Heterotopic Pregnancy in a Natural Conception Cycle: Case Report

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Abstract

Heterotopic pregnancy is a rare event in natural conception cycles. The prevalence of heterotopic pregnancy is known to be increasing in part due to more precise diagnostic techniques and widespread use of of assisted reproductive technology.

A case of an incidental heterotopic pregnancy diagnosed at 10 weeks of gestational age is reported here in which laparotomy was scheduled and right salpingectomy was performed immediately after diagnosis. The intra uterine pregnancy proceeded without any problem until term and a healthy male infant weighing 3680 grams was born.

As this case demonstrates, early diagnosis is the key of successful treatment. Early detection and appropriate intervention in order to save the intra uterine pregnancy and the prevention of associated maternal morbidity and mortality are emphasized.

Keywords: Heterotopic pregnancy, PID, Ectopic pregnancy

Introduction

Pregnancies occurring simultaneously in different body sites (Heterotopic pregnancies) were a rare condition occurring 1 in 30,000 spontaneous pregnancies in 1948. Today the general rate is 1 in 3,800 and for women undergoing in vitro fertilization (IVF), is much higher closer to 1 in 100 pregnancies (1, 2).

Case report

A 34- year- old multiparous woman (G_5 P_4) was admitted to Vali-e-Asr hospital at 10 weeks gestational age with cramping and right-sided pelvic pain in March 2007. She had no history of infertility and pelvic inflammatory disease (PID). The chief complaint was lower abdominal pain with nausea and vomiting from the day before. In clinical examination temperature was 37°C, pulse rate and respiratory rate were 100 and 16 per minute and blood pressure was 110/60 mmHg. Physical examination revealed lower abdominal tenderness. Trans-abdominal ultrasound showed a normal intrauterine pregnancy and another gestational sac in right adnexal region (Fig. 1). The right ovary contained a simple cyst measuring 2x2 Cm and no free fluid was seen. Both intra and extra-uterine pregnancies had 10 weeks gestational age. Cardiac activity was detected in both fetuses. Hemoglobin was 12.1 mg/dl and βhCG titer was 14296 mIU/ml.

After the diagnosis of heteroptic pregnancy, immediate laparotomy was performed and a newly ruptured right ampullary pregnancy was found. The gestational sac was protruding from the site of rupture, and estimated blood loss was less than 50 ml. The extra uterine fetus was alive in an intact gestational sac (Figure 2). Right salpingectomy was done.

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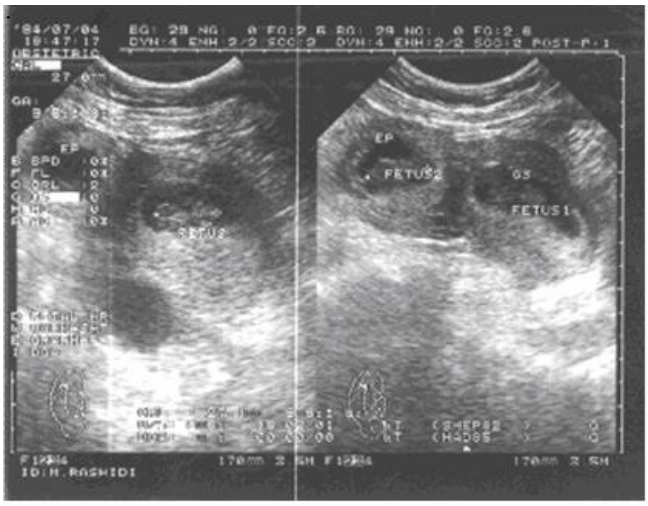

Figure 1: Trans-abdominal sonography of the heterotpic pregnancy showing transverse view of two gestational sacs simultaneously inside uterine cavity and right adnexa.

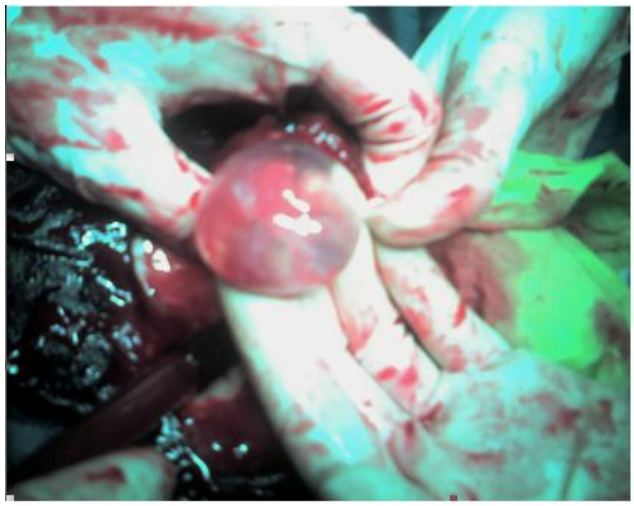

Figure 2: Ampullary ectopic pregnancy in right tube.

