

# A study on incidence of ectopic and heterotopic pregnancy

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## Abstract

A heterotopic pregnancy is defined as concomitant occurrence of intrauterine and extrauterine pregnancies. The incidence estimated is 1 in 30000 in spontaneous pregnancies and it rises to 1 in 3900 with assisted reproductive techniques (ART). A retrospective study of all ectopic pregnancies in a tertiary care centre for a period of one year from Jan 2014 to Dec 2014 was done which showed the incidence of ectopic pregnancies as 48/13000 deliveries and heterotopic pregnancy as 1/13000 deliveries. A rare case of heterotopic pregnancy in a natural cycle with recurrent ectopic is reported which was managed surgically and the intrauterine pregnancy continued and delivered at term. The management of heterotopic pregnancy is a challenge to obstetrician as they are associated with significant maternal morbidity and mortality. An high index of suspicion in all patients with amenorrhea and abdominal pain even after conforming intrauterine pregnancy and a thorough evaluation of adnexae using transvaginal ultrasound should be done.

**Keywords:** Ectopic Pregnancy, Heterotopic Pregnancy, Recurrent ectopic.

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## INTRODUCTION

Simultaneous occurrence of intrauterine and ectopic pregnancies is called Heterotopic pregnancy (HP). Heterotopic pregnancy is a rare entity; the incidence reported is between 1:8000 and 1:30000 pregnancies, increased in assisted reproductive techniques (ART).<sup>1</sup> Heterotopic pregnancy in natural cycle is a very rare event. The first case reported by Duverney in 1708 as an autopsy finding.<sup>2,3</sup> Presence of intrauterine pregnancy often delays the diagnosis. Heterotopic pregnancy should be ruled out in patients with intrauterine pregnancy presenting with acute pain abdomen and hemoperitoneum.<sup>4,5</sup> Previous history of ectopic is an important risk factor for heterotopic pregnancy.<sup>6</sup>

## MATERIALS AND METHODS

This was a retrospective study on incidence of Heterotopic and Ectopic pregnancy among all deliveries which occurred at Cheluvamba Hospital, Mysore from period January 2014 to December 2014. The case sheets of the patients with heterotopic pregnancy and ectopic pregnancy were traced through the labour ward registers and operation theatre registers.

## OBSERVATION AND RESULTS

During the study period of one year there were a total 13000 deliveries in our hospital and 48 cases of ectopic pregnancy were admitted giving incidence of ectopic pregnancy of 3.7/1000 deliveries. There was one case of heterotopic pregnancy with an incidence of 1/13000 pregnancy. It was a rare case of recurrent ectopic with heterotopic pregnancy in a natural cycle. A 19 year old female referred with history of 1 and ½ months amenorrhoea, pain abdomen and vomiting since 1 day on 10/04/14. She was Gravida 2 Abortion 1 with previous history of laparotomy one year back with left salpingectomy for ruptured ectopic pregnancy. On examination, she was conscious and co-operative with severe pallor, PR-100/min and BP-100/60mmHg. On abdominal examination, there was a subumbilical midline

vertical scar and suprapubic tenderness. On pelvic examination, uterus bulky, cervix soft, no bleeding, os closed, tenderness in left fornix and cervical movement tenderness. Emergency ultrasound showed a single live intrauterine pregnancy of 8±1 week with mixed echogenic lesion in left adnexa with moderate fluid in peritoneal cavity with internal echoes. Her earlier scan (on 03/04/14) before onset of symptom showed single live intrauterine pregnancy of 7-8wks with CRL of 1.1cm. Patient shifted for emergency laparotomy. Hemoperitonium of about 1.5

litres, ruptured ectopic at left tubal stump was present. Right ovary and tube, left ovary were normal, and uterus was bulky. Left salpingectomy done. Repeat ultrasound done after two days to find single live intrauterine gestation of 9±1 week. Patient discharged on 7<sup>th</sup> day. Histopathology report confirmed ectopic features. She was followed up regularly and admitted at 36 weeks with PROM to deliver a female baby weighing 2.1kg on 29/10/14.



