

Spontaneous Heterotopic Pregnancy: From Management to Live Birth at the University Clinic of Gynecology and Obstetrics of the CNHU-HKM of Cotonou in 2025: A Case Report

Tchimon Yea Setchegnon Vodouhe^{1,2*}, Mathieu Ogoudjobi^{2,3}, Ingrid Olowo^{2,3}, Barnard Acakpo¹, Arnette Fiogbe^{2,3}, Christiane Tshabu Aguemon^{1,2}, Angeline Tonato Bagnan^{1,4}, Justin Lewis Denakpo^{1,2}

¹University Clinic of Gynecology and Obstetrics, Hubert Koutoukou Maga National University Hospital Center (CNHU-HKM), Cotonou, Benin

²Faculty of Health Sciences, University of Abomey-Calavi, Cotonou, Benin

³Oueme Departmental University Hospital Center, Porto-Novo, Benin

⁴University Hospital Center of Mother and Child Lagoon (CHU-MEL), Cotonou, Benin

Email: *tchimonvod@yahoo.com

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Abstract

Heterotopic pregnancy is defined as the simultaneous presence of an intrauterine pregnancy and an extrauterine pregnancy, regardless of their location. It is a rare form of dizygotic twin pregnancy, and its spontaneous occurrence is exceptional. This potentially serious condition can compromise both maternal outcomes and the prognosis of the intrauterine pregnancy. We report a case of heterotopic pregnancy managed in 2025 at the University Clinic of Gynecology and Obstetrics, Hubert Koutoukou Maga National University Hospital Center (CNHU-HKM) in Cotonou. The patient presented with pelvic pain persisting for 48 hours. Pelvic ultrasound suggested a heterotopic pregnancy, with a viable intrauterine gestation and a non-viable left tubal extrauterine pregnancy. The diagnosis was confirmed intraoperatively during laparoscopy, and a left salpingectomy was performed. Postoperative recovery was uneventful. The intrauterine pregnancy progressed favorably to term, resulting in a vaginal delivery of a healthy neonate with satisfactory neonatal adaptation. This case highlights the importance of systematic adnexal assessment during first-trimester ultrasound, even in the presence of a confirmed intrauterine pregnancy, to avoid missing an associated extrauterine gestation.

Keywords

Heterotopic Pregnancy, Intrauterine Pregnancy, Extrauterine Pregnancy, Laparoscopy, Cotonou

1. Introduction

Heterotopic pregnancy (HP) is defined as the simultaneous coexistence of an intrauterine pregnancy and an ectopic pregnancy, most often tubal. It is a rare but potentially serious condition due to the risk of tubal rupture and hemorrhage, which can compromise the mother's prognosis [1] [2]. Historically exceptional in spontaneous conceptions, with an estimated incidence of approximately 1 in 30,000 pregnancies, the frequency of HP has increased with the growing use of assisted reproductive technologies (ART) [3].

Diagnosis remains a significant clinical challenge, as the presence of a viable intrauterine pregnancy can be falsely reassuring and delay the identification of the associated ectopic pregnancy. Clinical manifestations are often nonspecific, dominated by pelvic pain and vaginal bleeding, or even absent in some cases [4]. Endovaginal ultrasound is the key examination for diagnosis, allowing simultaneous identification of both gestational sites. Early management is essential to prevent maternal complications while preserving the intrauterine pregnancy when possible. We report a case of spontaneous heterotopic pregnancy diagnosed early and treated by laparoscopy at the University Clinic of Gynecology and Obstetrics (UCGO) of the Hubert Koutoukou Maga National University Hospital Center (CNHU-HKM) in Cotonou in 2025, with a favorable outcome for the intrauterine pregnancy to term.

2. Observation

A 32-year-old woman, residing in Porto-Novo, was referred to the UCGO on August 15, 2025, from the Clinic located in the commune of Abomey-Calavi, for the management of a heterotopic pregnancy of 8 weeks of amenorrhea + 6 days (WA + 6 d), combining an evolving intrauterine pregnancy and a stopped left tubal ectopic pregnancy.

The onset dated back to 48 hours prior to admission, marked by the development of persistent pelvic pain that prompted a consultation at the referring clinic. The clinical examination and pelvic ultrasound performed had led to the diagnosis of heterotopic pregnancy, combining an ongoing intrauterine pregnancy of 8 weeks + 6 days and a left ectopic pregnancy that stopped at the same stage, leading to her transfer to the UCGO for specialized care. Her medical, surgical, gynecological, and obstetric history was without particularity. The patient was gravidity 3, parity 1, with a history of spontaneous miscarriage and a live child. At admission, the clinical examination revealed a good general condition, with moderately colored palpebral conjunctivae, normal vital parameters, a soft abdomen with lo-

calized tenderness on palpation of the left iliac fossa, without guarding or contraction, traces of blood of intrauterine origin on speculum, and on vaginal examination, combined with abdominal palpation a slightly enlarged uterus, the left vaginal dead end filled and tender.

