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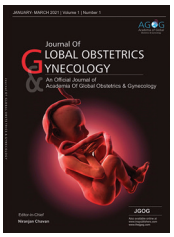
Case Report



Early Detection and Non-Surgical Management of Cervical Ectopic Pregnancy Following Embryo Transfer: A Case Report

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ABSTRACT

Aim: To highlight the importance of early diagnosis and individualized management strategies in cervical ectopic pregnancy (CP) to minimize morbidity and preserve fertility. **Background:** CP is an extremely rare form of ectopic gestation, accounting for <1% of all pregnancies. Risk factors include assisted reproductive techniques such as *in vitro* fertilization (IVF), previous uterine surgeries, and endometrial injury. Due to its rarity, CP presents diagnostic and therapeutic challenges, with high risks of hemorrhage and potential fertility loss if not managed timely. This case report discusses a successfully managed case of CP, emphasizing diagnostic accuracy, conservative treatment approaches, and fertility preservation. **Case Description:** A 43-year-old female, primigravida, following IVF conception, presented with painless vaginal bleeding at 6 weeks gestation. Transvaginal ultrasound (USG) and magnetic resonance imaging confirmed CP. The patient was managed conservatively with medical treatment and regular monitoring of beta-human chorionic gonadotropin levels, resulting in successful resolution without surgical intervention, preserving her reproductive potential. **Conclusion:** This case underscores the critical role of early diagnosis and tailored conservative management in CP. Awareness, prompt detection, and multidisciplinary approaches are vital to reducing morbidity, avoiding radical procedures, and safeguarding future fertility.

Key words: Beta-human chorionic gonadotropin monitoring, Cervical ectopic pregnancy, Conservative management, Early diagnosis, Fertility preservation, *In vitro* fertilization conception, Methotrexate

INTRODUCTION

Cervical ectopic pregnancy (CP) is a rare and potentially life-threatening form of ectopic gestation, accounting for <1% of all pregnancies and approximately 0.1% of all ectopic pregnancies.[1] It is characterized by the implantation of the gestational sac within the cervical canal, below the level of the internal OS. Early diagnosis is crucial, as delayed recognition can lead to significant morbidity due to the risk of massive hemorrhage and potential loss of fertility.

Advancements in transvaginal ultrasonography have significantly improved the early detection of cervical ectopic pregnancies. This, in turn, has facilitated the development of conservative treatment modalities aimed at minimizing morbidity and preserving future fertility. Despite these advancements, there is no universally accepted treatment protocol for CP, and management strategies often vary depending on the patient's clinical condition, gestational age, and desire for future fertility.[2]

Diagnostic criteria, such as Palman's criteria, aid in the accurate identification of CP. These include visualization of a gestational sac within the cervix, presence of cardiac activity below the level of the internal OS, absence of intrauterine pregnancy, hourglass-shaped uterus, absence of the sliding sign on transvaginal sonography, and a closed cervical internal OS.

In this report, we present a case of CP diagnosed in a primigravida conceived through *in vitro* fertilization (IVF), emphasizing the diagnostic approach, management, and challenges encountered in handling this rare clinical entity.

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CASE REPORT

A 43-year-old female, primigravida, married for 3 years, conceived through IVF (embryo transfer), presented to our emergency room with complaints of bleeding per vaginum since the previous morning. The bleeding was sudden in onset, with approximately

3–4 pads soaked per day and notably not associated with abdominal pain. She had initially sought care at a private maternity home, where she was administered intramuscular Aq Susten 100 mg, oral dydrogesterone tablets (4-4-4), and intravenous tranexamic acid every 8 h. She was subsequently referred to our center for further evaluation and management in view of USG findings suggestive of CP with subchorionic collection.

Her obstetric history revealed primary infertility for 2 years, for which she underwent three embryo transfers and two dilation and curettage (D&C) procedures approximately 6 months and 1.5 years prior. She also had a history of bilateral tubal blockage diagnosed through a diagnostic laparoscopy done 2 years back (records unavailable) and is a known hypertensive on tablet labetalol 100 mg twice daily for the past 2 years. Her menstrual cycles were regular (3–4 days/28–30 days/3–4 pads/day). Her last menstrual period was on November 26, 2023, and according to embryo transfer, her gestational age corresponded to 6.1 weeks, with an estimated due date of July 17, 2024.

