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Cervical Ectopic Pregnancy: A Case Series Exploring Therapeutic Approaches

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Abstract:
Ectopic pregnancy is a condition in which there is implantation of blastocyst at a site other than the uterus such as fallopian tube, ovaries, scar of which cervical ectopic pregnancy has an incidence of less than 0.1%. Early intervention is key to preserving fertility and eliminating the need for invasive surgeries. We are reporting four case series of cervical ectopic pregnancies and their reproductive outcomes based on monitoring serial beta hCG levels, also that early diagnosis by ultrasonography can help in preserving uterus for those wanting future pregnancies.

Key Words: *cervical ectopic pregnancy, medical management of cervical ectopic pregnancy, methotrexate, reproductive outcome, early diagnosis by ultrasonography*

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I. Introduction:

Ectopic is derived from Greek word ‘ektopos’ meaning 'away from a place'. Ectopic pregnancy is a pregnancy where the gestational sac which is the blastocyst gets implanted to any place other than the uterine endometrium. It is one of the most dreaded emergencies in gynecology and its modern management is one of the medicine’s greatest success stories. Cervical pregnancy is an uncommon type of ectopic pregnancy in which the fertilized egg implants in the cervical canal, rather than in the uterus. he incidence of cervical pregnancy is <1% of all ectopic pregnancies. 90% of women with cervical pregnancy present with painless vaginal bleeding. At times cervical ectopic pregnancy may mimic a miscarriage in transit through the cervix. In the past cervical ectopics were associated with significant blood loss which was then treated with hysterectomy, however early diagnosis with improved ultrasound resolution has led to a more conservative management approach leading to preservation of fertility. Given the rarity of cervical ectopic pregnancies, the method of maximum effectiveness is still under investigation.

Risk factors include assisted reproductive techniques (ART), prior uterine curettage, previous cesarean section, use of intrauterine contraceptive devices.

(A written informed consent was obtained from the patient/parent/guardian, or relative for the publication of the patient's clinical details and/or images. The signed consent form can be accessed by the Editor of this journal.)

II. Case Reports-

CASE 1

A 22 year old female, Gravida 1, with 5 weeks gestational age presented with history of bleeding per vagina since 15 days and positive pregnancy test. On per vaginal examination, cervix was ballooned up and showed spotting, uterus was of 8 weeks size. Beta Hcg value was 1882 mIU/ml on admission. A gestational sac measuring 0.6 cm in diameter was observed on the anterior wall of the cervix via USG TVS, with a fetal pole present but absent cardiac activity. 6 doses Injection methotrexate 64mg IM as per body weight was given, with

alternating with Injection Leucovorin 7mg IM (6 doses). Beta Hcg values after initiation of this therapy was 1058.5 mIU/ml on 15th day, 550mIU/ml on 22nd day, 200mIU/ml on 35th day and negative after 55 days with normal USG.

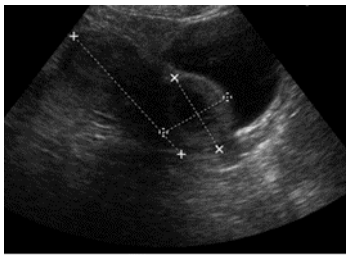

Figure 1. USG showing ballooning of cervical canal

CASE 2-

A 32 year old female, Gravida 2, Para 1 (previous normal delivery) with 6 weeks of amenorrhea with UPT positive status for ANC check up with no complains was asked to follow up with scan. The patient came with transvaginal ultrasonography report which showed absent intrauterine gestational sac nor adnexal mass with oblong shaped gestational sac in cervical canal. Beta hcg level on admission was 5670 mIU/ML, haemoglobin 10.2 g/dl, white blood cell counts 12,000 and platelet count of 2,50,000 /mL.

Patient was admitted and counselled about risk complications and different treatment modalities, and high-risk consent taken, patient was taken for dilatation and curettage under general anaesthesia. Intraoperative period was uneventful. Sample was sent for histopathology. Postoperative period was uneventful. Beta Hcg repeated after 1 week of curettage was 980 mIU/ml. Subsequent visits revealed no abnormalities.

