

A Rare Case Report of Cervical Ectopic Pregnancy

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Abstract

Pregnancy that implants in a site outside the uterine cavity is called Ectopic pregnancy. Cervical ectopic pregnancy constitutes only less than 1% of ectopic pregnancies, is potentially life threatening, and treatment on its part is assorting with a great challenge because of possible catastrophic bleeding. The diagnosis of cervical pregnancy can now be made much earlier with the aid of ultrasound and β -human chorionic gonadotropin measurements. Early diagnosis and conservative management with methotrexate can reduce maternal morbidity and mortality. 28-year-old gravida 3, para 1, living 1, abortion 1 with a previous caesarean section was seen at 9 weeks and 6 days of amenorrhea with a history of intermittent vaginal bleeding since 4 days and no pain abdomen. Ultrasound showed an empty uterine cavity and a gestational sac with cardiac activity located in the cervical canal. Serum beta-human chorionic gonadotropin was significantly elevated to 83,990 mIU/mL. The patient was given methotrexate and leucovorin, supplemented by evacuation and the placement of a Foley catheter for bleeding control. Histopathology confirmed cervical ectopic pregnancy. Serial beta HCG measurements showed a progressive decline, and complete resolution occurred after the institution of multiple doses of methotrexate. Follow-up ultrasound confirmed successful treatment without the risk of surgical intervention (Laparotomy). The most common mode of presentation for cervical ectopic pregnancies is painless vaginal bleeding associated with history of amenorrhea and therefore calls for suspicion of ectopic pregnancy. Early transvaginal ultrasound is mandatory to diagnose ectopic pregnancy. While medical management using methotrexate is very effective, it involves diligent monitoring of beta HCG to guide success and prevent severe complications. The following case illustrates the role of early ultrasound diagnosis and conservative medical management in the treatment of cervical ectopic pregnancy, which may avoid life-threatening haemorrhage and hysterectomy.

Keywords: Ectopic Pregnancy, Management.

Introduction

Cervical pregnancy is a rare and life-threatening kind of ectopic pregnancy where the embryo grows within the cervical canal. Incidence is less than 1% of all ectopic pregnancies and is associated with diagnostic and therapeutic challenges. Cervical ectopic pregnancy compared with more commonly seen tubal ectopic pregnancies, might pose a higher risk of disastrous bleeding because of the rich vascularity in the cervix. This forms the

basis for timely and correct diagnosis to forestall severe maternal morbidity and mortality [1].

The pathophysiology of cervical pregnancy consists of the implantation of a fertilized ovum within the cervical mucosa, occurring at or below the internal os. While its exact aetiology remains largely unknown, there are several identified risk factors which include previous caesarean sections, prior ectopic pregnancies, a history of uterine curettage or pelvic inflammatory disease, smoking, or the use of

assisted reproductive technologies of in-vitro fertilization. These may result in aberrant uterine milieus or alter normal events of implantation, predisposing them to atypical sites of implantation.

Cervical pregnancies mostly present with painless vaginal bleeding that occurs after some time of amenorrhea. The bleeding is sometimes mild, sometimes continuous, and may vary in between from mild to severe. Some patients may come up with significant bleeding and thus need urgent attention. Since the condition is relatively rare and nonspecific in symptoms, misdiagnosis may occur with inappropriate management that worsens the condition of the patient [2].

Transvaginal ultrasound has become the cornerstone for the diagnosis of cervical pregnancy. This allows for the assessment of direct visualization of a gestational sac within the cervical canal, therefore differentiating it from the other types of ectopic pregnancies or intrauterine pregnancies. Key sonographic findings include an empty uterine cavity, a gestational sac inside the cervical canal, and a "sliding sac sign"—when slight pressure is applied with the ultrasonographic probe, the gestational sac inside the cervix is moved. Doppler ultrasonography also needs to be carried out, which may additionally characterize the increased vascularity around the gestational sac.

The management of cervical ectopic pregnancy has undergone many changes with time, and recently, it has shown much overall increasing interest in more conservative and fertility-preserving approaches. Traditionally, surgical intervention by dilation and curettage is done in mild cases and hysterectomy in serious cases. Such methods, however, carry heavy risks of morbidity and loss of fertility. The methotrexate therapy has changed the concept of management for cervical ectopic pregnancy. It is a folate antagonist that inhibits DNA synthesis and cellular replication, thus

ending an early pregnancy. Systemic or local administration, depending on the individual case, may be performed [3].