On admission, her blood investigations revealed hemoglobin of 12.2 g/dL, TLC 8.1K/mm^3, platelet count 208K/mm^3, beta-human chorionic gonadotropin (hCG) 6661 mIU/mL, normal liver and renal function tests. A USG [Figure 1] showed a single live intrauterine gestational sac located in the lower uterine segment/cervix, consistent with a CP, along with the subchorionic collection.

Magnetic resonance imaging of the pelvis was performed, confirming a well-defined hyperintense structure with an eccentric heterogeneous area suggestive of a fetal pole (2.4 × 2.4 cm) limited within the cervix, along with a Nabothian cyst (1.5 × 0.7 cm) and a left ovarian cystic lesion (1.6 × 1.3 cm) showing T1 hyperintensity.

The patient was managed conservatively, and serial beta-hCG monitoring was done. Beta-hCG levels showed a declining trend: 1849 mIU/mL on day 4 and 581 mIU/mL on day 7. USG on day 7 revealed an ill-defined heterogeneously hypoechoic lesion (2.2 × 2.5 cm) with minimal fluid, suggestive of the clot, with no evidence of fetal pole or internal vascularity [Figure 2]. She was discharged with advice for weekly beta-hCG follow-up. On day 28, beta-hCG had declined to 2 mIU/mL, and follow-up USG showed further reduction in the size of the hypoechoic lesion to 0.9 × 1.4 cm, consistent with resolving clot.

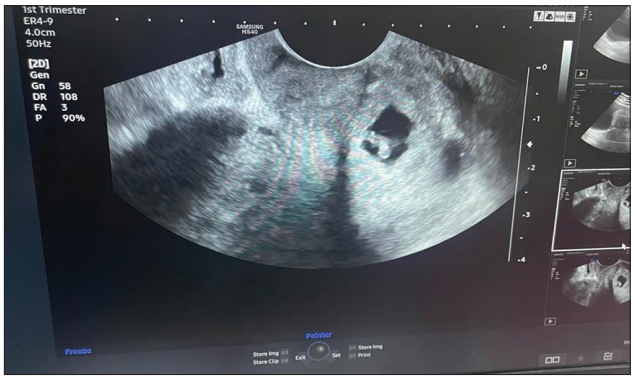

Figure 1: Transvaginal ultrasound shows cervical ectopic pregnancy with live gestational sac and subchorionic collection

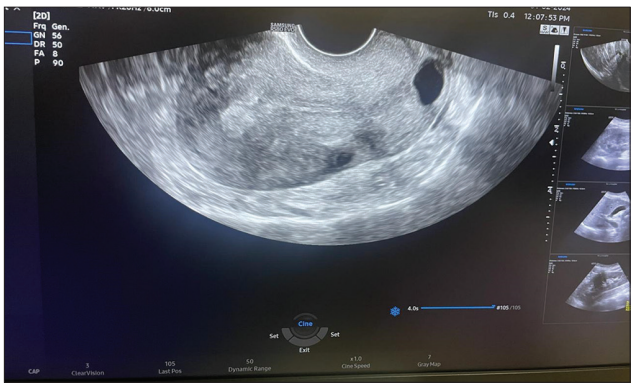

Figure 2: Ultrasound suggestive of no evidence of fetal pole or yolk sac

DISCUSSION

CP represents a rare but potentially life-threatening obstetric condition marked by the implantation of the gestational sac within the endocervical canal.[4] Its incidence, though historically low, appears to be rising, likely due to the increasing use of assisted reproductive technologies such as IVF, along with enhanced diagnostic capabilities offered by high-resolution transvaginal ultrasonography. Several risk factors have been associated with CP, including IVF conception, previous uterine surgeries (such as cesarean sections or dilatation and curettage), pelvic inflammatory disease, a history of multiple abortions, intrauterine device use, and structural anomalies of the uterus.

The rarity of CP poses significant challenges in establishing standardized management protocols. Unlike tubal ectopic pregnancies, where treatment guidelines are well-defined, CP management remains largely individualized, guided by case series, clinical experience, and patient-specific factors. Critical determinants influencing treatment choice include the patient's hemodynamic stability, gestational age, serum beta-hCG levels, the presence or absence of fetal cardiac activity, crown-rump length, and, importantly, the patient's desire to preserve fertility.