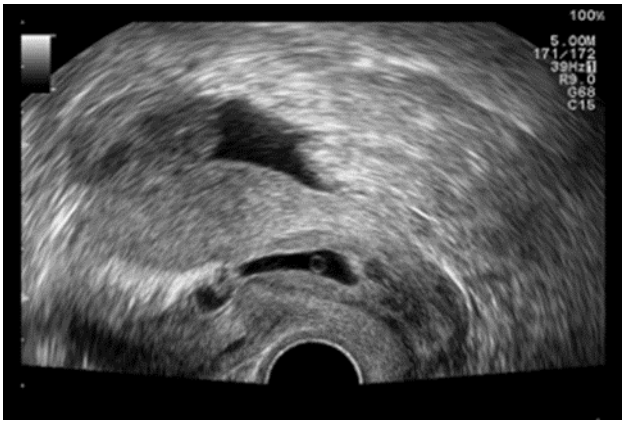

Figure 2. gestational sac seen in cervical canal

CASE 3-

A 28 year old female, Gravida 2, Para, 1 Living 1 (previous normal delivery) with 8 weeks of amenorrhea, UPT positive, referred from private hospital, presented to casualty with profuse bleeding per vaginum in haemorrhagic shock. On examination, pulse was 130 bpm, blood pressure was 90/60 mmhg. On PV examination pack was in situ, bleeding and passage of clots noted. Transabdominal ultrasonography showed absent intrauterine gestational sac or adnexal mass, ballooned cervical canal noted. On admission, Hb was 6.8 gm/dl, TLC- 11,800, platelet – 1,43,000 and Beta hcg level of 9500, 1 PCV and 2 FFP was issued and transfused. Exploration under anaesthesia was planned. Cervical canal and vagina inspected, pack was removed; bleeding could not get controlled and patient was hemodynamically unstable, decision of exploratory laparotomy was taken. Intraoperatively, uterus, fallopian tubes and ovary appeared normal, cervical ectopic noted. As patient was hemodynamically unstable, decision of obstetric hysterectomy was taken.

Intraoperatively 2PCV and 2FFP transfused. Post operative period uneventful. On day 2, Hb- 7.8, TLC- 12000, platelets – 2.3 lakh and beta Hcg value of 876.

CASE 4-

A 30 year old female, Gravida 2 abortion 1 with 7 weeks of amenorrhea, UPT positive, came to the casualty with abdominal pain and one episode of fever. On PV examination, there was cervical motion tenderness and spotting. Patient had history of dilation and evacuation done in the past for spontaneous abortion. Transabdominal and transvaginal ultrasound showed empty uterine cavity with distended cervix and a 3.2* 2.5

cm intracervical gestational sac present with cardiac activity, which was suggestive of cervical ectopic pregnancy with live gestational sac of 6.4 weeks. Beta HCG levels measured 14,000. Decision was taken to do USG guided local infiltration of methotrexate. 1.5 ml of methotrexate was injected into the sac under spinal anaesthesia. Repeat USG done after a day which showed gestational sac partially in the lower uterine segment and partially in the cervix with absent fetal cardiac activity. Hysteroscopic dilatation and curettage done after 1 week to remove chunks of remaining trophoblastic tissue and confirm normal uterine cavity. Post operative period uneventful. Serial beta HCG levels showed decreasing trend and repeat USG on day 20 showed no abnormal findings.

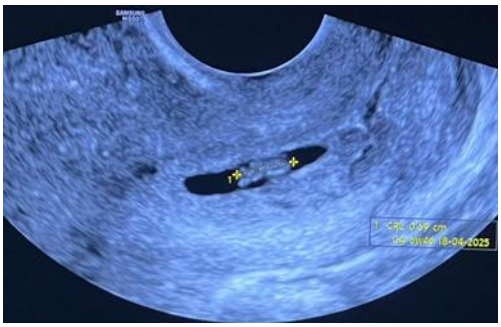

Figure 3

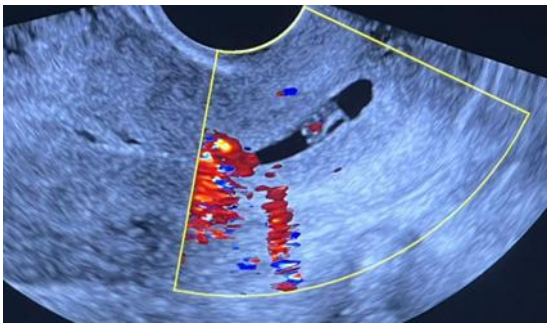

Figure 3 & 4. USG showing empty uterine cavity with intracervical gestational sac

CASE 5-

A 30 years old female, P1L1 (previous LSCS) with 5 weeks of amenorrhea, UPT positive came to the casualty with bleeding per vagina. She had one previous child conceived by IVF conception and delivered by lower segment caesarean section 4 years back. Transabdominal and TVS ultrasound showed ballooning of cervical canal with gestational sac present and an empty uterine cavity with thickened endometrium, a provisional diagnosis of cervical ectopic pregnancy was made. Beta hcg on admission was 1540 mIU/ml. Single dose injection methotrexate was given according to patient's body weight. Weekly beta hCG follow up was taken till beta hCG levels came negative at 4th week. Repeat ultrasound after negative beta hCG levels showed no abnormal findings.

