**Case report** **Allied Science**

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# HETEROTOPIC PREGNANCY WITH SUCCESSFUL PREGNANCY OUTCOME: A RARE CASE REPORT

**SUNIL KUMAR SAMAL AND SETU RATHOD***

*Department of O & G, Mahatma Gandhi Medical College & Research Institute, Pondicherry*

## ABSTRACT

Heterotopic pregnancy (HP), the presence of two gestational sacs simultaneously, is a rare event, but with the advent of assisted reproductive technology (ART), it is now an increasingly common complication. We report a case of a 35-year-old $G_2A_1$ who was presented to our casualty at 13 weeks gestation with complains of severe pain abdomen and features of hypovolemic shock. Subsequently, she was diagnosed as a case of HP with right ruptured rudimentary horn pregnancy and viable intrauterine pregnancy of 13 weeks gestation. Emergency laparotomy with resection of right side rudimentary horn of uterus was done and the viable intrauterine gestation was allowed to continue. The course of intrauterine pregnancy was uneventful and she delivered a term female by caesarean section for non progress of labour.

**KEYWORDS:** **Rudimentary horn pregnancy, Heterotropic pregnancy, Assisted Reproductive Technology**

***Corresponding author**

**SETU RATHOD**
**Department of O & G, Mahatma Gandhi Medical College & Research Institute, Pondicherry**

# INTRODUCTION

A heterotopic pregnancy(HP) is defined as coexisting pregnancies at two different implantation sites and the most common combination is an intrauterine with an extra uterine gestation, most of which are in the tube (90%), but implantation in the cervix, ovary, interstitial segment, abdomen, and previous caesarean scar have been reported.[1] The incidence of HP has increased recently due to increasing use of exogenous gonadotropins with assisted reproductive technique (ART) and the incidence is approximately 1 in 3,900 pregnancies.[2] This case is presented here because of its rarity.

## *Case report*

We report a case of a 35-year-old $G_2A_1$ at $13^{+1}$ weeks of gestation, presented to our casualty with complains of severe pain abdomen since two hours before admission. There was no history of bleeding, spotting or passage of fleshy mass per vaginum. She had a non consanguineous marriage with her husband since 8 years. Her first pregnancy was a spontaneous abortion at 2 months of gestation following which suction evacuation was done. In this pregnancy there was history of ART procedure for treatment of 6 years of secondary infertility. There was no history of excessive vomiting, fever, burning micturition or pelvic inflammatory disease. A scan at 6 weeks at the ART unit confirmed a viable intra-uterine pregnancy. Her next scheduled visit for a follow-up scan was at 10 weeks, which was missed by her. General examination revealed severe pallor with pulse rate-120/min and blood pressure-90/60 mm Hg. Other systemic examination revealed no abnormality. Abdomen examination revealed distended abdomen, suprapubic tenderness with shifting dullness present. There was no organomegaly or any mass felt per abdomen. On pelvic examination uterus was 14 week, all fornices were tender and full and cervical motion tenderness present. Investigation revealed her hemoglobin level was 7.5 gm/dl. Transabdominal ultrasonography revealed a live intrauterine gestation of $12^{+1}$ wks with another extrauterine fetus of $13^{+1}$ weeks gestation without cardiac activity which was floating nearby among maternal bowel loops and uterine wall not well defined around it (Figure 1). Moderate amount of fluid was present in the peritoneal cavity. Provisional diagnosis of a heterotopic pregnancy with rupture of extra uterine pregnancy was made and planned for emergency laparatomy with concurrent resuscitations. Intraoperatively ruptured right rudimentary noncommunicating horn pregnancy was found with hemoperitoneum of one litres (figure 2). An extrauterine dead fetus of 13 weeks gestation was found floating in the hemoperitoneum among bowel loops (Figure 3). Right rudimentary horn resection with right salpingectomy was done and the intrauterine live gestation was allowed to continue. Three units of blood transfused postoperatively. Post operative period was uneventful. The intrauterine pregnancy continued uneventfully. She delivered a healthy live baby at term by Caesarean section for non progress of labour.

