

# HETEROTOPIC PREGNANCY: A CASE REPORT

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## ABSTRACT

Heterotopic pregnancy is a catastrophic form of ectopic pregnancy and its incidence is still low but it is increasing, mainly secondary to the increase in assisted reproductive technology procedures. The definition of heterotopic pregnancy is the simultaneous development of an intrauterine pregnancy and an extrauterine one. We report a case of 33-year-old woman with intrauterine viable fetus and right tubal heterotopic pregnancy.

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### Case Report

A 33-year-old woman who is P3+0, had three normal vaginal deliveries. She got pregnant spontaneously and she had visited the antenatal clinic at 7 weeks gestation as a routine visit. Transabdominal ultrasonic scanning revealed a single intrauterine viable fetus with no apparent adnexal pathology. Three weeks later she came to the emergency room complaining of severe abdominal pain, vaginal spotting, dizziness and shoulder pain. The physical examination revealed; postural hypotension and tachycardia, suprapubic tenderness and positive cervical excitation.

The patient was admitted to the hospital and her initial laboratory results showed a low hematocrit.

On transvaginal scanning, there was a single intrauterine viable fetus with a crown rumb length CRL 33 mm which goes with 10 weeks gestation and a right adnexal mass (72×45 mm) with free fluid in pouch of Douglas. The differential diagnosis includes complicated hemorrhagic ovarian cyst or coexisting ectopic pregnancy. The patient underwent laparotomy and was found to have a ruptured right tubal ectopic pregnancy with significant amount of blood in the Douglas pouch. Right salpingectomy performed with preservation of the intrauterine pregnancy. The postoperative course was uneventful. Pathologic examination of the surgical specimen revealed the presence of chorionic villi and confirmed the diagnosis of a ruptured ectopic pregnancy. The intrauterine pregnancy proceeded uneventfully to 40 weeks and the patient underwent

cesarian delivery due to transverse lie with the outcome of a healthy female infant weighing 3350gm.

### Discussion

There was a gradual increase in the incidence of heterotopic pregnancy, which was 1: 7963 in 1983,<sup>(1)</sup> and 1: 3889 in 1986<sup>(2)</sup> but nowadays the incidence is 1: 3800<sup>(3)</sup> in spontaneous pregnancies and 1: 100 in women undergoing IVF.<sup>(4)</sup> In general population, the major risk factors for heterotopic pregnancy are the same as those for ectopic pregnancy. But for women in an assisted reproductive program there are additional factors like, the simultaneous transfer of multiple embryos in IVF patients, higher incidence of multiple ovulation and gestation and a higher incidence of tubal malformation.<sup>(5,6)</sup>

Heterotopic pregnancies have been reported to occur at various sites: Pregnancies accompanying intrauterine pregnancies most commonly occur in the fallopian tubes. Other sites include bilateral tubal pregnancy, abdominal and intrauterine pregnancy, and twin tubal and intrauterine pregnancy. Simultaneous intrauterine and interstitial and cornual remnants of fallopian tube have also been reported.<sup>(7)</sup>

Earlier diagnosis and treatment of ectopic pregnancy has resulted in a dramatic decrease in maternal morbidity and mortality in spite of the increase in the incidence of ectopic and heterotopic pregnancy.

In ectopic pregnancy, the serum  $\beta$ -hCG is usually less than a normal intrauterine pregnancy of the same

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gestational age and serial assays demonstrate a delayed doubling time. However, a heterotopic pregnancy shows normal  $\beta$ -hCG values due to the presence of normal intrauterine gestation. The presence of intrauterine pregnancy lowers the index of suspicion of an ectopic pregnancy, even may result in a less rigorous sonographic evaluation of the adnexa and consequently delayed or missed diagnosis of heterotopic pregnancy.

In case of ectopic pregnancy the main indicator of the diagnosis is the absence of intrauterine pregnancy with  $\beta$ -hCG greater than 1500mIU/mL and the sonographic findings will confirm the diagnosis. In case of heterotopic pregnancy only the careful sonographic examination of the extra uterine anatomy provides the means to make the diagnosis.

Sonographically, an adnexal mass is seen in 80% of ectopic pregnancies and no masses visualized in the remaining 20% of cases. These numbers can be applied on cases with heterotopic pregnancies, which mean that in 20% of cases the sonographic diagnosis of heterotopic pregnancy cannot be made; it also means that potentially the diagnosis can be made in 80% of cases with careful evaluation of the adnexa.

Suspicious adnexal mass can be investigated with Doppler ultrasound which improves sensitivity and specificity, color Doppler ultrasound may show a high velocity with low resistance, and resistance index  $< 0.40$  for an adnexal mass (Outside the ovary) is suspicious of an extra uterine trophoblastic tissue. In addition to these findings, a transvaginal ultrasound showing a bridge of myometrium separating a suspected ectopic pregnancy from an intrauterine pregnancy is suggestive of cornual ectopic pregnancy. Also the presence of a gestational sac seen separately by  $> 1$  cm from the most lateral edge of the uterine cavity with a thin myometrial layer surrounding the chorionic sac is suggestive of cornual ectopic pregnancy.

Any modality of treatment of the ectopic part of the heterotopic pregnancy must consider the viability of the intrauterine pregnancy.

The choice of surgical or medical treatment depends on the hemodynamic status of the patient and the expertise of the surgeon. Surgical treatment is optimal when the patient is in shock or pre-shock state and the physician has appropriate surgical training.

