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Case Report of a Spontaneous Heterotopic Pregnancy with Successful Intrauterine Gestation

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Abstract

Background: Heterotopic pregnancy is a potentially life threatening condition, that occurs when both intrauterine and extra-uterine gestation co-exist. It is rare following spontaneous pregnancy, and the management may be challenging; late diagnosis may lead to maternal and fetal mortality.
Objective: We present a case of a 27-year-old $G4P_0^{+3}$ woman with heterotopic gestation.
Case Report: She conceived spontaneously, initially presented at tenth week of gestation, defaulted during expectant management, and later had right salpingo-oophorectomy at thirteenth week of gestation. Her presenting complaints were five-week history of both abdominal pain and recurrent vaginal bleeding. Her intrauterine pregnancy was successfully carried to term, when she had an elective caesarean section with good feto-maternal outcome.
Conclusion: All efforts must be made to conserve the intrauterine pregnancy, after the complete removal of the ectopic gestation; subsequent follow-up is essential for optimum care.

Keywords: Heterotopic pregnancy, Ectopic, Case Report, Spontaneous conception, Intrauterine pregnancy

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Introduction

Heterotopic pregnancy (HP), the co-existence of intrauterine and extra-uterine gestation, is a life threatening condition; prompt intervention is necessary to prevent maternal mortality[1]. It is a rare condition, with an incidence of 1 in 30,000 pregnancies following natural conception[2]. However, following assisted reproductive conception the incidence may be as high as 1 in 100[3]. It commonly results from excessive ovulation, with at least unilateral altered tubal motility[4].

Risk factors include assisted reproductive techniques, use of ovulation induction agents, pelvic inflammatory disease, increase maternal age, previous history of ectopic gestation, history of infertility, endometriosis, previous history of multiple gestation, and previous pelvic surgery[5,6]. Presenting symptoms include abdominal pain, vaginal bleeding, dizziness, and collapse; a high index of suspicion is needed for early diagnosis[7]. Most cases are usually diagnosed just before the eighth week of gestation, though it might occur a few weeks later[8,9].

Management of HP starts from a good history taking, proper investigation, arriving at the diagnosis, and offering a proper treatment. Usually, the aim of management includes conserving the intrauterine pregnancy, while removing the extra-uterine pregnancy[10]. The location of the ectopic pregnancy determines the type of surgical approach employed; other factors that affect the nature of surgery include the gestational age, and haemodynamic instability[10]. Also, the availability of recent technology, like laparoscopy, determines the surgical route.

Conservative options have been employed in the management of HP; these include expectant and medical treatment options[11]. In cases where HP was diagnosed accidentally during early ultrasonography, and the patient declines medical or surgical intervention, expectant option may be administered; and close surveillance is mandatory to detect any sign of tubal rupture[9]. Occasionally, there might be a spontaneous resolution of the ectopic gestation or an abortion; but the challenge with expectant option is tubal rupture and its sequelae[9].

We present a patient whose heterotopic pregnancy was conceived spontaneously, initially defaulted, later presented and had laparotomy and salpingectomy. She had her intrauterine pregnancy conserved, and also had elective caesarean section at term to a healthy neonate.

Case Report

She was an unbooked 27 year old $G_4P_0^{+3}$ hairstylist who was not sure of her last menstrual period; ultrasound scan done at 10 weeks gestation put her gestational age at 10 weeks and 6 days at initial presentation. She initially presented on

31/05/2024 with 5-week history of lower abdominal pain and bleeding from her vagina. However, she was discharged on request after she was admitted, and presented two weeks later with similar complaints.

Lower abdominal pain was described as sudden in onset, of moderate severity, located at the right iliac fossa, progressively worsened and radiated to her supra-pubic area, aggravated on movement, and relieved slightly on staying still. Bleeding from her vagina started about same time, and was described as spotting, bright red blood, and was recurrent. There was associated vomiting; however, no fainting spells, trauma, abnormal vaginal discharge, fever, or familial bleeding disorders. She was managed conservatively for secondary infertility following three spontaneous terminations of pregnancy. She had no previous surgery and she was not a smoker, though drank alcohol occasionally.