## *LEGENDS*

**Figure 1**

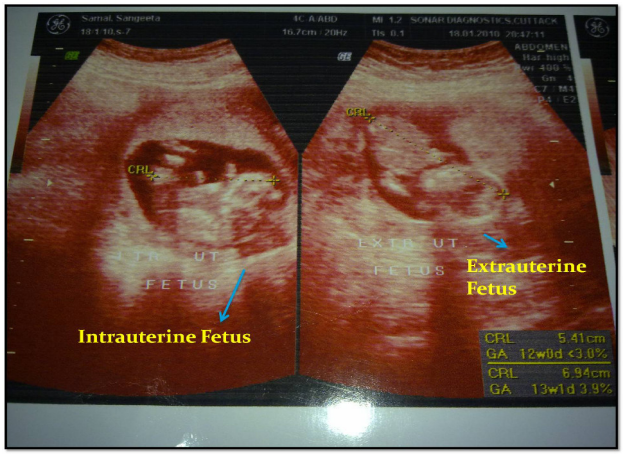



**Figure 1**
***Ultrasound showing both intra and extra uterine pregnancy***

**Figure 2**

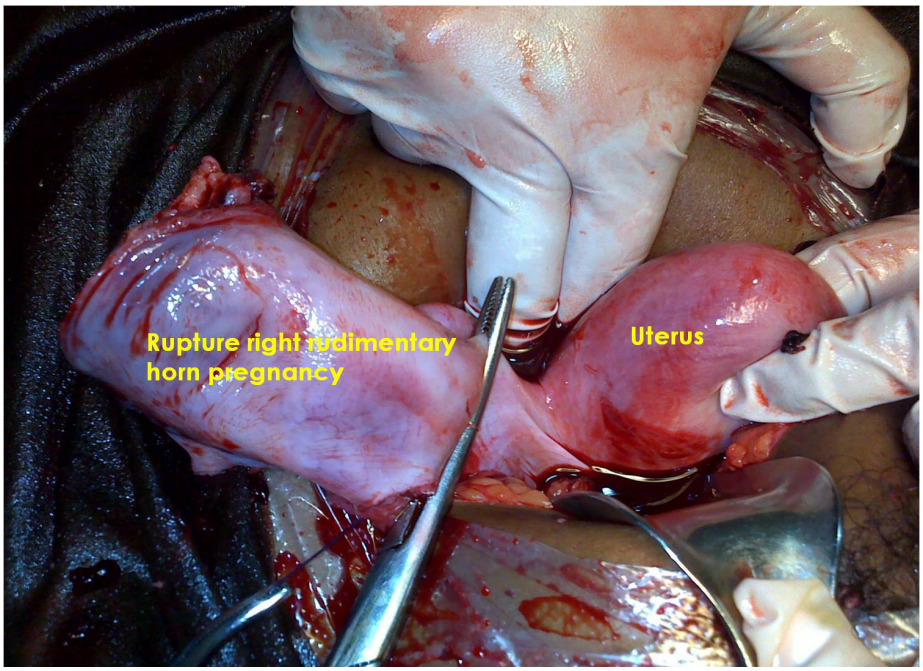
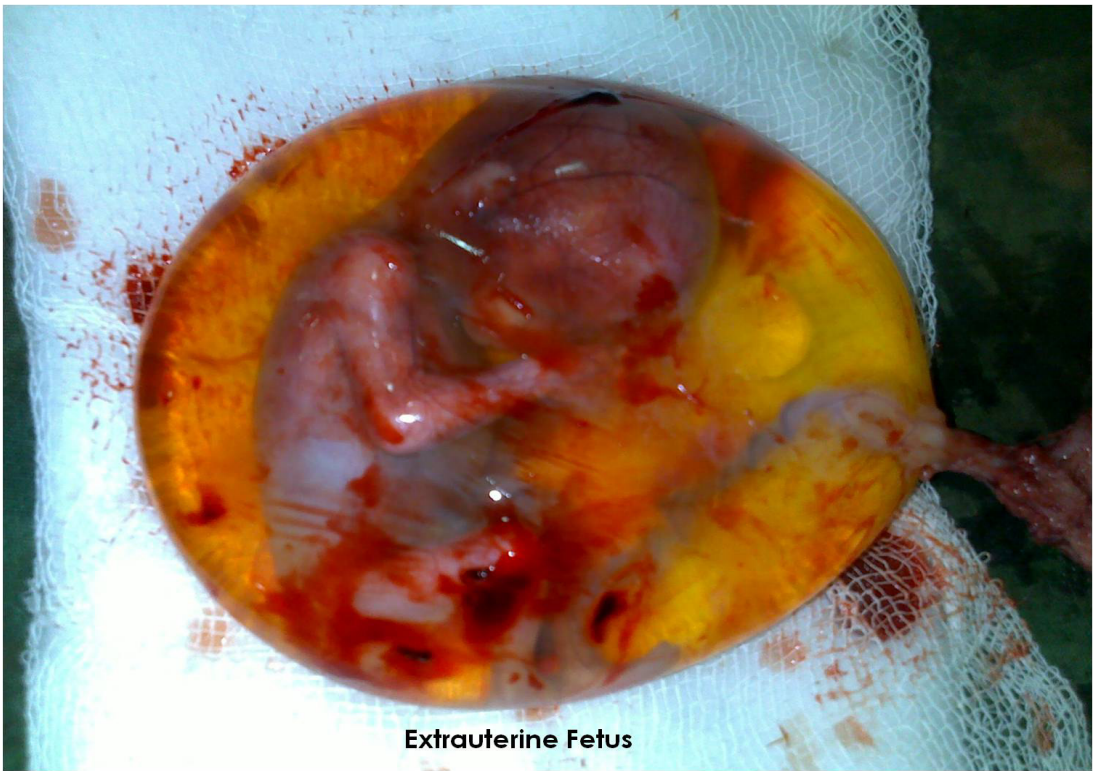