During the postoperative period no complications were detected and the patient was discharged after 3 days. The trans-abdominal ultrasounography before discharge, revealed a viable intra uterine pregnancy. The pregnancy was continued uneventfully up to 39 weeks, terminating in the birth of a healthy male infant weighing 3680 grams through cesarean section with concurrent tubal ligation.

Discussion

Heterotopic pregnancy is an unusual type of ectopic pregnancy. The ectopic component is usually tubal but can be ovarian, cervical, corneal or abdo-minal.

Vaginal bleeding may occur, that may be retrograde flow from the ectopic pregnancy due to the intact endometrium of the intra uterine pregnancy. Historically, the incidence of heterotopic pregnancy was estimated as 1 per 30,000 pregnancies (1, 2). However, in the last twenty years there has been an almost four-fold increase in the incidence of ectopic pregnancy in the general population and a corresponding increase in the incidence of heterotopic pregnancy. This has been attributed to the increase in the incidence of PID, prevalent use of IUDs, increased tubal surgery, notable microsurgical procedures, pharmacologic ovulation stimulation and assisted reproductive techniques. Each of these risk factors increases the risk for ectopic pregnancy from 2-7 times above that of the general population, with PID having the most significant effect (1, 2). In addition, recent evidence from research in reproductive technology indicates that heterotopic pregnancy occurs even more frequently in patients participating in ovarian induction programs, where an incidence of 33:10,000 has been reported (3). In our case, heterotopic pregnancy was diagnosed at 10 weeks gestation in a spontaneous conception cycle. The patient had no history of infertility and PID. Heterotopic pregnancy is usually diagnosed from five to 34 weeks of gestation (4). Four common presenting signs and symptoms can be found: abdominal pain, adnexal mass, peritoneal irritation, and an enlarged uterus (3, 5, 6).

Hypovolemic shock with abdominal tenderness may be detected (2). Trans-vaginal ultrasound generally gives the diagnosis which may be con-firmed by laparoscopy, allowing treatment of the extra uterine pregnancy (3, 5).

Serial samples of serum βhCG may also be helpful in the diagnosis of ectopic pregnancy, but subnormal hormone production from ectopic gestation may be masked by the higher placental production from intrauterine pregnancy (7). In all other types of ectopic pregnancy, the nonvisualization of an intrauterine gestation when the βhCG titer exceeds 1700 mIU/mL (First International Preparation) is a strong indicator of ectopic pregnancy (5). The adnexal and extra uterine findings are then used to support or challenge the diagnosis. In a heterotopic pregnancy, only careful examination of the extra uterine anatomy provides the means of making the

sonographic diagnosis.

Sonographically, an adnexal mass is seen in 80% of ectopic pregnancies (7, 8). It is reasonable to expect that these percentages can also be applied to heterotopic pregnancies. This means that in 20% of cases the sonographic diagnosis of a heterotopic pregnancy can not be made. Conversely, however, it also means that potentially the diagnosis can be made in 80% of the cases with rigorous sonographic evaluation of the adnexae. Suspicious adnexal masses can be investigated with Doppler ultrasound in an attempt to improve sensitivity and specificity. Taylor and coworkers have described a high velocity, low resistance Doppler signal that is associated with the developing trophoblast (7, 8). They reported that identification of this type of flow pattern in an adnexal mass using trans-abdominal ultrasound raised the sensitivity for the diagnosis of an ectopic pregnancy from 53% to 73%. They also reported a sensitivity of 96% and a specificity of 93% using trans-vaginal color Doppler (8). We are currently using trans-vaginal color Doppler to assess all suspected ectopics, but have been unable to see such encouraging results. Surgical removal of the ectopic gestation by salpingectomy or salpingostomy is the treatment of choice (8). In patients in whom the diagnosis of ectopic pregnancy can be made without laparoscopy and who sonographically demonstrate an unruptured gestation and a persistent downward trend of the ß-hCG assay, expectant management has been successfully applied (5, 9). This form of conservative management can also be applied to heterotopic pregnancies having a similar clinical appearance. Salpingocentesis with the application of methotrexate or potassium chloride into the gestational sac is investigational at this time. There are several reports of successful application in the management of a heterotopic pregnancy (5, 10). The standard treatment for ectopic pregnancy is surgery by laparoscopy or laparatomy (3, 10). Methotrexate, RU486 or prostaglandins should not be used due to their potential adverse effects on the intra uterine gestation (6). Maternal and intra uterine fetal prognosis depends on early diagnosis which should be made, if possible, prior to termination of the extra-uterine pregnancy. In patients without risk factors, the presence of an intrauterine gestation much more reliably excludes the possibility of a heterotopic gestation, but does not rule it out. As this case demonstrates, the adnexal and extra uterine sonographic findings are then used to support or challenge the diagnosis. The need to maintain high index of suspicion and to intervene early enough to save the intra uterine component and to prevent maternal morbidity and mortality associated with the ectopic pregnancy are emphasized.

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