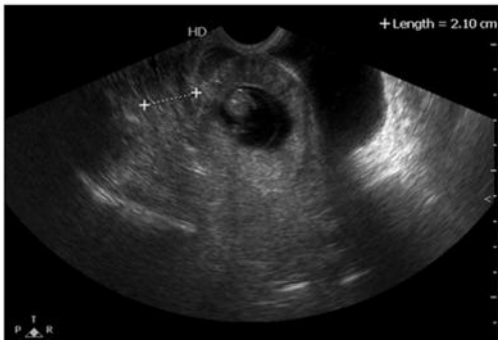

Figure 5. USG showing thickened endometrial thickness with empty uterine cavity

III. Observations And Results:

CASE NO	1	2	3	4	5
PATIENT AGE	22	32	28	30	30

GRAVIDA, PARA	G1	G2P1L1	G3P1L2A1	G2P1L1	G2A1
HISTORY OF DILATTATION AND CURETTAGE	None	None	Once	None	Once
HISTORY OF C-SECTION	None	None	None	One	None
GEASTATIONAL AGE	5 weeks	6 weeks	8 weeks	5 weeks	7 weeks
CLINICAL FEATURES:					
1)PAIN	-	-	+	-	+
2)BLEEDING	Minimal	-	Massive	Minimal	Minimal

CASE	**GA (weeks)**	**Basal BhCG**	**Management**	**Beta hCG after procedure**	**Time until Beta hCG undetectable (Days)**	**Outcomes**
CASE 1	5	1882	Methotrexate alternating with Leucovorin	1058	35th day	**Complete Resolution**. • Pre-procedure and post procedure LFT within normal limits. • USG normal on 55th day • No complications • Patient followed up for 1 year, Patient conceived later.
CASE 2	6	5670	D & C	980	14th day	**Complete Resolution** • No complications • Patient conceived after 6 months
CASE 3	8	9500	Hysterectomy	876	7th day	**Complete Resolution** • Complications – blood loss of approx. 2000ml
CASE 4	7	14000	Intracervical methotrexate single dose	1285	23rd day	**Complete Resolution** • No complications • USG normal after 20 days.
CASE 5	5	1540	Methotrexate single dose	undetectable	25th day	**Complete Resolution** • No complications • Pre procedure and post procedure LFT normal.

IV. Discussion:

At present, there are no standardized treatment protocols globally for cervical ectopic pregnancy, as management approaches are primarily based on various case series studies due to the condition's rarity. In 1911, Rubin proposed specific pathological criteria for diagnosing cervical ectopic pregnancy, which include the following conditions

1) the presence of cervical glands located at the site of placental attachment
2) an intimate and close connection between the placenta and the cervix
3) the placenta being positioned below the entry of the uterine vessels or beneath the peritoneal reflection on both the anterior and posterior uterine surfaces, and
4) no evidence of fetal components within the uterine corpus.

3D USG & MRI is diagnostic. The choice of management depends on multiple modalities, gestational age, initial serum beta hCG level, presence of foetal cardiac activity, vaginal bleeding and desire to preserve fertility. The risk of hysterectomy and morbidity tends to be higher in cervical pregnancy with advanced gestational age. It is essential to distinguish between a cervical pregnancy and an inevitable abortion. The presence of a sliding sign, where the gestational sac moves with a vaginal probe, or dilation of the internal os, suggests a

higher likelihood of an inevitable abortion. The treatment modalities for cervical ectopic depends on the gestational age, haemodynamic stability of the patient and the desire for future fertility. It includes medical management, dilatation and curettage, or hysterectomy. Newer treatment method includes hysteroscopic resection. Even with early diagnosis and newer treatment options, CP remains a life-threatening condition.

V. Conclusion:

The early diagnosis of an ectopic pregnancy, with the help of a transvaginal ultrasound (TVS) and serum beta hCG levels, can open up ways to a conservative management protocol to those wanting future pregnancies.

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