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# HETEROTOPIC PREGNANCY FOLLOWING IVF CARRIED TO TERM PREGNANCY: A CASE REPORT

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## ABSTRACT

Naturally occurring hetetrotpoic pregnancy is exceedingly rare, but the incidence increases with the Introduction of assisted reproduction. Having delivery of a term baby is exceptionally rare. History, clinical examination and ultrasound without high index of clinical suspicion may be misleading. We report a case of a combined intrauterine and intraabdominal pregnancy, diagnosed at Cesarean section at 35 weeks gestations in a 38-year-old multiparous yielded healthy twin at term. Conclusion: Quantitative risks assessment in high risk group may reduce the physician diagnostic errors.
**Key words:** heterotopic, pregnancy, abdominal, fertilization in vitro, pregnancy outcome, last trimester

## INTRODUCTION

Since the introduction of assisted reproduction techniques (ARTs) and embryo transfer; heterotopic pregnancy (HTP) is becoming a serious obstetric problem. Recent reports have shown that the in the incidence of heterotopic pregnancy is significantly influenced by the introduction of ARTs. The estimated rate of HTP following spontaneous pregnancy is 1 in 3,800 pregnancies [1]. The rate was even much higher before the year 1948. The rate of heterotopic pregnancy in women with assisted reproduction is closer to 1 in 100 pregnancies [1].

HTP posed diagnostic difficulties even with current diagnostic images. In some cases even when the diagnosis is established, the management is difficult and life threatening. The imperfect obstetrics outcome resulted in increased litigation. In this study, we describe HTP in an asymptomatic patient who was misdiagnosed as intra-uterine twin pregnancy. The diagnosis of HTP was established at Cesarean section at 35 weeks gestation, and both twins were carried to term ended in birth of healthy twin.

## CASE REPORT

A 38-year-old lady Gravida 3 Para 2 married for 18 years. Her first pregnancy was spontaneous, ended in unexplained intra-uterine fetal death at 28 weeks; the second was induced pregnancy by IVF after 7 years of secondary infertility ended in a term singleton pregnancy terminated by elective cesarean section at 38 weeks gestation. The index pregnancy followed IVF, after 9 years of secondary infertility done on April 29, 2011. There was no history of pelvic inflammatory disease. The medical history was uneventful. The patient was booked for regular obstetrics evaluation on 27 July 2011. Her initial investigations were as follows: Hb, 12.3g/dl; the total white blood count was within the normal range, and blood group, O positive. The urine

analysis was normal. The renal and liver profiles and Blood sugar were normal. Real-time sonography demonstrated intra-uterine viable twin fetuses. Biometric assessment was consistent with a 12-week gestation, and the amniotic fluid volume was normal. A repeat sonogram on September 6, 2011, demonstrated a transverse fetal lie of the first twin and the second twin was presented by breech. The estimated gestational ages were 33 and 30 weeks respectively. The estimated fetuses' weights were 1.578 and 1.253kg respectively. The amniotic fluid volume was normal; the placenta was fundal, and there were no fetuses abnormality detected. The patient did not reveal any complaints. She was admitted on December 24, 2011 at 5 P.M. in labor with a 2-hours history of vaginal discharge. On physical examination, pulse was 90 beats per min, BP was 120/85 mmHg, temperature was 37. C°, respiratory rate was 18 per min, and the body mass index was 27. The obstetric examination revealed a distended abdomen, a fundal height consistent with 38 weeks gestations, multiple fetal parts. The fetuses lie was difficult to determine. On vaginal examination, the cervix was soft, 3 cm dilated, effaced, and the membranes were ruptured. The fetal breech was not engaged, and there was a watery, non-malodorous vaginal discharge. Emergency Caesarean section was decided on accounted of twin gestation, first beech and a prior cesarean section. At Caesarean section, the uterus was opened through a lower transverse incision. The first twin was delivered by breech extraction. Strikingly, the co-twin was not found in the uterine cavity. Huge, intact, intra-abdominal sac was found, and it was obviously containing the second twin. We incised the sac and a healthy baby was delivered. The first twin was a boy weighing 2.1 kg, cried immediately, with Apgar scores of 8 and 9 in 1 and 5 minutes respectively. The second twin was a female baby weighing 1.8 kg, cried immediately with Apgar scores of 8 and 9 at 1 and 5 minutes respectively. The placenta was morbidly attached to the posterior abdominal and uterine wall and partially to the small bowel (Fig. 1). The cord was ligated with absorbable suture, and the placenta was left in situ (Fig. 2). There was intra-operative oozing from the placental site which necessitated intra-abdominal packing for48 hours. Following this, the patient did well, and she was hemo-dynamically stable. She was transferred to the Intensive care unit, for close observation and follow-up. She had uneventful post-operative recovery. The postoperative treatment included, 4 units of packed RBCs, 2 units of fresh frozen plasma, and intravenous gentamicin (80 mg twice per day), ceftriaxone (1 g twice per day for 5 days), and metronidazole infusion (500mg every 8 hours for 5 days). On the 5th day postoperatively, the patient developed wound dehiscence. Swab culture yielded Acinetobacter baumannii. We continued on antibiotics and daily dressing. On the 8th day post-operatively she was discharged home in good condition. This case was approved by the hospital Ethical Committee.

