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Heterotopic pregnancy in natural conception – A case report

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Abstract

Introduction: Heterotopic pregnancy is the coexistence of living or dead intrauterine pregnancy, single or multiple, and extra-uterine pregnancy located in the oviduct, ovary, uterine cornua, cervix or peritoneal cavity. Heterotopic gestation, although common with assisted reproductive techniques, is very rare in natural conception. A high index of suspicion can help in timely diagnosis and appropriate intervention.
Case report: A 37- year-old primigravida lady with spontaneous pregnancy presented with amenorrhoea of 5 weeks, sudden and increasing lower abdominal pains of 5 days, dizziness of 2 days and vaginal bleeding of 4hours. Transabdominal and Transvaginal ultrasound scan was performed and revealed a non-viable intrauterine gestation at 6 weeks and 3 days, associated with a heterogenous complex right adnexal mass. Laparotomy was done, it revealed a ruptured right fallopian tube with remnant products of conception and hemoperitoneum; and right salpingectomy was done. The specimen was sent for histopathology. The patient tolerated the procedure well, though was resuscitated with normal saline and blood transfusion; she was taken to the recovery room in stable condition. The histopathological report confirmed the diagnosis of ectopic pregnancy.
Conclusion: Despite the rarity of heterotopic pregnancy it should be suspected in patients with hemoperitoneum and an adnexal mass, even in the absence of risk factors, and should be included in the differential diagnosis of acute abdomen in the first trimester. The patient should be thoroughly investigated using abdominal and transvaginal ultrasound to exclude this rare diagnosis and allow on-time proper management.

Keywords: Heterotopic pregnancy, Intrauterine gestation, Extrauterine pregnancy, Transvaginal ultrasound scan

Introduction

Heterotopic pregnancy is the coexistence of living or dead intrauterine pregnancy, single or multiple, and extra-uterine pregnancy located in the oviduct, ovary, uterine cornua, cervix or peritoneal cavity. The first case was described in 1708; at that time the diagnosis was established during autopsy.[1]

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Heterotopic pregnancy is rare and estimated to occur in about 1 per 30,000 spontaneous pregnancies while a higher prevalence may occur in assisted reproduction techniques that may reach up to 1 case per 100 in some literatures. It is a challenge to diagnose such a problem due to complex clinical and laboratory findings.[2]
In this study, the case of the coexistence of intra- and extra-uterine pregnancies has been presented in a patient, who had no stated increased risk of heterotopic pregnancy and who conceived in the course of natural menstrual cycle.

Case report

A 37- year-old primigravida lady with spontaneous pregnancy presented with amenorrhoea of 5 weeks, sudden and increasing lower abdominal pains of 5 days, dizziness of 2 days and vaginal bleeding of 4hours. The patient had not undergone surgeries in the past, suffered from no chronic disease, and no extra-uterine pregnancy risk factors were stated in the medical review.

On admission to the clinic, BP was 97/81mmHg, PR was 91bpm, RR was 40cpm, and temperature was 36.50C. On physical examination, the abdomen was soft, quite tender to palpation, mainly in the right hypogastric area with surgical abdomen symptoms, peristalsis was slow. On gynaecological examination, perineum and vulva as in nullipara, smooth-walled vagina, brownish discharge in vagina was visible on speculum examination; there was no sign of active bleeding from the cervical canal. Bimanual examination was deferred due to pain as patient could not tolerate.

Laboratory test showed serum Human Chorionic Gonadotropin (HCG) to be present and elevated and a packed cell volume of 16%. Transabdominal and transvaginal ultrasound scan was performed using the Logiq V5 device (General Electric Healthcare, USA) with a convex 3 – 5 and endocavity 8 – 12 MHz transducer respectively. Grayscale ultrasound confirmed by colour Doppler revealed a non-viable intrauterine pregnancy with a CRL of 0.60cm corresponding to a GA of 6 weeks 3 days (fig 1&2) associated with an heterogenous complex right adnexal mass (fig 3) with peripheral vascularization of medium resistance flow character in keeping with the "ring of fire" sign and suggestive of being a gestational sac. Pelvic fluid collection was also seen. There was gross low-level echo ascites in the Morrison's pouch and paracolic gutters (fig 4). The ovaries, otherwise, displayed unremarkable ultrasound features.

