Case Report

Spontaneous Heterotopic Pregnancy: A Case Report and Review of Diagnostic Dilemma and Challenges of Surgical Management in a Resource-Limited Environment

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Article History

Submitted: 17/07/2023; Accepted: 31/07/2023: Published: 13/09/2023

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ABSTRACT

Heterotopic pregnancy is the simultaneous occurrence of normal intrauterine and extrauterine gestations. It is a very uncommon complication of gestation and more common in artificial conceptions like assisted reproduction techniques than in natural conceptions. On the whole, it is a life-threatening pathology. The diagnosis is often missed during radiological investigations due to its rarity. A painstaking sonographic evaluation is needed to rule out the presence of heterotopic gestation and thus help in prompt diagnosis and appropriate management. Early diagnosis of this pathology decreases the likelihood of complications. We hereby report a case of heterotopic pregnancy presenting with amenorrhea of seven and half weeks and acute excruciating lower abdominal pain with associated episodes of spotting of bright red blood per vagina of four days duration. The diagnosis of a normal pregnancy co-existing with a ruptured extrauterine gestation was made on a thorough ultrasound examination. The patient was managed with exploratory laparotomy and left salpingectomy. The intrauterine pregnancy course was uneventful with a delivery of a live baby at term. This case report emphasizes the need to carefully examine the adnexa even with the visualization of normal pregnancy on ultrasound interrogation to rule out heterotopic pregnancy.

Keywords: Heterotopic pregnancy, Extrauterine pregnancy, Amenorrhoea, Exploratory laparotomy.

INTRODUCTION

Heterotopic pregnancy is the coexistence of intrauterine and extrauterine gestations.[1,2] It is a rare and life-threatening situation that is difficult to diagnose and easily missed.[3]The estimated incidence of heterotopic pregnancy was 1 in 30,000 in natural conceptions.[4] However, in recent years due to the increasing incidence of pelvic inflammatory diseases and rising use of intrauterine contraceptive devices, the incidence of heterotopic has markedly increased to around 1:7,000 in the general population. [2,4] The incidence of heterotopic pregnancy is even higher with assisted conceptions.[4,5]

The most frequent ectopic site is the fallopian tube in both natural and assisted conceptions while the cornua is the second most common location. The other less common sites of ectopic gestations are the ovary, the cervix, and the abdomen.[4,5] More than half of the intrauterine gestations in heterotopic gestations result in live deliveries if detected early and managed appropriately.[2,4] A delay or missed diagnosis can lead to a rise in morbidity and mortality both for the mother and the intrauterine

Article Access

***Website**: www.wjmbs.org.ng*

10.5281/zenodo.15448820

How to cite this article

*Erohubie OA, *Ogbetere FE. Spontaneous Heterotopic Pregnancy: A Case Report and Review of Diagnostic Dilemma and Challenges of Surgical Management in a Resource-Limited Environment. West J Med & Biomed Sci. 2023;4(3-4):65-68. DOI:10.5281/zenodo.15448820*

gestation.

Herein, we report a case of ruptured heterotopic pregnancy presenting at seven and half weeks of gestation with lower abdominal pain and bleeding per vagina which was managed with immediate exploratory laparotomy and left salpingectomy. The intrauterine pregnancy course was uneventful with spontaneous vaginal delivery of a healthy baby at term.

CASE REPORT

She was a 39-year-old multigravida ($G_4P_2^{+1}$, 2 alive), who presented to Edo Specialist Hospital, Benin City, Nigeria with a history of cessation of menses for seven and half weeks, progressively worsening lower abdominal pain, and bleeding per vagina of four days duration. There was no preceding history of pelvic inflammatory disease or fertility treatment. Her blood pressure on admission was 90/55mmHg, her pulse rate was 105/minute, and a respiratory rate of 20/minute. There was suprapubic tenderness and mild distension on abdomen examination. She had an enlarged uterus corresponding to seven weeks size of gestation. The cervix was closed with tender left adnexa. Her hemoglobin level was 8.0 gm/dl with a positive beta-hCG test. The transabdominal ultrasonography showed a moderate amount of fluid in the peritoneal cavity and the pelvic region with a viable intrauterine gestation of about 7 weeks and a left adnexal haematomaof size 11x7 cm with a central, dense echogenic ring indicative of ruptured left ectopic gestation (Figure 1).

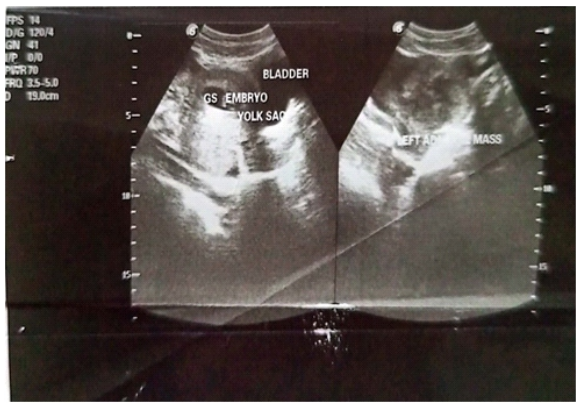

Figure 1: A live embryo within an intrauterine gestational sac (GS) with a left adnexal mass and surrounding hematoma on longitudinal view of an abdominopelvic ultrasound scan.