## DISCUSSION

Take home babies in heterotopic without associated fetal or maternal complications is exceedingly rare. In 1983, there were only 13 cases in 589 reports from the world literature where this problem was described 3. Recently, a 30-years review from 1976 to 2006 showed that there were 20 cases out of 58,000 deliveries, for incidence of 0.34 per 1000 deliveries [2]. These reports indicated the scarcity of this condition, resulting in the physician underestimation, and lack of the correct diagnosis at the time of presentation is most reported cases, including the former case.

Our case illustrates uneventful a heterotopic pregnancy following an IVF. She had benign obstetric history throughout her pregnancy. In several previous reports, the diagnosis of term

abdominal pregnancy was always made late. The majority of cases were diagnosed when the condition of the patient necessitated intervention, e.g. cesarean section or induction of labor. In many cases, the diagnosis of HTP is suspected when the patient presents with abdominal pain following assisted reproduction. Our patient had several risks for extrauterine pregnancy, which include prolonged subfertility, pelvic surgery, IVF and multifetal gestation, but she had no symptoms suggestive of heterotopic pregnancy, especially lower abdominal pain which is the main complaints. Our patient had repeated scan which did not yield any sign suggestive of extrauterine pregnancy. Pre-natal diagnosis of intra-abdominal pregnancy by ultrasound is disappointing; however, it's diagnostic error is as high as 50-90% [3]. Therefore, to diagnose heterotopic pregnancy a high index of clinical awareness is needed. The high rate of diagnostic error reported in many cases, in part due to the fact that almost half of cases of heterotopic pregnancies are asymptomatic; and physicians' usually respond to diseases when symptoms appeared. In such situation, risk assessment will be valuable in reducing our diagnostic errors. The reportedly, high maternal and fetal mortality was related to delayed diagnosis make it becoming necessary to introduce MRI in the evaluation of high risk patients. We recommend that any patients who have had IVF should be offered medical imaging to exclude extrauterine pregnancy especially for those with multifetal gestation. In the current case, the placenta was found to be adherent to the posterior uterine wall and to part of the small bowel, in the majority of the reports the placenta was left in situ. Blood oozing arise from placenta site can be effectively treated with intra-abdominal packing. Our patient developed wound dehiscence and swab culture yielded Acinetobacter baumannii which is an opportunistic infection, but otherwise did well.

## CONCLUSION

Heterotopic pregnancy is a rare clinical condition. The diagnosis is difficult especially in asymptomatic patients that constituted almost half of the cases. Quantitative risk assessment may reduce our diagnostic errors. The condition should be suspected in any patient underwent in vitro fertilization with multifetal gestation. We recommend that such patients should be offered an initial medical imaging to exclude heterotopic pregnancy and the radiologist should be notifying for the possibility of HTP.