On examination (at the initial presentation) she was afebrile, anicteric, not pale, not dehydrated. Her pulse rate was 80beats/min, blood pressure (BP) was 120/80mmHg, respiratory rate was 20cycles/min. Her abdomen was full moved with respiration, uterus was not palpable, and liver/spleen/kidneys were not enlarged. Tenderness was noted over her right iliac fossa and supra-pubic region. On speculum (vaginal) examination there was no active bleeding and her cervical os was closed. With the help of a trans-vaginal ultrasound scan, the diagnosis of heterotopic pregnancy was made, she declined surgery and was advised to see us in clinic in two days but defaulted.

She re-presented on 18/06/2024 (gestational age of 13 weeks & 3days) with complaints of persistent severe right sided abdominal pain and was re-admitted. There was no history of fainting spells. Her pulse rate was 114beats/min, BP was 116/60mmHg; severe tenderness was noted over her right iliac fossa. Her packed cell volume was 31%, blood group was O Rhesus D positive, HIV (Human immunodeficiency virus) and Hepatitis tests were negative. Blood was appropriately grouped and cross-matched. Resuscitative measures were instituted.

She subsequently consented for surgery, and had an emergency laparotomy and salpingectomy plus oophorectomy done. Surgical findings included 150ml of haemoperitoneum, grossly normal left adnexae, 12-week size uterus; there was a right adnexa mass about 20cm by 6cm, involved the fimbrial end and lateral half of the right fallopian tube, and was mildly ruptured. The right ovary was not visualized, and it appeared to have been covered by the ectopic mass. Thus, the surgery was, ultimately, right salpingo-oophorectomy; total blood loss was about 300mls.

Post-operative period was satisfactory, and ultrasound scan was done eight days post-surgery which confirmed a viable intrauterine fetus with an estimated gestational age (GA) of 13 weeks and 4 days, and the expected date of delivery was 29th December 2024. Her internal-os was closed, and the cervical length was 2.6cm. She had routine follow-up scans & was compliant with antenatal care visits. She had an elective caesarean section (C/S) on 18th December 2024 (GA of 38weeks & 3days), outcome was a live male neonate with a birth-weight of 3.6kg; she was discharged three days post C/S.

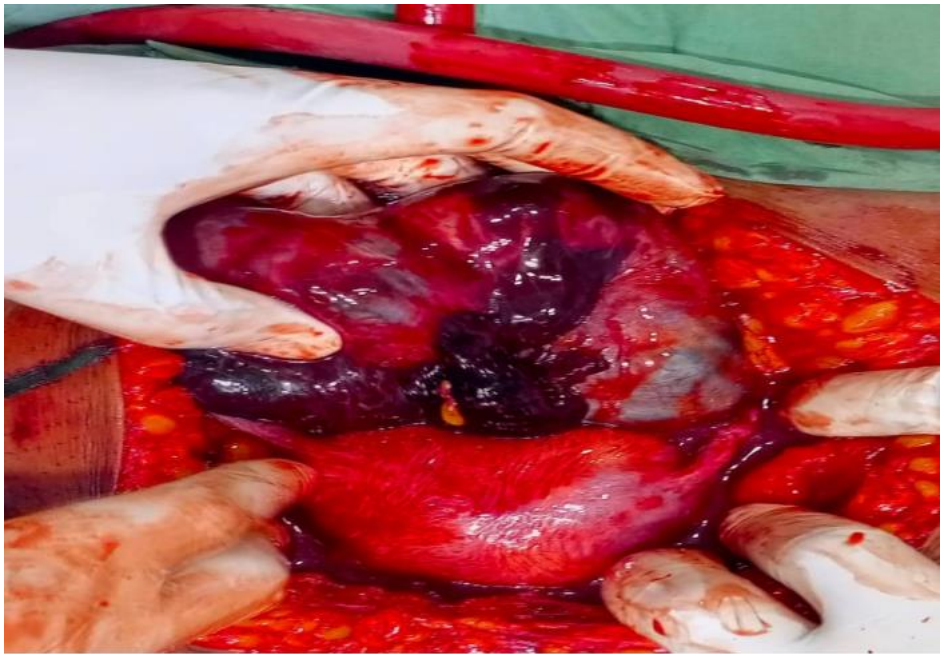

Figure 1: The normal pregnant uterus and the mildly ruptured right ectopic mass.

