



# Spontaneous Heterotopic Pregnancy Causing Tubal Rupture in a Patient with Intrauterine Device in-situ

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## ÖZET

*Rahim içi araç kullanan bir hastada tubal rüptüre neden olan spontan heterotopik gebelik*

Spontan heterotopik gebelik nadir görülen ancak yaşamı tehdit eden bir durumdur. Bu çalışmada 27 yaşında acil jinekoloji kliniğimize akut karın ağrısı nedeniyle başvuran bir hasta sunuldu. Yapılan transvajinal ultrasonda biri intrauterin (8 hafta 3 gün), diğeri sol adneksiyal alanda (7 hafta 3 gün) olmak üzere 2 tane canlı embriyo ve normal pozisyonda olan rahim içi araç görüldü. Laparotomi ile sol salpenjektomi yapıldı ve postoperatif 5. saatte intrauterin gebeliğin spontan abort ettiği görüldü. Heterotopik gebelik ve rahim içi araç ilişkisi kısa bir literatür özeti ile birlikte sunuldu.

**Anahtar kelimeler:** Heterotopik gebelik, IUA, spontan

## ABSTRACT

*Spontaneous heterotopic pregnancy causing tubal rupture in a patient with intrauterine device in-situ*

spontaneous heterotopic pregnancy (HP) is a rare but life threatening condition. A case of 27 years old patient who admitted to our emergency gynecology clinic for acute abdominal pain is presented. The transvaginal ultrasound revealed two embryos with cardiac activity; one intrauterine (8 week and 3 day), and the other one in the left adnexa (7 week and 3 day) and an intrauterine device (IUD) in situ. The patient had left salpingectomy with laparotomy and after the fifth hour of operation she had spontaneous abortion of intrauterine pregnancy. We reported a case of heterotopic pregnancy and relation with IUD and a brief review of the literature.

**Key words:** Heterotopic pregnancy, IUD, spontaneous

**Bakırköy Tıp Dergisi 2014;10:121-123**

## INTRODUCTION

Heterotopic pregnancy is described as presence of intrauterine and extrauterine pregnancy at the same time. The incidence is 1/30,000 of all spontaneous pregnancies, with accelerating use of ovulation induction agents and assisted reproductive techniques (ART), the incidence has increased from %1.9 to 2.9 (1). It was first defined by Duverney, in the year 1708, as an autopsy finding (2). The diagnosis of HP needs attention in patient with risk factors such as previous ectopic pregnancy, history of pelvic inflammatory disease, use of ARTs and pelvic surgeries. The relation between HP and IUD was

first described by Clausen et al, in modern English literature (3).

## CASE REPORT

A 27 years old patient was admitted to our emergency gynecology clinic for abdominal pain for two days. She had two normal vaginal birth and no history of surgery. She was using IUD for four years. Her last menses was about two months ago and She had no admission to a hospital about her menstrual delay. The vital signs of the patient were unstable with tachycardia and decreasing blood pressure (110 beats per min. and 90/50 mmHg) and hemoglobin was 8 g/dL. In her pelvic examination she had severe tenderness in left adnexa and the strip of the IUD was seen by using speculum. There was guarding and rebound in her entire abdomen. The transvaginal ultrasound revealed two gestational sacs with living embryos one in the left adnexa with Crown-rump length

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Geliş tarihi / Date of receipt: 05 Kasım 2011 / November 05, 2011

Kabul tarihi / Date of acceptance: 30 Temmuz 2012 / July 30, 2012



**Figure 1:** Embryo with 7 week and 3 day of gestation seen in the left adnexa



**Figure 2:** Intrauterine device on the left side and embryo with 8 week and 3 day of gestation in the uterine cavity on the right side.

(CRL): 10.8 mm (7 week and 3day) (Figure 1) and the other one in the uterine cavity with CRL 17.5 mm (8 week and 3day). There was free abdominal fluid in the pouch of Douglas (POD) and the IUD was in the uterine cavity in normal