**Conflict of interest:** We declare no conflicts of interest.

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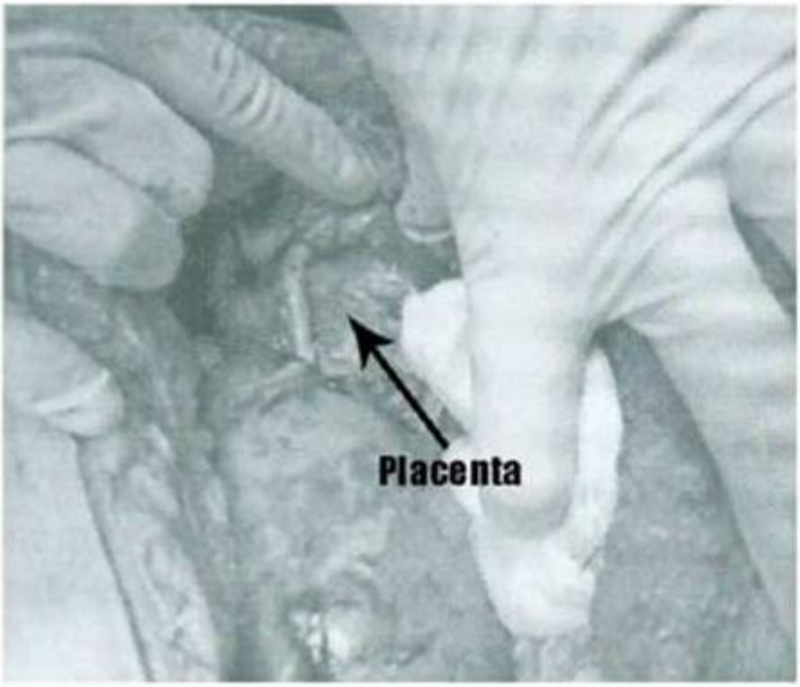


**Figure 1: The image of the intraabdominal placenta (arrow), attached adherently to the posterior abdominal wall and the uterus, in a 38-year-old woman with heterotopic pregnancy delivered at 35 weeks gestation**

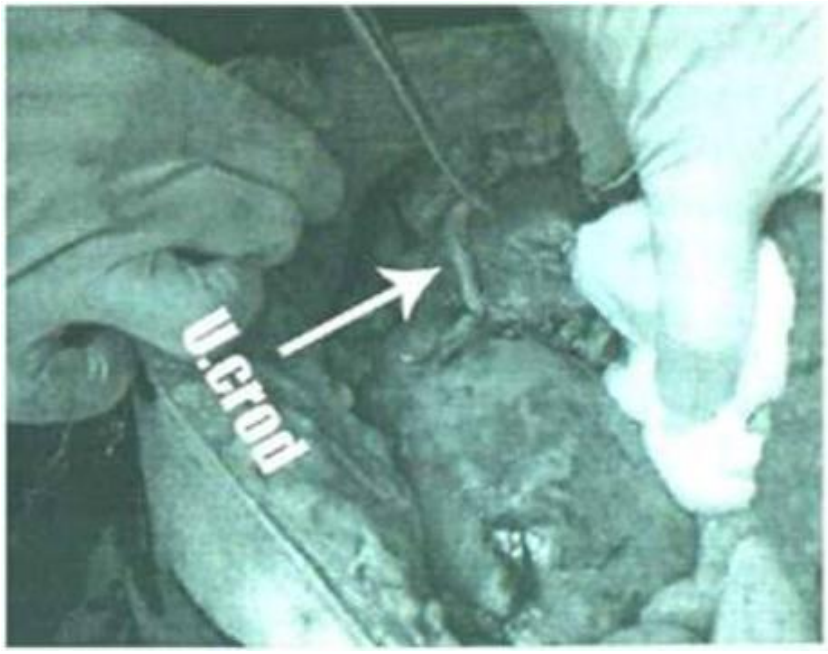


**Figure 2: The image of the umbilical cord (arrow) of the intraabdominal placent`a ligated and left in situ in a 38-year old woman with heterotopic pregnancy delivered at 35 weeks gestation**