In patients treated with methotrexate, serum beta human chorionic gonadotropin levels should, therefore, be followed up to ascertain if treatment has been successful and if further intervention is necessary. A declining beta HCG level is an indication of a good response to therapy. Persistent or rising levels indicate incomplete resolution and mandate further cycles of treatment or alternative interventions. Serial ultrasound examinations are also indicated to monitor the resolution of the ectopic pregnancy and allow for the early detection of complications [4].

We present this case of cervical ectopic pregnancy for its successful management with methotrexate. This case illustrates that apart from early diagnosis, effective conservative management averts devastating complications while fertility is preserved. Her presentation of symptoms, diagnostic process, and course of treatment adds to the existing body of knowledge on cervical ectopic pregnancies in an attempt to firmly establish the role of timely intervention with favourable outcomes.

Increasing awareness and understanding of cervical pregnancy have opened vast opportunities for improvement in the management of this condition. The prognosis may be considerably improved, and invasive surgical procedures avoided with early and accurate diagnosis using transvaginal ultrasound, besides judicious use of methotrexate. This case epitomizes the multidisciplinary approach for such rare and challenging conditions where the role of the obstetrician, radiologist, and fertility specialist is conjoinedly undeniable toward patient care and its outcome.

Methods

Case Report - A 28-year-old lady, gravida 3 para 1 living 1 abortion 1, with previous caesarean section presented with 9 weeks 6 days of amenorrhea with a history of intermittent painless bleeding per vaginum for 4 days.

Her urine pregnancy test was positive for which she had taken some medications for induction of abortion.

General and Systemic Examination - Revealed no abnormality. The patient was hemodynamically stable.

Abdominal Examination - revealed soft and non-tender abdomen.

Per Vaginum Examination - Cervix was soft and ballooned out with os closed, uterus bulky, both fornices free, no active bleeding.

Investigation

Complete blood count, liver function test, kidney function test, and blood sugar were within normal limits.

Serum beta human chorionic gonadotropin was 83,990 mIU/ml.

Transvaginal sonography shows an empty uterine cavity. A regular gestational sac with cardiac activity is seen in the cervical canal [fig 1]. A crown-rump length of 3.7 cm corresponds to 10 weeks of gestation. Doppler showed peritrophoblastic blood flow [fig 2].

Results

Management

Methotrexate is used conservatively to manage an ectopic pregnancy. When the abnormal pregnancy is rare and threatens the life of the patient, as in cervical ectopic pregnancy, it is illustrated by a stepwise approach using multiple doses of methotrexate with intensive monitoring and managing the complications towards a successful outcome as done in this case.

Methotrexate was given intra-muscular at a dose of 1.0 mg/kg of body weight on days 1, 3, 5, and 7. Leucovorin (folinic acid) was also administered at 0.1 mg/kg of the dose between methotrexate doses (2, 4, 6, 8) to minimize the potential side effects of methotrexate. Methotrexate is a folic acid antagonist, which inhibits DNA synthesis and cellular replication and is extraordinarily important for the rapidly dividing cells in the trophoblastic tissue in an ectopic pregnancy [5].

Serum beta HCG level was repeated after 2 weeks and showed a marked reduction to 70,460 mIU/ml. Despite this reduction, the patient continued to bleed and had an unresolved ectopic pregnancy, necessitating further treatment.

Evacuation and Tamponade

A transvaginal ultrasound-guided evacuation was done under local anaesthesia. Following the evacuation, an 18 French Foley catheter was introduced into the cervical canal and filled with 50 ml of saline. The rationale for this procedure was the tamponade effect, which is considered important in the exertion of direct pressure on the cervical tissue for bleeding control. The Foley catheter was retained for 24 hours and then carefully removed [5].

Histopathological examination of the evacuated tissue yielded chorionic villi, decidual tissue, and cervical stroma with glands, thereby confirming the diagnosis of cervical ectopic pregnancy. Post-evacuation serum beta HCG level was 11,700 mIU/ml on Day 2 and 4,372 mIU/ml on Day 5, indicating a good response to treatment [7].

Although there was initial success, more reduction in levels of beta HCG was required before the ectopic pregnancy could be considered completely solved. The patient was followed for 2 months with beta HCG monitoring done once every 2 weeks.

