

Vaginal birth after laparoscopic management of heterotopic pregnancy at the Douala general hospital, Cameroon: A case report

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ABSTRACT

Heterotopic pregnancy is the simultaneous presence of an intrauterine and ectopic pregnancy. The prevalence of the condition is unknown in Cameroon. We report a case of heterotopic pregnancy managed by laparoscopy. MS a 33-year-old G2P0010 woman was admitted to our department because of 7 2/7 weeks' amenorrhea, mild vaginal bleeding, and severe lower abdominal pain. She has a 6 years' history of secondary infertility, one induced abortion, and chlamydia infection treated with doxycycline. Furthermore, she has a history of left laparoscopic salpingotomy for tubo-ovarian abscess. She became pregnant after receiving clomiphene citrate and timed intercourse. Her beta hCG assay was 97000 mIU/mL and transvaginal sonography confirmed ruptured heterotopic pregnancy. She underwent laparoscopic left salpingectomy and the intrauterine pregnancy evolved normally and she gave birth to a healthy female that weighed 3050 g at 38 5/7 weeks gestation. The diagnosis of heterotopic pregnancy needs a high index of suspicion. Laparoscopic treatment of heterotopic pregnancy needs to become widespread in Cameroon.

Key words: Heterotopic pregnancy; laparoscopic salpingectomy; transvaginal sonography; vaginal birth.

COH: Controlled ovarian hyperstimulation; DGH: Douala General Hospital; hCG: Human chorionic gonadotropin; IVF: In-vitro fertilization; MRI: Magnetic resonance imaging; SET: Single embryo transfer; TVS: Transvaginal sonography

Introduction

Heterotopic pregnancy is the simultaneous occurrence of both an intrauterine and ectopic pregnancy. This incidence was formerly thought to increase with assisted reproductive technology (ART) but with the advent of single-embryo transfer (SET) in recent times, there has been a decrease in the ectopic or heterotopic pregnancy rates.^[1] Laparoscopic management of heterotopic pregnancies is a well-practiced treatment modality in high-income countries^[2-5] but few centers practice laparoscopy in Cameroon.^[6,7]

We report the case of ruptured heterotopic pregnancy after ovulation induction and timed intercourse.

Case Report

MS, a 33-year-old, G2P0010 woman came to the emergency department of the Douala General Hospital (DGH) with severe abdominal pain of 6 hours' duration and mild vaginal

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bleeding at 7 2/7 weeks amenorrhea. Her medical record is consistent with one spontaneous abortion; chlamydia infection treated with doxycycline (200 mg/day for 21 days) and left salpingotomy by laparoscopy for a tubo-ovarian abscess with good tubal score and pelvic adhesiolysis at the DGH in the year 2012. She underwent ovulation induction with clomiphene citrate 100 mg/day from the 8/03/2016 to 12/03/2016 (3rd to 7th day of the cycle and timed intercourse from the 12th day of the cycle (17/03/2016). On admission, she was mildly pale, with a blood pressure of 100/60 mmHg and a pulse rate of 100 beats per minute.

There was diffuse abdominal tenderness and rigidity on palpation. There were mild vaginal bleeding, cervical motion tenderness, and marked abdominal rigidity impeding the ascertainment of the uterine size. The full blood count showed a hemoglobin level of 10.5 g/dL, serum β -hCG level of 97,000 mIU/mL and transvaginal sonography (TVS) showed a singleton intrauterine gestational sac and an abnormal echogenic complex mass at the left adnexa. There was free fluid in the pouch of Douglas [Figure 1].

An emergency laparoscopy confirmed ruptured left ampulla pregnancy with about 500 mL of hemoperitoneum and left total salpingectomy was effected after suctioning blood in the peritoneal cavity [Figure 2]. The histopathologic results confirmed the diagnosis of a left tubal pregnancy. The patient received progesterone injectable for 48 h after surgery and was discharged from the hospital on the 4th postoperative day. A subsequent ultrasound scan confirmed a viable singleton intrauterine pregnancy at 10 weeks' gestational age, and she gave birth to a healthy female that weighed 3050 g. at 38 5/7 weeks' gestation.

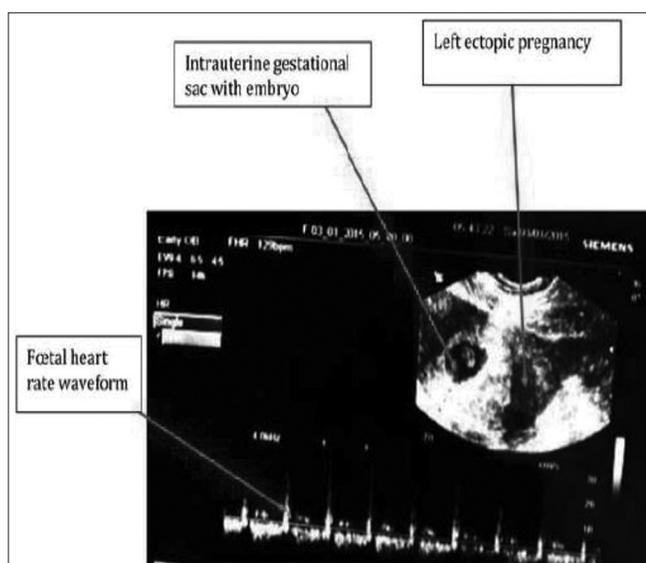


Figure 1: Ultrasonography image of the left heterotopic pregnancy with Doppler waveform of the intrauterine pregnancy