Figure 1: ultrasound picture showing two gestational sacs in uterine cavity and left adnexa

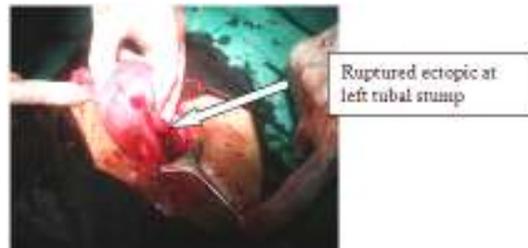


Figure 2: Showing the intra-operative picture of Heterotopic pregnancy

**DISCUSSION**

Heterotopic pregnancy in natural pregnancy is very rare. Early diagnosis of such cases is very difficult because the ectopic pregnancy is often overlooked once the intrauterine pregnancy has been confirmed. Its incidence rises as a result of assisted reproductive techniques to 1 in 100 to 1 in 500.<sup>5</sup> The causes of HP are same as those cited for ectopic pregnancies. In most cases common symptoms seen are diffuse abdominal pain (83%), hypovolemic shock with guarding (13%) and vaginal bleeding (50%).<sup>7</sup>

**Risk factors**

Greatly increased risk-Previous ectopic

- Positive Chlamydia trachomatis
- Post tubal surgeries

Moderately increased risk-PID

- Increased promiscuity
  - Smoking (10-19/day)
  - Age>40yrs
  - Previous abortions>3
- Slightly increased risk- Post IUCD
- Age35-39yrs
  - Previous ruptured appendix
  - Previous abruption placenta
  - Previous spontaneous abortion
  - Smoking<sup>8,9,10</sup>

The morbidity and mortality associated with Heterotopic pregnancy are directly correlated to the time between the first symptom and the final diagnosis. Most cases of Heterotopic pregnancy are diagnosed between 5<sup>th</sup> and 14<sup>th</sup> week of gestation; 70% are diagnosed between 5<sup>th</sup> and 8<sup>th</sup> wk; 20% between 8<sup>th</sup> and 9<sup>th</sup> week and remaining 10% after 10<sup>th</sup> week. The location of ectopic gestation in a

heterotopic pregnancy is the fallopian tube. However cervical and ovarian Heterotopic pregnancies have also been reported. Singleton pregnancy is commonest, rarely triplets and quadruplets Heterotopic pregnancies have also been reported. Transvaginal ultrasonography is the method of choice for the diagnosis of Heterotopic pregnancy. Both Transvaginal ultrasonography and Transabdominal ultrasonography should be done to ensure higher lying extrauterine pregnancies are not missed.<sup>11, 12,14</sup> Differentiating between extrauterine pregnancy and haemorrhagic corpus luteum is difficult both clinically and on ultrasound. In such cases the increased echogenicity arising from trophoblast invasion of the tubal or ovarian wall compared to the wall of the corpus luteum may differentiate. Bicornuate uterus with gestation in both cavities may simulate a heterotopic pregnancy. High resolution transvaginal ultrasound with color doppler will be helpful as the trophoblastic tissue in the adnexa in Heterotopic pregnancy shows increased flow with significantly reduced resistance index.<sup>13</sup>

### TREATMENT

Diagnostic laparoscopy with vaginal sonography is the gold standard when Heterotopic is suspected. In a review of 80 cases with Heterotopic treated surgically, the survival rate of the intrauterine pregnancy was 68.7%.<sup>14</sup> Another method to treat Heterotopic is local use of foeticidal agents such as methotrexate (MTX) or potassium chloride (KCL) in asymptomatic patients. There is no data for the safety of local MTX on the fetal development. Hence potassium chloride is preferred for foeticide. The disadvantage of KCL is that it may not completely inhibit the trophoblastic invasion.<sup>15</sup>

### CONCLUSION

An high index of suspicion in all patients with amenorrhea and abdominal pain even if an intrauterine pregnancy has been confirmed and thorough evaluation of the adnexae using a transvaginal scan should be routinely performed in such cases. Its treatment is a challenge as serial beta HCG is not useful in diagnosis and follow up. Medical treatment with methotrexate is contraindicated with an intrauterine pregnancy.

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