The emergency pelvic ultrasound revealed an ongoing intrauterine pregnancy with an embryo of crown-rump length of 23.66 mm, corresponding to 8 weeks + 6 days, with positive cardiac activity, a left adnexal gestational sac containing an embryo of crown-rump length corresponding to 8 weeks + 5 days, without cardiac activity, and minimal fluid effusion in the vaginal dead end of Douglas.

The diagnosis of heterotopic pregnancy, combining an ongoing intrauterine pregnancy and a stopped, unruptured left tubal ectopic pregnancy, was established. Following a preoperative assessment and pre-anesthetic evaluation, she underwent a laparoscopy. During the procedure, a left ampullary ectopic pregnancy associated with a small amount of hemoperitoneum was noted; a retrograde left total salpingectomy, peritoneal lavage, and aspiration were performed. The immediate postoperative period was marked by a threatened miscarriage, which was successfully treated with progesterone. She was discharged on the 7th postoperative day. Antenatal monitoring of the intrauterine pregnancy was carried out in the department at a rate of one consultation per month in the absence of pathology. In the third trimester, she developed a urinary tract infection with *Escherichia coli*, sensitive to amoxicillin-clavulanic acid, which was successfully treated. The patient gave birth vaginally to a male newborn, who cried immediately, with an Apgar score of 9/10/10. The postpartum period was uneventful (**Figure 1**, **Figure 2**).

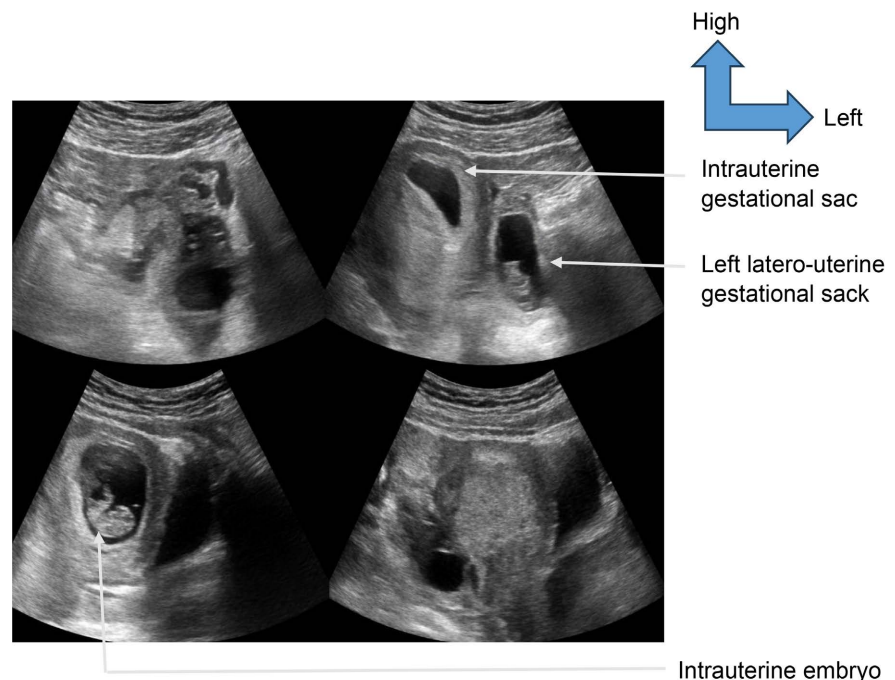


Figure 1. Ultrasound images of intrauterine and ectopic gestational sacs.

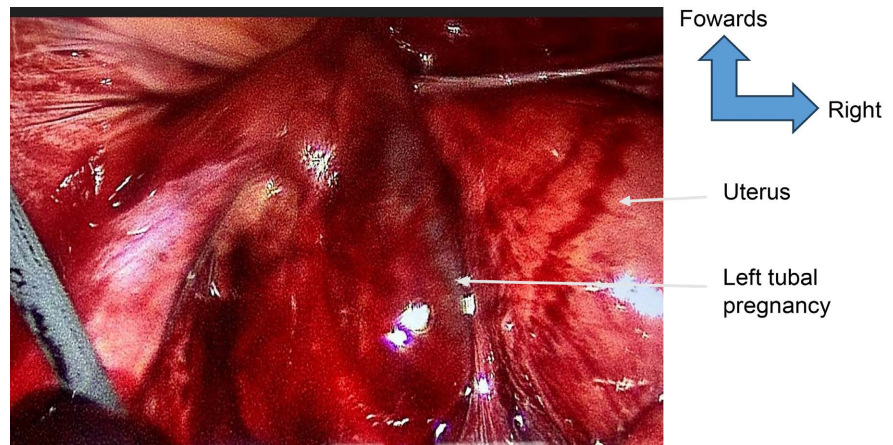


Figure 2. Laparoscopic view of the left tubal ectopic pregnancy.