Discussion

Heterotopic pregnancy is a rare clinical condition after spontaneous pregnancy cycles. However, the incidence was thought to be increasing with the advent of ART but this was associated with multiple embryo transfer. In recent times, it has been shown that SET in two different months has similar results with two embryos transferred at the same time. Therefore, current practice worldwide is a single embryo transfer that has accounted for a reduction in the heterotopic pregnancy rates.^[1] Risk factors of heterotopic pregnancy in the index case include secondary infertility, previous induced abortion, Chlamydia trachomatis infection, and left tubo-ovarian abscess treated by laparoscopic salpingotomy. It has been reported that tubal inflammation (hydrosalpinx) and mechanical injury are risk factors associated with heterotopic pregnancy after *in-vitro* fertilization.^[8] Other risk factors are the use of assisted hatching, intracytoplasmic sperm injection, fresh compared with frozen embryo transfer, day of embryo transfer, and the hormonal milieu specific to ovarian stimulation.^[1]

Early diagnosis of heterotopic pregnancy is difficult because of the absence of specific symptoms. Previous studies considered abdominal pain, adnexal mass, peritoneal irritation, and an enlarged uterus to be signs and symptoms of a suspected heterotopic pregnancy. The location of the ectopic pregnancy can be ovarian, tubal, cornual, cervical, or abdominal. This compounds the difficulty in clinical diagnosis, especially where the clinical presentations also differ. Serial serum β -hCG may be helpful in the diagnosis of ectopic pregnancy. However, it cannot help in the case of heterotopic pregnancy because the low hormone production from ectopic gestation may be masked by the higher production from intrauterine pregnancy. The diagnostic accuracy of 3D transvaginal ultrasound by reading office data sets for predicting ectopic pregnancy has been reported to be dependent on the experience of the sonographer. Reading only static 3D data sets without clinical information does not match the diagnostic performance of real-time 2D TVS combined with clinical information obtained during the scan.^[9] During an



Figure 2: Laparoscopic image of left ectopic pregnancy on a tortuous fallopian tube completely adherent to the uterus

ultrasound examination, heterotopic pregnancy could be mistaken for a corpus luteum cyst rather than an ectopic pregnancy, especially if there is a concomitant intra-uterine pregnancy that is evolving normally. Other conditions, like bicornuate uterus with pregnancy in both cornua, could mimic a heterotopic pregnancy at sonography. Finally, there are three ultrasonographic criteria for the diagnosis of ectopic pregnancy. The first is the “blob” sign, which is a heterogeneous mass adjacent to the ovary but that moves separately. The second is the “bagel” sign, which is a mass with a hyperechoic ring around it. The third is the appearance of something that looks like a gestational sac, with a fetal pole. However, magnetic resonance imaging (MRI) has been reported to be superior in the diagnosis of heterotopic pregnancy with the added advantage of sparing the intrauterine pregnancy from ionizing radiation.^[10] However, in Cameroon, the availability of MRI investigation is not accessible to patients due to cost.

The standard treatment for ectopic pregnancy is surgical intervention, usually by laparoscopy in high-income countries; sometimes, laparotomy may be needed. However, in Cameroon and most low-income countries, laparotomy is the standard treatment. Nonetheless, in the index case, laparoscopic total salpingectomy was easily done after suction of blood from the peritoneal cavity. Other authors have reported that operative laparoscopy is safe and sustainable in the treatment of ectopic pregnancies even with hemodynamic instability, but the procedure requires substantial laparoscopic skills. Besides, many more practitioners in Cameroon are gaining skills in laparoscopic surgery. Furthermore, favorable outcomes of intrauterine pregnancy have been reported in the literature after the surgical treatment of heterotopic pregnancy.^[11]

Conclusion

Heterotopic pregnancy is a rare condition with a difficult ultrasonographic diagnosis that needs a high index of suspicion. Laparoscopic treatment of heterotopic pregnancies should be made more accessible to hospitals in Cameroon because most hospitals treat the condition by laparotomy.

Ethics approval

Our institution does not require ethical approval for reporting individual cases or case series.

Authors' contributions

TOE, TNN, HE and GEOE conceptualized and drafted the manuscript and approved the final version of the manuscript. TOE, TNN and HE were in the surgical team. The manuscript has been read and approved by all the authors, and the requirements for authorship as stated earlier in this document

have been met. Each author believes that the manuscript represents honest work if that information is not provided in another form.

Declaration of patient consent

Verbal informed consent was obtained from the patient for her anonymized information to be published in this article.

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Conflicts of interest

There are no conflicts of interest.

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