A diagnosis of a heterotopic pregnancy with ruptured left-sided ectopic gestation was made in view of the clinical history and the sonographic findings. The patient underwent emergency exploratory laparotomy. The intra-operative findings were a ruptured left-sided tubal pregnancy and hemoperitoneum of 1.4 litres. A left-sided salpingectomy was performed and the patient transfused with three units of blood intra-operatively. The intrauterine live gestation was allowed to progress (Figure 2) with the patient delivering a healthy live baby at 39 weeks.

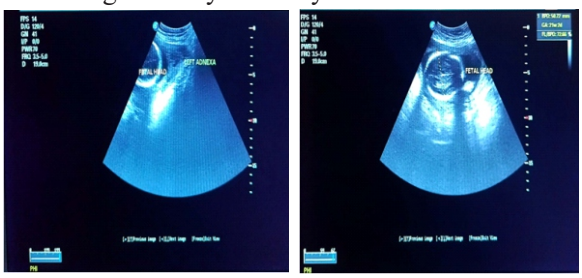

Figure 2: A normal left adnexa with a viable intrauterine pregnancy 10 weeks after surgery.

DISCUSSION

Heterotopic gestation is defined as the co-existence of both intrauterine and extrauterine pregnancy. It frequently occurs in the fallopian tube and rarely in the cervix and ovary.[1,4] Though fairly common with assisted reproduction, heterotopic gestation rarely occurs in natural conceptions.[2,4] Triplet and quadruplet heterotopic conceptions have also been reported, though the incidences are extremely rare.[4,6] Heterotopic pregnancy is seen in 1 in 30,000 natural conceptions, 1 in 900 drug-induced pregnancies, and higher in assisted conceptions.[4,5]

The risk factors for heterotopic pregnancy include previous tubal surgeries, previous ectopic pregnancies, and assisted reproduction techniques like in vitro fertilization and pharmacological ovulation induction.[4,5] This index patient had no associated risk factors for heterotopic conception.

The diagnosis of heterotopic pregnancy is difficult to make clinically.[2,4,5] According to Tal *et al*.[5]the principal presenting symptoms, in decreasing frequency, are amenorrhoea, abdominal pain, vaginal bleeding, abdominal swelling, and shock. In this case report, the patient presented with these

symptoms and was in shock from the hemoperitoneum due to the ruptured tubal pregnancy. Heterotopic pregnancy may likely be missed in spontaneous conceptions unless the sonologist meticulously examine the fallopian tubes and the pelvis. If overlooked, it may lead to tubal rupture and acute abdominal syndrome as in this index case, and can progress to maternal shock leading to maternal mortality.[4,5]

Early diagnosis of heterotopic pregnancy is challenging as the detection of an intrauterine implanted embryo and positive beta-hCG test can mask the need to carefully scan the adnexa in asymptomatic patients.[5] About half of heterotopic pregnancies are discovered during emergency exploratory laparotomies for ruptured ectopic gestation.[2] In this index case, the intrauterine and extrauterine pregnancies were discovered via an emergency ultrasound scan. A high-resolution ultrasonography with focused adnexal scanning at four to six weeks of gestation is recommended for early detection of heterotopic pregnancy.[4,5]

Some pathologies often present like heterotopic gestation and can lead to delayed or missed diagnosis. Intrauterine gestation with hemorrhagic corpus luteum can simulate heterotopic pregnancy both clinically and on ultrasound.[6] Bicornuate uterus with pregnancy in both horns can also mimic a heterotopic pregnancy. A high-resolution ultrasound scan with color Doppler is helpful in ruling out these differential diagnoses as heterotopic gestation displays increased blood flow with markedly reduced resistance index.[7] This is an important aid in the diagnosis of heterotopic pregnancy.

The management of heterotopic pregnancy is laparoscopy or laparotomy for the tubal pregnancy.[8] However, factors such as the severity of presentation, site of ectopic gestation, number of previous pregnancies, the viability or otherwise of the intrauterine pregnancy, the expertise of the physicians, and the socioeconomic status of the patients should be taken into consideration in deciding the options of management.[2,4,5]Usually, the least invasive procedures are preferred for a better outcome for the intrauterine pregnancy. Laparoscopic surgery (salpingostomy or salpingectomy) is the treatment of choice in patients with haemodynamic stability because of a better outcome for intrauterine pregnancy and the least harmful effects on intrauterine gestation.[9]Laparotomy should be carried out in patients with serious intra-abdominal bleeding or in patients with haemodynamic instability.[9] Our patient presented with a rupture of ectopic pregnancy with hemoperitoneum. Exploratory laparotomy was carried out to remove the extrauterine non-viable gestation while allowing the viable intrauterine pregnancy to develop to term. Thus, all surgeons operating for ruptured ectopic must bear in mind the likelihood of heterotopic pregnancy and must handle the uterus with care.[10]

CONCLUSION

Early diagnosis of heterotopic pregnancy significantly reduces the morbidity and mortality of both the mother and the intrauterine gestation. This case report emphasizes focused scanning of the adnexa in the first trimester to exclude extrauterine gestation and to rule out heterotopic pregnancy.All surgeons operating for ruptured ectopic pregnancy must bear in mind the possibility of heterotopic gestation and must handle the uterus with utmost care.

Consent and Ethical Approval

We declared that we have obtained all required consent. The patient has also agreed for her clinical images and information to be published in the medical journal. She understands that her identity will not be revealed.

Financial Support and Sponsorship

Nil.

Competing Interests

The authors have no conflict of interest.

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