



Heterotopic pregnancy, a hidden hazard of intrauterine pregnancy

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ABSTRACT

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Heterotopic pregnancy (HP) is the occurrence of an extrauterine pregnancy simultaneously with an intrauterine pregnancy. It is a rare event, with an incidence of 1:3.889. Complications of extrauterine pregnancy range from acute abdominal pain to hemorrhagic shock and other life-threatening consequences. Herein, we report the case of a gravida 1 para 0 woman with heterotopic pregnancy who underwent right salpingectomy.

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1. Introduction

Heterotopic pregnancy (HP) was firstly defined by Duverney in 1708 following an autopsy finding (DeVoe and Pratt, 1948). Long believed to be around 1:30.000, the incidence of HP is currently approximately 1:3.889 (Seeber and Barnhart, 2006). The general consensus is that although it is a rare situation in the general population, its frequency is higher in pregnancies resulting from assisted reproductive techniques. The presence of pelvic inflammatory disease, a history of tubal surgery, and the use of intrauterine contraceptive devices (IUD) are risk factors as well. A suspicion of HP, however, cannot be taken easily, even in cases without any risk factor, in the presence of intrauterine pregnancy and nonspecific manifestations such as abdominal pain and bleeding (Jerrard et al., 1992).

2. Case report

A 29-year-old, gravid 1 para 0 patient attended our emergency service with sudden-onset, severe abdominal pain, nausea, fatigue, and vaginal bleeding. She had a pregnancy of eight weeks and no significant medical or surgical history, and no risk factors for ectopic pregnancy were detected.

On physical examination, she was hypothermic, her blood pressure was 80/50 mmHg, and her heartbeat was 100/min. There was marked tenderness in the right side. A transvaginal ultrasound revealed an eight-week intrauterine gestational sac with positive fetal heartbeat and an ectopic gestational sac in the ampullary region of the right fallopian tube. In addition, free fluid in all parts of the lower abdomen was observed on a transabdominal ultrasound (USG) (Fig. 1). The laboratory results were hemoglobin: 8 g/dl and hematocrit: 23.4%.

An emergency laparotomy was performed. After aspirating about 600 cc hemorrhage, the uterus was found to be compatible with eight weeks of gestation, and there was a ruptured ectopic pregnancy in the right ampullary region (Fig. 2). A right salpingectomy was performed. In the postoperative period, the patient was given 100 mg progesterone twice a day through 12 weeks of gestation to support her ongoing pregnancy. She was discharged on the fourth postoperative day. Histological examination of the excised tissues was compatible with an ectopic pregnancy. The patient's pregnancy resulted in the spontaneous vaginal delivery of a girl weighing 3.050 kg.



Fig. 1. Transvaginal ultrasound showing one intrauterine and one right tubal gestational sac and free fluid in the pelvic cavity. **Thick arrow:** Intruterin sac; **thin arrow:** Right tubal gestational sac and **star:** Free fluid in the pelvic cavity



Fig. 2. Uterus and ruptured, edematous right Fallopian tube in the background of diffuse intra-abdominal hemorrhage.

3. Discussion

HP is a term used to describe the simultaneous presence of an intrauterine and an ectopic pregnancy, most often in the fallopian tubes, and following in the cervix or the ovaries. (Shojai et al., 2007). Delayed diagnosis may lead to an increase in maternal morbidity and even death (Jerrard et al., 1992). Pregnancies with two yolk sacs in the same tube or one in each tube at the same time as the intrauterine pregnancy, known as triple HP, have also been reported (Jeong et al., 2009).

Imaging in the earliest stages can be misleading, because it does not reflect the extrauterine gestational sac. While HP is known to be definitely rare among spontaneous pregnancies in recent years, its incidence has reached 0.9–2.9%, with the increase in assisted reproductive technologies (ART) (Govindarajan and Rajan, 2008).

Multiple follicles caused by ovulation-inducing agents such as clomiphene citrate (CC) and the pressure exerted during embryo transfer interventions might be responsible for such an increase (Bello et al., 1986). In addition, disruption of the oviductal peristalsis following the hormonal changes

caused by CC may lead to ectopic embryo implantation (Rizk et al., 1991). In the present case, there were no risk factors such as ART, pelvic inflammatory disease, or IUD.

HP can be identified by transvaginal ultrasound in a 41–84% of cases (Marcus et al., 1995). The finding may be accompanied by findings of pelvic, especially vesicouterine, cystic formations or fluid–tissue complex masses and intrauterine pregnancy. HP can be diagnosed in the 5th to 8th week of pregnancy in 70% of cases (Tal et al., 1996). A transabdominal ultrasound might sometimes prove useful observing the adnexa, the entire pelvic cavity, and the rest of the abdomen. The specificity of ultrasonography has been calculated as 73.7%, and its positive predictive value as 89.8% (Chama et al., 2001). The gold standard for diagnosis remains the presence of fetal cardiac activity, both within and outside the uterus. Simultaneous intrauterine and ectopic fetal cardiac activity were present in our case as well. ART-related corpus luteum or ovarian cysts can mask an ectopic pregnancy during diagnosis (Hassiakos et al., 2002). Serial measurements of beta-HCG are not likely to be very useful in diagnosing HP, as the hormones released by a healthy placenta in an intrauterine pregnancy are likely to mask the low level originating in the extrauterine one, which impairs the monitoring of serum HCG. In addition, clinical symptoms might be unhelpful for diagnosis. In a retrospective examination of 66 cases of HP, Reece et al. (1983) found the most frequent symptoms and signs to be abdominal pain, the presence of an adnexal mass, and peritoneal irritation. The first suggestion of the diagnosis in our case was also abdominal pain and rebound tenderness.