In the first month, the serum beta HCG level decreased to 612 mIU/ml in the first two weeks

and 75 mIU/ml in the next 2 weeks. The decreasing trend confirmed the effectiveness of the treatment to achieve complete resolution.

In the next month serum Beta HCG level decreased to 20.58 mIU/ml in 2 weeks and 1.39 mIU/ml in the next 2 weeks. At this point, the beta HCG levels were almost in the normal range so the tissue from the ectopic pregnancy had resolved by almost 90%.

After 2 weeks the serum beta HCG was 0.39 mIU/mL, which is a normal level. An ultrasound check-up to monitor progress confirmed complete resolution of the ectopic pregnancy with no residual trophoblastic tissue.

Discussion

Cervical pregnancy represents the implantation of the fertilized oocyte in the cervical canal at or below the internal os. The exact cause is not known. Predisposing factors include previous caesarean section, previous ectopic, prior curettage, pelvic inflammatory disease, smoking, intrauterine devices, in-vitro fertilization, etc. The patient usually presents with painless vaginal bleeding after amenorrhea. Transvaginal ultrasonography is an essential diagnostic tool.

Management can vary from medical to surgical management like hysterectomy. Serial serum beta HCG monitoring is essential for the guidance of success in the therapy instituted.

Conclusion

Cervical ectopic pregnancies can pose a significant threat as they carry the potential for catastrophic haemorrhage and are technically very difficult to diagnose and manage.

This case report highlights an effective multi-dose methotrexate-based management with foley tamponade to control bleeding in a rare case of a cervical ectopic pregnancy [6].

Early and appropriate diagnosis forms the cornerstone in the management of cervical pregnancies. In this case, transvaginal

ultrasound was the main investigation in the diagnosis of an ectopic pregnancy and subsequent management. Serial beta HCG was useful in guiding the follow-up of the patient's response to medical management with methotrexate and the eventual resolution of the cervical ectopic pregnancy [7].

Methotrexate, given intramuscularly in multiple doses and supplemented by leucovorin to counteract the toxic side effects of methotrexate, was a successful line of treatment as evidenced by the graph showing beta HCG levels going down after every treatment dose. The procedure of evacuation following the proper dilatation and inserting a Foley catheter to help in the arrest of bleeding by tamponade also helped in curative management [8].

The case underscores the fact that multidisciplinary management of cervical ectopic pregnancy is key since the teams of obstetricians, radiologists, and fertility specialists work hand in hand for optimum care and outcome for the patient. Treatment conservatively with methotrexate not only preserved the fertility of the patient but also avoided very invasive surgical interventions that in themselves convey higher risks of morbidity and potential fertility loss [9].

Combined with early diagnosis, meticulous monitoring, and an organized methotrexate regimen, cervical ectopic pregnancy can be successfully treated conservatively without losing fertility. This further adds to increasing evidence from this case where methotrexate was used in the treatment of ectopic pregnancy. It also emphasizes the importance of managing such conditions in due course of time for the protection of maternal health and fertility. In the face of ever-improving understandings and management strategies for this rare condition, such case reports offer invaluable insight and guidance to the clinician who is faced with a similar challenge [10].



Figure 1. USG 1

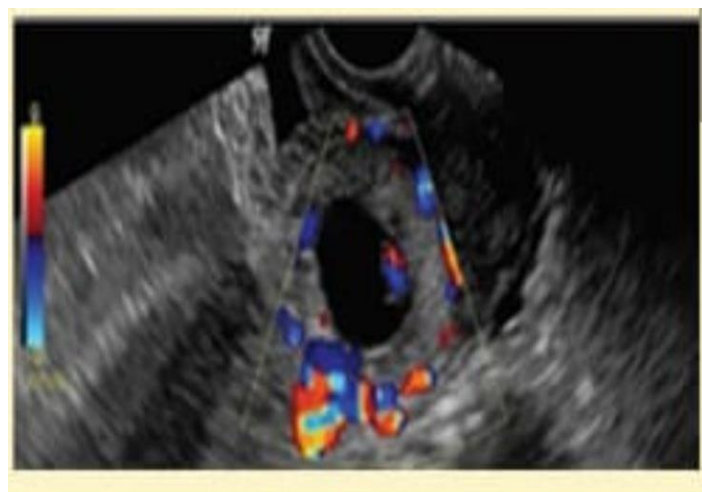


Figure 2. USG 2

Conflict of Interest

None.

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