After informed consent, the patient was transferred to the operating room where general anaesthesia was applied. Laparotomy was performed. It revealed a ruptured right salpinx with a 6 x 3cm longitudinal laceration, normal left salpinx, bilaterally normal ovaries, normal appendix and bulky uterus. 1.5L of hemoperitoneum was drained. Right salpingectomy was done, and the specimen sent for histopathology. The patient was resuscitated with normal saline, 4 units of blood transfusion and Tranexamic acid infusions. Patient was moved to the recovery room and was generally stable.

Histopathological examination of the specimen showed sections of the fallopian tube tissue with extensively haemorrhagic stroma containing variably sized and shaped chorionic villi lined by usual trophoblastic cells admixed with areas of decidualization, consistent with ruptured tubal ectopic pregnancy.

The intrauterine pregnancy was lost via spontaneous extrusion on D2PO

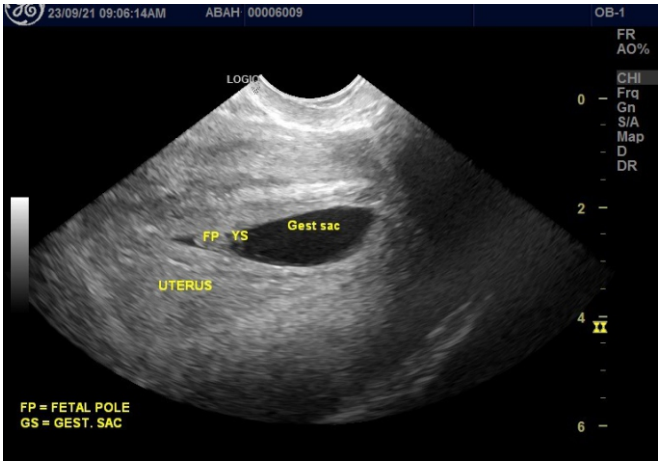

Fig 1: Ultrasound study shows the intrauterine fetus

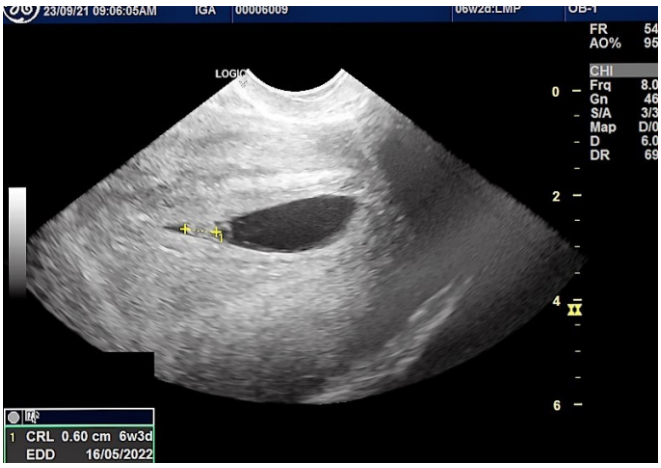

Fig 2: Ultrasound study shows the intrauterine fetus with no cardiac pulsation

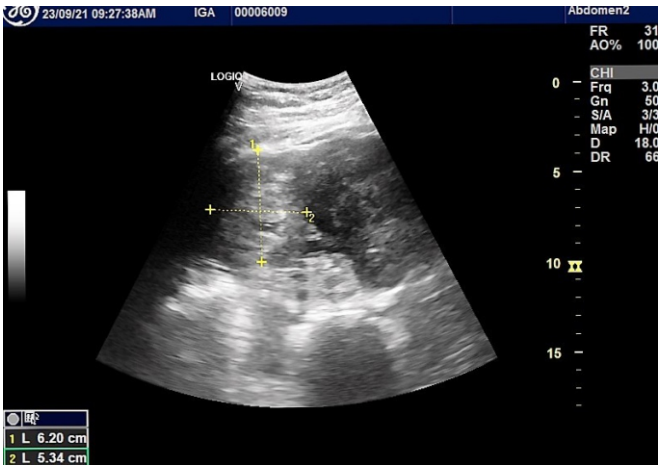

Fig 3: Ultrasound image shows an heterogenous mass in the right adnexa (yellow cursors) located in the oviduct