HP can be treated by surgical or medical. If the fallopian tube with the ectopic pregnancy is found to be intact, potassium chloride can be applied locally. Methotrexate, RU486, or prostaglandins, however, cannot be used, because of the likely harm to the live intrauterine pregnancy (Scheiber and Cedars, 1999). Surgery may be performed by laparoscopy or laparotomy, and it is indicated in cases with rupture ectopic pregnancy or hemoperitoneum. In our patient, a laparotomy with salpingectomy was performed due to massive intra-abdominal hemorrhage. The aims of the surgical intervention should be to maintain the intrauterine live pregnancy and preserve fertility, as well as to avoid maternal morbidity and death. Clausen (1996); reported that there was no substantial difference between the results of conservative and radical surgery. Even bilateral salpingectomy does not seem to definitely rule out an HP. HP following bilateral salpingectomy may even become more dangerous, as in such cases, the diagnosis is likely to be missed for lack of suspicion of HP. Intravenous fluids should be administered without delay, in order to maintain of the intrauterine pregnancy and improve its fetal prognosis. The mother's hemodynamic stability must be ensured through blood transfusion as needed. Early and efficient management allows delivery at the term of the intrauterine pregnancy to be achieved in up to 75% of cases. In the aftermath of HP, the rate of preterm deliveries is 16% (Reece et al., 1983), and 9% of cases result in stillbirth or spontaneous abortion.

The most important factor remains the early diagnosis of HP to allow proper management. For this reason, the risk of a simultaneous extrauterine pregnancy should be kept in mind by the clinician, even in unremarkable intrauterine pregnancies.

REFERENCES

- Bello, G.V., Schonholz, D., Moshirpur, J., Jeng, D.J., Berkowitz, R.L., 1986. Combined pregnancy. The Mount Sinai experience. *Obstet. Gynecol. Surg.* 41, 603-613.
- Chama, C.M., Obed, J.Y., Ekanem, I.A., 2001. Transvaginal ultrasounds scan versus laparoscopy in the diagnosis of suspected ectopic pregnancy. *J. Obstet. Gynecol.* 21, 184-186.
- Clausen, I., 1996. Conservative versus radical surgery for tubal pregnancy: A review. *Acta. Obstet. Gynecol. Scand.* 75, 8-12.
- DeVoe, R.E., Pratt, J.H., 1948. Simultaneous intrauterine and extrauterine pregnancy. *Am. J. Obstet. Gynecol.* 56, 1119.
- Govindarajan, M.J., Rajan, R., 2008. Heterotopic pregnancy in natural conception. *J. Hum. Reprod. Sci.* 1, 37.
- Hassiakos, D., Bakas, P., Pistofidis, G., Creatsas, G., 2002. Heterotopic pregnancy at 16 weeks of gestation after in-vitro fertilization and embryo transfer. *Arch. Gynecol. Obstet.* 266, 124-125.
- Jeong, H., Park, I., Yoon, S., Lee, N., Kim, H., Park, S., 2009. Heterotopic triplet pregnancy with bilateral tubal and intrauterine pregnancy after spontaneous conception. *Eur. J. Obstet. Gynecol.* 142, 161-162.
- Jerrard, D., Tso, E., Salik, R., Barish, R.A., 1992. Unsuspected heterotopic pregnancy in a woman without risk factors. *Am. J. Emer. Med.* 10, 58-60 .
- Marcus, S.F., Macnamee, M., Brinsden, P., 1995. Heterotopic pregnancies after in vitro fertilization and embryo transfer. *Hum. Reprod.* 10, 1232-1236.
- Reece, E.A., Petrie, R.H., Sirmans, M.F., Finster, M., Todd, W.D., 1983. Combined intrauterine and extrauterine gestations: A review. *Am. J. Obstet. Gynecol.* 146, 323-330.
- Rizk, B., Tan, S.L., Morcos, S., Riddle, A., Brinsden, P., Mason, B.A., Edwards, R.G., 1991. 1991. Heterotopic pregnancies after in vitro fertilization and embryo transfer. *Am. J. Obstet. Gynecol.* 164, 161.
- Scheiber, M.D., Cedars, M.I., 1999. Successful non-surgical management of a heterotopic abdominal pregnancy following embryo transfer with cryopreserve-thawed embryos. *Hum. Reprod.* 14, 1375-1377.
- Seeber, B. E., Barnhart, K.T., 2006. Suspected ectopic pregnancy. *Obstet Gynecol.* 107, 399.
- Shojai, R., Chaumoitre, K., Chau, C., Panuel, M., Boubli, L., d'Ercole, C., 2007. Advanced combined abdominal and intrauterine pregnancy: A case report. *Fetal Diagn Ther.* 22, 12.
- Tal, J., Haddad, S., Gordon, N., Timor-Tritsch, I., 1996. Heterotopic pregnancy after ovulation induction and assisted reproductive technologies: A literature review from 1971 to 1993. *Fertil. Steril.* 66, 1-12.