Position (Figure 2). An urgent laparoscopy was performed because of acute abdomen. The exploration of the abdominal cavity showed that there was hemoperitoneum and organised mass of coagulum that limiting the range of vision. Thus laparotomy was performed subsequently. There were about 2000 cc of free blood and organised coagulum in the pelvic cavity and left fallopian tube was perforated and bleeding from the ampullary part. Left salpingectomy was performed and bleeding controlled. She received 1000 mL of fluid and 2 units of red blood cells. After the surgery progesterone supplement ordered for maintaining the intrauterine pregnancy. In her postoperative fifth hour she complaint about abdominal pain and vaginal bleeding. There was no active bleeding and transvaginal ultrasound revealed that endometrium was 12 mm, IUD was in the cavity but intrauterine pregnancy could not seen. The abortion material was seen in the perineum and send to pathology department. Curettage was performed for rest fetal material and she was discharged in her postoperative 4<sup>th</sup> day. The pathological diagnosis of the left salpingectomy was placental tissue and fetus with measure of 15 mm and the curettage material was degenerated corionic villus.

## DISCUSSION

The occurrence of HP is rare in spontaneous conception cycles but using ARTs for many infertile couples, the incidence of HP has unexpectedly increased. There is two theories about the etiology of HP in ART cycles. i) HP may occur due to retrograde motion of the embryo from the uterine cavity to the fallopian tube. ii) By using Clomiphene Citrate as an ovulation induction agent may disturb the oviductal peristalsis by alteration of the local P4/E2 ratio (4,5). According to our knowledge the common risk factors for HP are pelvic inflammatory disease, history of ectopic pregnancy and pelvic surgery (4,6). IUDs are not responsible for ectopic component of HP but the incidence of ectopic pregnancy increases when a pregnancy occurs during the use of an IUD for contraception (7). Early diagnosis of HP is often difficult because of the absence of clinical symptoms. The absence of vaginal bleeding is suggestive of HP rather than ectopic pregnancy alone (8). HP usually presents with abdominal pain, adnexal mass and peritoneal irritation but most patients with HP presents in the emergency department with symptoms of ruptured ectopic component such as fluid in the POD at transvaginal scan, low serum haemoglobin percentage and tenderness. Even in the presence of intrauterine pregnancy, transvaginal ultrasound assessment of the whole pelvis must be done for the diagnosis of HP. The diagnosis of heterotopic pregnancy is only 56% at 5-6 weeks (9).

Serum Beta hCG levels are considered to be unhelpful for diagnosis of HP, because the Beta hCG levels are often found to be normal or higher due to the presence of an intrauterine gestation (10).

The standard treatment for ectopic pregnancy is surgery by laparoscopy or laparotomy depending upon the condition of the patient. The goals of these methods include the minimization of blood loss, the preservation of fertility and the protection of a coexisting intrauterine pregnancy. Although it has been reported that laparotomy does not seem to interrupt intrauterine pregnancy, some authors have reported a 40% loss of viable fetuses (11,12). In a case series Louis-Sylvestre et al. had found laparoscopy was useful for the early diagnosis of heterotopic pregnancy and had good postoperative surgical outcomes in their 13 cases of heterotopic pregnancy (12).

The other treatment options which depend on the vital conditions of the patient and ongoing pregnancy are medical or expectant approaches. Methotrexate is a useful option as a conservative method but not an option in the treatment of ongoing intrauterine pregnancy and if the Beta hCG

level is >5000 mIU/ml, it must be considered as a contraindication for medical treatment (2). So far, few cases of expectant management of heterotopic pregnancy is also reported (11). In our case we discussed about removing or leaving the IUD for maintaining the early intrauterine pregnancy with the family and we left

the IUD in situ according to their decision. In a recent study by Moschos et al. 42 women with early pregnancies with IUD were evaluated and concluded that %75 of intrauterine pregnancies resulted in term deliveries and 50% of the term pregnancies had successful IUD removals (13). The complications such as septic abortion, preterm delivery and bleeding about the leaving the IUD have to be considered and discussed with the family.

In high-risk patients, especially those who have conceived with ART, a routine ultrasound scanning for ectopic or heterotopic pregnancy at 4 and 6 weeks after transfer of embryos is recommended. The risk of heterotopic pregnancies from spontaneous conception is also rising. Hence the women in reproductive age with risk factors for pelvic inflammatory disease, using IUD for contraception, history of ectopic or heterotopic pregnancy and pelvic surgery have to visit a gynecologist for routine gynecological pelvic examination and ultrasound scanning. Detection of an intrauterine pregnancy does not exclude the possibility of the simultaneous existence of an ectopic pregnancy, a complete review of the whole pelvis including adnexa should be done to rule out the presence of a heterotopic pregnancy.

### Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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