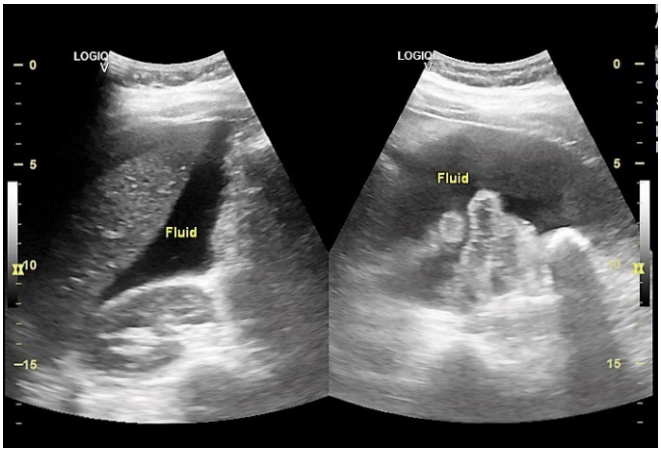

Fig 4: Ultrasound image shows gross hemoperitoneum

Discussion

Heterotopic pregnancy occurs quite rarely. Its incidence equals 1:30,000 of cases.[3] Reece et al1 basing on the studies of natural cycle stated that it can refer to 1/7963 cases. Among the risk factors of intra- and extra-uterine pregnancies, one can list: chronic inflammation in the region of the lesser pelvis, surgical procedures on the adnexa or uterus, previous extrauterine pregnancies, sexually transmitted disease, the use of intrauterine contraceptive device and assisted reproductive techniques (ART).[4,5]

Heterotopic pregnancy diagnosis is one of the most difficult clinical problems. The most frequent symptoms are: abdominal pain-80%, adnexa mass-43%, uterine enlargement – 42%, vaginal bleeding – 32%.[3,4] According to Tal et al,[4] the major symptoms are abdominal pain – 83%, surgical abdomen symptoms and shock – 13% and vaginal bleeding - 50% of cases. In the presented case, all the symptoms occurred – the patient reported abdominal pain and vaginal bleeding, and on clinical and laboratory examinations the patient was in the early stages of hypovolemic shock.

While ectopic pregnancy can be diagnosed early during the screening of the serum b-HCG and transvaginal ultrasound scan, in routine prenatal assessment, heterotopic pregnancy diagnosis can be a challenge as it may be delayed in the concurrence of intrauterine pregnancies. This can be due to the differential diagnosis between ectopic pregnancy and other situations that may be associated with normal pregnancy as haemorrhagic corpus luteum or adnexal torsion.[6-10]

Nevertheless, precise imaging of the adnexa by means of transvaginal ultrasound scan enabled visualization of a pathological structure which might have referred to a pregnancy implanted in the fallopian tube (heterogenous with peripheral vascularity characteristic for implanting trophoblast). This confirms the opinion that the basic diagnostic method in case of heterotopic pregnancy is transvaginal ultrasound examination.8 Ultrasound picture of heterotopic pregnancy may be adnexal complex cyst or mass which can be explained by being hematosalpinx, tubal ring or embryo. Free intra-peritoneal fluid can be seen also.[7-11] In this case the diagnosis of heterotopic pregnancy was accurately made with the use of transvaginal ultrasound scan, which allowed for timely diagnosis and management before grave consequences occurred. The ectopic pregnancy was ruptured and was diagnosed promptly by the presence of free fluid intraperitoneally in a background of a dropping packed cell volume.

Heterotopic pregnancy treatment needs laparoscopy and most often a salpingectomy. However, in hemodynamically unstable cases, laparotomy may be needed, as in this case presented. Heterotopic pregnancy is possible with natural conception and the survival of the intrauterine fetus is feasible[13-15]

Conclusion

Despite the rarity of heterotopic pregnancy, any pregnant woman presenting with severe abdominal pain and adnexal abnormality, heterotopic pregnancy should be among the differential diagnosis. We think that clinicians must be alert to the fact that confirming an intrauterine pregnancy on ultrasound does not exclude the coexistence of an ectopic pregnancy.[12]

The patient should be thoroughly investigated using ultrasound as early and timely diagnosis with proper management can result in a favourable successful obstetrical outcome.

Availability of data and materials

The data that support the findings of this study are available on request from the corresponding author

Abbreviations

HP – Heterotopic Pregnancy
BP – Blood Pressure
RR – Respiratory Rate
CRL – Crown Rump Length
GA – Gestational Age
D2PO – Day 2 Post Op
HCG – Human Chorionic Gonadotropin

Competing interests

The authors did not report any potential conflict of interests

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