**Figure 2**
***Rupture right rudimentary non communicating horn of the uterus***

**Figure 3**




**Figurer 3**
***Extra uterine foetus of 13 weeks of gestation***

# DISCUSSION

Patients who have undergone ART procedures have a much higher incidence of heterotopic pregnancy than those who have a spontaneous conception.[3] The risk factors for ectopic pregnancy are tubal damage including scarring, tubal epithelium or cilium damage and stenosis of the tubal lumen following pelvic inflammatory disease or previous tubal surgery. [4] There is a 6-fold rise of an ectopic pregnancy in the presence of any pathological changes in the fallopian tubes.[5] In ART procedures, the embryos that are placed in the endometrial cavity do not implant immediately on to the endometrium. They may drift towards the tubes and under the influence of the corpus luteum, return later to embed in the cavity. [6] However, in the presence of an existing damaged tube, this journey may be interrupted increasing the chances of an ectopic pregnancy and with a higher order of embryos being placed in the womb predisposing to a heterotopic pregnancy. The other possible reasons in ART procedures for the ectopic pregnancy include perforation of the cervix or uterus at embryo transfer, migration of the embryos from the uterus to the broad ligament via the contra lateral fallopian tube, and recanalization of the post-tubectomy stump of the fallopian tube at the junction of the isthmus and cornua.[7] In our case, there was history of spontaneous abortion and previous suction and evacuation which could be a possible cause of PID and tubal damage. A Heterotopic pregnancies is often difficult to diagnose serial beta-hCG levels are not helpful as the intrauterine pregnancy causes the beta-hCG level to rise appropriately and when Ultrasonography reveals an intrauterine pregnancy, the possibility of an ectopic pregnancy generally is excluded which was happened in this case. Consequently, diagnosis will be delayed and over half of all heterotopic pregnancies are recognized only after tubal rupture occurs. [1] The signs and symptoms of heterotopic pregnancy are similar to those of ectopic pregnancy. The diagnosis of a heterotopic pregnancy is varied. The patient can remain asymptomatic or present with an abdominal pain, which is easily confused with ovarian hyper stimulation syndrome, especially after an IVF procedure. [8] Treatment of heterotopic pregnancies is complicated by the coexisting intrauterine pregnancy. Expectant management is inappropriate because neither serum beta-hCG level nor Ultrasonography can accurately determine the fate of the ectopic pregnancy and the risk of rupture. Systemic or local methotrexate injection is contraindicated due to the detrimental effects on the normal intrauterine pregnancy. [1] Selective embryo reduction by direct local injection of potassium chloride [9] or hyperosmolar glucose [10] in to the ectopic gestational sac under ultrasound or laparoscopic guidance can be done. Otherwise, surgical treatment by salpingostomy or salpingectomy is considered as the treatment of choice.[1] In our case, the extra uterine pregnancy was in the cavity of right rudimentary non communicating horn of the uterus. Since the diagnosis of heterotopic pregnancy was made late at 13 weeks after the rupture of right rudimentary horn pregnancy followed by severe internal bleeding, emergency laparotomy with resection of right rudimentary horn of uterus along with right salpingectomy was done. The survival rate of the intrauterine pregnancy of a patient with a diagnosis of heterotopic pregnancy has been reported to be 66% after surgical treatment.[11] Such a catastrophe can be prevented by early diagnosis through extensive adnexal scanning during initial antenatal visits. [12] Once diagnosed in early gestation, most cases are usually dealt with by laparoscopy; however laparotomy may be the treatment of choice in cases with serious intraabdominal bleeding or in patients with hemodynamic instability due to hemorrhagic shock.

# CONCLUSION

Diagnosis and management of a heterotopic pregnancy remains a challenge even in the hands of a skilful obstetrician. The extra uterine pregnancy needs to be terminated using minimally invasive technique and without disturbing the intrauterine gestation sac. As an obstetrician, a high index of clinical suspicion and an early scan is mandatory to make a diagnosis of a heterotopic pregnancy and manage accordingly to prevent catastrophic events like rupture and hemorrhagic shock.

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