With the advances in the ability to make earlier diagnosis of ectopic pregnancy and improvements in microsurgical techniques, conservative surgery has replaced the standard laparotomy with radical surgery. Nowadays conservative surgical approach to unruptured ectopic pregnancy using minimally

invasive surgery has been advocated to preserve tubal function.

Laparoscopy has become the recommended approach in most cases, since it is safe and effective; its outcome is equivalent to those of laparotomy but with lower costs, shorter hospitalization, and quicker return to normal activity. It allows both radical and conservative procedures to be performed, and with training there is no evidence of increased complication rates.

Laparotomy is usually reserved for patients who are hemodynamically unstable, or patients with cornual or interstitial ectopic pregnancy. It is also a preferred method for surgeons inexperienced in laparoscopy and in patients where laparoscopic approach is difficult (e.g. presence adhesions and obesity).

Laparoscopy should be performed without the use of an intracervical uterine manipulator, with the verses needle inserted carefully into the abdomen to avoid perforating the gravid uterus.

Regardless of the surgical approach, the choice between salpingectomy or cornual resection depends on the location of pregnancy within the fallopian tube or its remnant. Generally, surgeons should perform salpingectomy for ampullary pregnancies and cornual resection for cornual pregnancies and they should use sutures<sup>(4)</sup> or staples<sup>(8)</sup> rather than electrocautery or intramyometrial injection of vasopressin to minimize risk of diminishing blood flow to the surviving intrauterine pregnancy, particularly during cornual resection.

Therapeutic treatments for heterotopic pregnancy include transvaginal injection of the unruptured ectopic pregnancy with potassium chloride,<sup>(9)</sup> potassium chloride with methotrexate<sup>(10)</sup> or hyper osmolar glucose.<sup>(11)</sup>

Since our experience in treating heterotopic pregnancy is limited, we favor the surgical approach described above, which can be performed quickly with short hospitalisation and with elimination of the risk of later ectopic rupture.

Medical treatment is best performed when the patient is clinically stable, compliant, and willing to be monitored over time in the clinic. When such a patient has restricted surgical access to the abdomen due to massive adhesions, we prefer administering a transvaginal injection of potassium chloride. One-third of intrauterine pregnancies accompanying ectopic pregnancy, miscarry in the first and second trimesters, also preterm delivery may occur, particularly when heterotopic pregnancy is accompanied by multiple gestations. Still, two-thirds of intrauterine pregnancies do survive to term.

## Conclusion

Heterotopic pregnancy, once thought to be an extremely rare phenomenon, is becoming more common as the overall incidence of ectopic pregnancies continues to increase.

The diagnosis of the potentially dangerous form of ectopic pregnancy is difficult and is often delayed. In patients with high risk factors for ectopic pregnancy rigorous sonographic examination of the adnexae and cul de sac must always be made even in the presence of an intrauterine pregnancy if the diagnosis is going to be made sonographically. Such investigation must employ high-resolution transvaginal ultrasound; Doppler ultrasound may also be helpful.

Currently there is insufficient evidence to recommend any single treatment modality, and the choice of surgical or medical treatment of heterotopic pregnancy depends upon the hemodynamic status of the patient and the expertise of the surgeon.

## References

1. **Reece E, Petrie R, Sirmans M, et al.** Combined intrauterine and extrauterine gestation: A review. *Am J Obstet Gynecol* 1983; 146: 323-330.
2. **Bello G, Schonholz D, Moshirpur J, et al.** Combined pregnancy: The Mount Sinai experience. *Obstet Gynecol Surv* 1986; 41: 603-613.
3. **Habana A, Dokras A, Giraldo JL, Jones EE.** Contemporary management options. *Am J Obstet Gynecol* 2000; 182(5): 1264-1270.
4. **Lau S, Tulandi T.** Conservative medical and surgical management of interstitial ectopic pregnancy. *Fer Ste* 1999; 72(2): 207-215.
5. **Speroff L, Glass RH, Kase NG.** The endocrinology of pregnancy. In: Mitchell C, editor. *Clinical gynecologic endocrinology and infertility*. 5<sup>th</sup> ed. Baltimore, MD: Williams and Wilkins; 1994: 251-289.
6. **Dor J, Seidman DS, Levran D, et al.** The incidence of combined intrauterine and extrauterine pregnancy after in vitro fertilization and embryo transfer. *Fer Ste* 1991; 55: 833-834.
7. **Dumesic DA, Damario MA, Session DR.** Interstitial heterotopic pregnancy in women conceiving by in vitro fertilization after bilateral salpingectomy. *Mayo Clinic Proc* 2001; 76(1): 90-92.
8. **Sherer DM, Scibetta JJ, Sanko SR.** Heterotopic quadruplet gestation with laparoscopic resection of ruptured interstitial pregnancy and subsequent successful outcome of triplets. *Am J Obstet Gynecol* 1995; 172(1): 216-217.
9. **Perez JA, Sadek MM, Savale M, Boyer P, Zorn JR.** Local medical treatment of interstitial pregnancy after in-vitro fertilization and embryo transfer (IVF-ET): Two case reports. *Hum Repro* 1993; 8(4): 631-634.
10. **Baker VL, Givens CR, Cadieux, MCM.** Transvaginal reduction of an interstitial heterotopic pregnancy with preservation of the intrauterine gestation. *Am J Obstet Gynecol* 1997; 176(6): 1384-1385.
11. **Strohmer H, Obruca A, Lehner R, et al.** Successful treatment of a heterotopic pregnancy by Sonographically guided instillation of hyperosmolar glucose. *Fer Ste* 1998; 69(1): 149-151.