3. Discussion

Heterotopic pregnancy is a rare but increasing condition, mainly due to the development of assisted reproductive technologies. However, cases occurring in spontaneous conception, like the one we present, remain exceptional and are often diagnosed late in the absence of identified risk factors [3]. In the general unassisted population, the incidence is extremely low, estimated at approximately 1 case per 30,000 spontaneous pregnancies. This incidence increases significantly in cases of medically assisted reproduction, reaching up to 1 per 1,000 pregnancies in some series [3]. Studies report a risk distribution based on maternal age, obstetric history, and exposure to reproductive technologies. However, spontaneous heterotopic pregnancies occur even in the absence of classic risk factors. In our clinical case, the patient was 32 years old, a common age for spontaneous GH reported in the literature [3] [5]. The majority of heterotopic pregnancies (HPGs) described in the literature are associated with risk factors similar to those of ectopic pregnancies, as these factors promote the extrauterine implantation of embryos [5]. One of the main recognized factors is assisted reproductive technology (ART), particularly ovulation induction, artificial insemination, and in vitro fertilization (IVF). The simultaneous implantation of two embryos, one intrauterine and one extrauterine, is facilitated by reproductive manipulations and the increased number of available eggs. ART can induce a heterotopic pregnancy through utero-tubal transfer, with the simultaneous implantation of an intrauterine embryo and a tubal embryo [3].

A history of pelvic infections, particularly *Chlamydia trachomatis*, salpingitis, tubal adhesions, tubal anatomical abnormalities, or a history of ectopic pregnancy and pelvic or tubal surgery can also alter tubal anatomy and motility, predisposing to ectopic implantation associated with an intrauterine pregnancy. These factors, which increase the likelihood of abnormal tubal transport and extrauterine implantation, were not found in our patient [5] [6]. The diagnosis of GH is particularly complex. Indeed, the detection of an intrauterine pregnancy does not rule out an associated ectopic pregnancy, which can lead to diagnostic delays [7]-[10].

Clinically, symptoms are inconsistent and nonspecific. In some series, up to a third of patients may be asymptomatic, while others present with pelvic pain, vaginal bleeding, as observed in our patient's case, or signs of hemorrhagic complications [4] [10] [11]. Endovaginal ultrasound is the gold standard examination. It allows for early detection in a significant proportion of cases, particularly when a systematic examination of the adnexa is performed in the first trimester [1] [12]. In our case, the diagnosis was made early, before tubal rupture, which allowed for optimal management. Laparoscopy or laparotomy confirms the diagnosis [5] [6]. The diagnosis was confirmed by laparoscopy in our case. Rarely, spontaneous evolution can lead to a full-term intrauterine pregnancy associated with an incipient ectopic pregnancy discovered during a cesarean section, the confirmation of which requires histopathological examination [13]. The management of GH aims at a dual objective: treating the ectopic pregnancy and preserving the intrauterine pregnancy [5]. Several therapeutic options exist: expectant management, medical treatment, or surgical intervention. Expectant management is associated with a high risk of adverse outcomes [14]. Surgery, particularly laparoscopy, is currently the standard treatment, especially in cases of tubal ectopic pregnancy. It allows for the removal of the ectopic pregnancy with minimal impact on the intrauterine pregnancy [15]. It is currently considered the technique of choice when intervention is necessary. This approach is associated with lower postoperative morbidity, rapid recovery, and reduced pain compared to laparotomy [16]. In our case, performing a laparoscopic salpingectomy resulted in a favorable outcome without major complications, confirming the efficacy and safety of this approach. In the case we report, the postoperative course was free of hemorrhagic, infectious, and thromboembolic complications, which is consistent with data from the literature [17]. However, she experienced a threatened miscarriage, followed by an *Escherichia coli* urinary tract infection leading to a threatened preterm delivery at 32 weeks of gestation. Several studies in the literature have reported threatened or spontaneous abortion, threatened preterm delivery, preterm delivery, and intercurrent urinary or genital infections [4]. The presence of intrauterine embryonic cardiac activity at the time of diagnosis is a major favorable prognostic factor [1]. Live birth rates after GH treatment can reach over 80% in some research, highlighting the importance of appropriate management [4]. In our case, the outcome was favorable, with a vaginal delivery at 38 weeks of gestation of a healthy male newborn.

4. Conclusion

Heterotopic pregnancy is a rare but potentially serious diagnostic emergency, the incidence of which is increasing. Its diagnosis remains difficult due to the coexistence of an often reassuring intrauterine pregnancy. In a patient without risk factors, a transvaginal ultrasound combined with clinical data was key to early diagnosis. Surgical management, particularly laparoscopy, allowed for the effective treatment of the ectopic pregnancy while preserving the intrauterine pregnancy.

This case illustrates that early diagnosis and appropriate management lead to a good maternal and fetal prognosis.

Consent

The patient consented to the publication of this case, with anonymity preserved.

Author Contributions

All authors had participated in the conception, production, writing, and editing of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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