Figure 2: Right ectopic mass in situ that involved the lateral half of the tube and ovary

Discussion

Heterotopic pregnancy (HP) is rare following spontaneously gestation, this case is one of such rarity. The incidence has been quoted to be 1 in 30,000 pregnancies, values as high as 1 in 3900, and even 1 in 100, have been reported following assisted reproduction[3,7,12]. Early diagnosis and treatment helps to prevent maternal mortality; common symptoms include abdominal pain, amenorrhea, vaginal bleeding[11]. This case had abdominal pain and vaginal bleeding & the risk factor was a history of infertility; there were no previous pelvic infections or surgery.

A case report in South Florida, United States of America (USA), revealed that the patient had a family history of multiple gestation in her grandmother, mother and sister; and a diagnosis of HP was made following serum human chorionic gonadotropin (β-hCG) and Transvaginal ultrasound (TVS)[5]. A case series of HP conducted in Ireland revealed that women above 35 years were at risk of having HP[13]. Assisted reproduction was a risk factor in a study in Poland, though, occasionally, risk factors may not be present[7]. Studies on HP are limited as most are case reports and case series.

A case report in Abakaliki, Nigeria, identified pelvic inflammatory disease (PID) as a major risk factor for HP[6]. Another study in Ibadan, Nigeria, noted that previous ectopic pregnancy, previous pelvic surgery, and PID were risk factors for HP[2]. A case report in Benin, Nigeria, did not identify any risk factor[1]. Pelvic surgeries, previous twin gestation were the risk factors identified in a similar study conducted in Lagos, Nigeria[4]. Previous pelvic surgeries, PID, previous ectopic gestation, and assisted reproduction were the common risk factors.

Medical management employed include the use of hyperosmolar glucose, potassium chloride, and methotrexate; however, many authors have discouraged the use of methotrexate for HP due to its teratogenicity[9,13]. Contra-indication to the use of medical options includes signs of uterine rupture, shock, and poorly visualized ectopic gestational sac[13]. Patients must always be counseled that surgical option will be resorted to if medical options fails.

Surgery is the commonest mode of treatment of HP, and can be done via laparotomy or laparoscopy[9]. The location of the ectopic pregnancy determines the type of surgery done; common options include salpingectomy, salpingostomy, cornual resection, and, occasionally, oophorectomy[9,12]. The risk of persistent trophoblastic tissue is higher with salpingostomy (9.8%) than salpingectomy (1.8%), hence the latter, which our patient had, is preferred[13].

Tubal rupture, haemorrhage, haemoperitoneum, shock, maternal collapse, and death may occur if HP is not diagnosed early[8]. Following surgical removal of the ectopic gestation, there is an increased risk of miscarriage, infection, and adhesions; these risks might be more with laparotomy, hence the preference for laparoscopic route[2]. This case had no obvious complication.

Following a successful management of HP, the viable intrauterine pregnancy must be closely monitored. Follow-up include appropriate antenatal drugs, antibiotics and analgesics for the post-operative care, routine antenatal care visits, and appropriate ultrasonography[6]. Some authors offer luteal phase support using synthetic progesterone agents until about 13 weeks[2,6]. Others have used both progesterone and uterine relaxants like salbutamol or magnesium sulphate; no substantial evidence to guide their use[4].

Conclusion

An early HP diagnosis can be challenging; thus, a high index of suspicion must be maintained, particularly in patients with the greatest risk factors such as assisted reproduction, history of multiple gestation, previous ectopic gestation and pelvic inflammatory disease. All efforts at management must ensure the survival of the intrauterine pregnancy.

Ethical Approval and Informed Consent

Informed consent was obtained from the patient for publication of this case report and any accompanying images. Ethical approval was not required for this single case report in accordance with institutional and/or national guidelines. Patient confidentiality was strictly maintained throughout.

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