosing this condition.⁵

- Uterine bleeding without cramping pain following a period of amenorrhea
- Hourglass-shaped uterus
- Partly open external os
- Closed internal os

Table 1: Summary of the results

	Case 1	Case 2	Case 3	Case 4
Parity	Primi	Primi	Primi	G3P1L1A1 previous LSCS
Gestational age	7 weeks + 1 day	5 weeks + 5 days	6 weeks + 5 days	7 weeks + 4 days
Initial β -hCG in mIU/mL	8,117	18,271	21,553	81,753
Scan—gestational sac	0.8 × 0.6 × 0.7 cm	1.5 × 0.7 cm	1.78 cm	2.7 × 1.7 cm
CRL			0.25 cm	0.7 cm
FH			+	+
Management	Multidose methotrexate alternating with folinic acid	Suction and evacuation with Foley's bulb tamponade	Multidose methotrexate regime. Intra-amniotic KCl injection	Multidose methotrexate regime. Intrasac methotrexate injection. uterine artery embolization with suction and evacuation
Follow-up β -hCG values in mIU/mL	D3—604, D6—369, D10—96, D21—<2	POD 1—4,614, POD 5—399, POD 12—22, POD 19—<2	D8—20,911, D10—16,284, D12—10,520, D21—398, D30—3	POD 1—48,107, POD 21—657, POD 28—21, POD 35—<2

Fig. 3: Scan shows a single gestational sac diameter measuring 1.78 cm corresponding to 5 weeks 6 days. Yolk sac and fetal pole seen. CRL 2.5 mm with FH seen. Increased vascularity is seen

- Products of conception entirely confined within the cervix and firmly attached to the endocervix.

Ultrasonography shows a pregnancy in the cervical canal with an empty uterine sac, ballooned cervical canal containing gestational sac, and closed internal os.

Five treatment options for cervical pregnancy management:¹

- **Chemotherapy**—The most commonly used agent is methotrexate. Methotrexate may be associated with gastrointestinal (GI) disturbances and bone marrow suppression. Described as a fertility preserving alternative therapy.

Fig. 4: TVS pelvis on day 11—scan shows a normal appearing uterus, endometrial cavity, both ovaries, both adnexa, and pouch of Douglas. Cervical canal appears distended with echogenic debris and surrounding vascularity. The distended area measures 3.8×3.5 cm

Fig. 5: Uterine artery embolization

- Intra-amniotic KCl injection—Ultrasound-guided intra-amniotic instillation of potassium chloride has been used as a conservative approach in the management of cervical pregnancy.
- Tamponade with Foley catheter—Use of Foley catheter, placed gently past the external os has been used to prevent blood loss.
- Curettage—Used for the surgical excision of trophoblast tissue. Side effects include hemorrhage.

- Reduction of blood supply—Embolization of uterine arteries is used as a rescue therapy when profuse bleeding follows other conservative methods or surgical methods such as curettage.

In the present series, two cases which had a gestational sac without fetal pole were managed by systemic multidose methotrexate in one case and suction and evacuation and Foley's tamponade in the other.

In the other two cases in which FH was seen, one which had a β -hCG of 21,553 mIU/mL responded to a combination of multidose systemic methotrexate with intrasac injection of KCl, and the other which had a β -hCG of 81,753 mIU/mL was managed with systemic multidose methotrexate, intrasac instillation of methotrexate, and suction and evacuation under uterine artery embolization.

CONCLUSION

Although cervical pregnancy is rare, the risk of cases increases with previous caesarean sections and use of artificial reproductive techniques (ART). The success of conservative treatment depends on timely and prompt diagnosis with ultrasound which can reduce the chance of life-threatening hemorrhage or hysterectomy.

CLINICAL SIGNIFICANCE

Ectopic pregnancy can be managed with the conservative methods other than resorting to hysterectomy.

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