# Spontaneous heterotopic pregnancy leading to intrauterine abortion and subsequent ruptured ectopic pregnancy with a βhCG of 125 mIU/ml: a case report

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**Summary**

A case of heterotopic pregnancy after spontaneous conception with abortion of the intrauterine pregnancy and subsequent rupture of the ectopic pregnancy is presented. A 34-year-old woman at five weeks of gestation presented with a ruptured ectopic pregnancy after spontaneous abortion of an intrauterine pregnancy with mIU/ml βhCG as low as 125 mIU/ml. Close monitoring of βhCG and careful ultrasound examination together with patient consultation are extremely important in the management of heterotopic pregnancy, especially in cases of diagnostic uncertainness.

*Key words:* Heterotopic pregnancy; βhCG; Spontaneous pregnancy; Combined ectopic pregnancy; Simultaneous intra- and extrauterine pregnancy.

## Introduction

The definition of heterotopic pregnancy is the simultaneous development of a gestation within the uterine cavity and a gestation outside the uterine cavity. In natural conception cycles it is a rare event occurring less than 1:30,000 pregnancies [1]. With assisted reproduction techniques (ART) this incidence rises up to between 1:300 and 1:500 [2, 3]. The etiology is obviously normal implantation of a fertilized ovum within the uterine cavity and an abnormal implantation of a fertilized uterus outside the uterine cavity.

In the general population the major risk factors for heterotopic pregnancy are the same as those for ectopic pregnancy. For women in an assisted reproductive program there are additional factors: a higher incidence of multiple ovulation, a higher incidence of tubal malformation and/or tubal damage, and technical factors in embryo transfer which may increase the risk for ectopic and heterotopic pregnancy [4].

The differential diagnosis in a patient with heterotopic pregnancy is a normal intrauterine pregnancy, a normal intrauterine pregnancy and a ruptured ovarian cyst, a corpus luteum, or an appendicitis.

The prognosis for the extrauterine fetus is very poor, having an estimated 90-95% mortality rate. The mortality rate for intrauterine pregnancy is approximately 35% [4].

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## Case Report

We present a case of a pregnancy after natural conception in a women who first visited our department at five weeks of gestation with a βhCG of 689 mIU/ml and an endometrial sac of 4.6 mm during ultrasound examination. Three days later she presented with bleeding per vaginam and a βhCG of 250 mIU/ml. During the following days the clinical signs and symptoms were of inevitable abortion, so an evacuation of retained products of conception (ERPC) was performed and the patient was discharged the next day. The histological examination confirmed the diagnosis of abortion.

Three days after the ERPC she returned complaining of severe lower abdominal pain. An ultrasound examination reported a mass of mixed echotexture measuring 23 x 19 mm next to the left ovary, together with a large amount of free fluid and clots in the pouch of Douglas. The blood βhCG levels were only 125 mIU/ml at that time. Emergency laparotomy was performed and a left salpingo-oophorectomy was carried out. The histological report confirmed the presence of an ectopic pregnancy inside the left fallopian tube.

## Discussion

This case is an extremely rare situation in which natural conception led to heterotopic pregnancy. In addition, a ruptured ectopic pregnancy took place with very low βhCG blood levels. This raises many concerns about extra-cautionary measures that need to be taken in cases of intrauterine pregnancy abortion, as well as the importance of performing a very precise ultrasound pelvic scan.

On the other hand the βhCG blood levels should probably be measured on at least two consecutive occasions to detect any falling pattern, and also to closely observe the patient, even with low levels of βhCG, until the level is undetectable. It should always be kept in mind that these values may be misleading in heterotopic pregnan-

cies; subnormal hormone production from ectopic gestation may be masked by the higher placental production from intrauterine pregnancy [5]. In this case the patient should be consulted and remain close to medical care.

The diagnosis of heterotopic pregnancy is often difficult as the symptomatology can often be misleading. Maternal and intrauterine fetal prognosis depends on early diagnosis which should be made, if possible, prior to termination of the extra-uterine pregnancy. Lower quadrant pain is the most common clinical sign of emergency patients admitted to hospital because of acute abdominal pain [6]. Cases have been reported, where the clinical signs were minimal i.e., right lower quadrant pain with mild cramping. In these cases heterotopic pregnancy was not suspected [7, 8].

## Conclusion

During the last decade a remarkable increase in the rate of heterotopic pregnancy has been observed, especially with the use of ART e.g., the induction of ovulation, in vitro fertilization and embryo transfers in infertile women [9]. Heterotopic pregnancy is rare in spontaneous conception.

Nonetheless we should always be cautious about this rare, but life-threatening condition. Diagnosis is based on a precise ultrasound examination and serial βhCG measurements. In our patient, even with low βhCG levels, there was a risk of an emergency situation. As a matter of fact we should have kept the patient under close observation even after hospital discharge i.e., advised her to be aware of any clinical signs and symptoms, and to stay in close proximity of medical care.

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