In hemodynamically stable patients, particularly in the first trimester and without severe bleeding, medical management is generally preferred. Methotrexate (MTX) remains the cornerstone of medical therapy, administered systemically through intramuscular injection either as a single-dose or multidose regimen[3,5] and may be complemented by local intra-amniotic administration for enhanced efficacy.[6] However, MTX therapy alone may be less effective in cases where beta-hCG levels exceed 10,000 mIU/mL, the crown-rump length exceeds 10 mm, or fetal cardiac activity is detected. In such cases, intra-amniotic injection of potassium chloride (KCl) for embryoid, in combination with MTX, has demonstrated improved outcomes.[7]

When medical management is unsuccessful or contraindicated, fertility-sparing surgical options such as cervical curettage,

aspiration, or hysteroscopic removal of trophoblastic tissue may be considered. However, the lack of robust, smooth muscle tissue in the cervix predisposes to substantial hemorrhage during surgical interventions, often necessitating emergent hysterectomy to control life-threatening bleeding. Therefore, adjunctive measures to minimize blood loss are critical. These may include cervical tamponade using a Foley balloon catheter, surgical ligation of uterine or internal iliac arteries, and uterine artery embolization.[9,10] The latter, in particular, has shown high efficacy with minimal complications, making it a valuable tool in the conservative management of CP.

Awareness and timely diagnosis of CP are essential to reduce morbidity and mortality. Early detection enables the adoption of conservative measures, preventing catastrophic hemorrhage and avoiding radical surgeries that could compromise future fertility.[8] The case presented underscores the importance of individualized, multidisciplinary management tailored to the clinical scenario, reinforcing the need for heightened vigilance in patients with known risk factors, particularly those undergoing assisted reproductive treatments.

CONCLUSION

CP, though rare, poses significant diagnostic and therapeutic challenges due to its potential for severe hemorrhage and impact on future fertility. Early and accurate diagnosis, facilitated by high-resolution transvaginal ultrasonography and adherence to established criteria such as Palman's criteria, are essential for successful management. Conservative medical approaches, particularly with MTX therapy, offer effective treatment in hemodynamically stable patients, especially when diagnosed early. In cases with high beta-hCG levels or fetal cardiac activity, combined medical and interventional strategies, including intra-amniotic potassium chloride and uterine artery embolization, may improve outcomes and prevent the need for radical surgery. This case highlights the importance of timely intervention, individualized treatment planning, and multidisciplinary care to ensure favorable maternal outcomes while preserving reproductive potential.

REFERENCES

1. Vora PH, Jassawalla MJ, Bhalerao S, Nadkarni T. Cervical ectopic pregnancy: A clinician's dilemma. J Obstet Gynaecol India 2016;66:617-9.
2. Singh S. Diagnosis and management of cervical ectopic pregnancy. J Hum Reprod Sci 2013;6:273-6.
3. Elmokadem AH, Abdel-Wahab RM, El-Zayadi AA, Elrakhawy MM. Uterine artery embolization and methotrexate infusion as sole management for caesarean scar and cervical ectopic pregnancies: A single-center experience and literature review. Can Assoc Radiol J 2019;70:307-16.
4. Dziedzic JM, Patel PV. Cervical ectopic pregnancy: A rare site of implantation. J Emerg Med 2019;56:e123-5.
5. Ozcivit IB, Cepni I, Hamzaoglu K, Erenel H, Madazlı R. Conservative management of 11 weeks old cervical ectopic pregnancy with transvaginal ultrasound-guided combined methotrexate injection: Case report and literature review. Int J Surg Case Rep 2020;67:215-8.
6. Yamaguchi M, Honda R, Erdenebaatar C, Monsur M, Honda T, Sakaguchi I, *et al.* Treatment of cervical pregnancy with ultrasound-guided local methotrexate injection. Ultrasound Obstet Gynecol 2017;50:781-7.
7. Bolaños-Bravo HH, Ricaurte-Fajardo A, Zarama-Márquez F, Ricaurte-Sossa A, Fajardo-Rivera R, Chicaiza-Maya R, *et al.* Conservative management in a patient with cervical ectopic pregnancy in Nariño, Colombia: Case report and review of the literature. Rev Colomb Obstet Ginecol 2019;70:277-92.
8. Diagnosis and management of ectopic pregnancy: Green-top guideline no. 21. BJOG 2016;123:e15-55.
9. Hu J, Tao X, Yin L, Shi Y. Successful conservative treatment of cervical pregnancy with uterine artery embolization followed by curettage: A report of 19 cases. BJOG 2016;123:97-102.
10. Ko HK, Shin JH, Ko GY, Gwon DI, Kim JH, Han K, *et al.* Efficacy of prophylactic uterine artery embolization before obstetrical procedures with high risk for massive bleeding. Korean J Radiol 2017;18:355-60.

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