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Heterotopic pregnancy in HIV women

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Abstract

Heterotopic pregnancy occurs when intrauterine and ectopic pregnancy are concomitant; overall rate rises from 1/30.000 to 1.5/1000 in assisted reproductive technology pregnancies. HIV (human immunodeficiency virus) patients are at increased risk of heterotopic pregnancies due to the greater frequency of assisted reproductive technology and pelvic inflammatory disease. We report the first case of heterotopic pregnancy in HIV woman.

Keywords

HIV, heterotopic pregnancy

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Introduction

Heterotopic pregnancy (HP), defined as concomitant intrauterine and ectopic pregnancy, is a rare event. The overall rate of heterotopic pregnancies is about 1/30.000 in spontaneous pregnancies, while the rate in pregnancy due to assisted reproduction is 0.15%.[1,2] Multiple factors may lead to the development of HP after assisted reproduction. Tubal abnormalities including scarring that may prevent the embryos' return to the uterine cavity after the embryo transfer (ET), and the multiple number of embryos that may be transferred every cycle, represent the most significant factors. Other causes that may lead to embryo implantation in the fallopian tube include the misplacement of catheter tip, a wrong pressure used to inject embryos, and endometrial bleeding due to traumatic ET procedure.[3,4]

Risk factors associated with heterotopic pregnancies are the same as ectopic ones: previous ectopic pregnancy, tubal or uterine abnormality, infertility treatment, previous pelvic inflammatory disease (PID), and previous tubal surgery.[5] In HIV patients, several risk factors may be present. In fact, HIV is a sexually transmitted disease (STD) and consequently is a risk factor for PID;[6] moreover, recently, also HIV serodiscordant couples where the woman is positive had access to assisted reproductive programmes. Therefore, HIV infection could increase the risk of HP. We report the first case of HP occurred in a HIV-positive woman.

Case

A 30-year-old woman, gravida 3 para 1 with a previous spontaneous miscarriage, presented to our obstetric department, demanding legal abortion. Her past medical history included HIV seropositivity, discovered 10 years before during her previous pregnancy. The patient had begun highly active antiretroviral therapy (HAART) since the HIV diagnosis, with any manifestations HIV correlated. At the moment of our attention, her CD4 count was 250/mm^3 and HIV-RNA was lower than 37 copies/mL. During her first obstetric visit, ultrasound evaluation confirmed the presence of a viable pregnancy in utero. The embryo had a crown–rump length (CRL) of 1.6 cm, corresponding to 8 weeks, according to last menstrual period; her surgery was scheduled for the following week.

Five days after this first obstetric examination, patient arrived to our emergency department with acute symptomatology: she had diffuse abdominal pain, and uterus and adnexal regions were aching at the mobilization; copious vaginal discharges, but not vaginal bleeding, were observed. Transvaginal ultrasonography confirmed again the gestational sac containing the yolk sac and a fetal pole of 1.8 cm in CRL and evidenced an irregular adnexal mass of 65 × 60 mm^2 with heterogeneous echogenicity near the left ovary; the right ovary was regular and corpus luteum was visible. Rectal temperature was 37.2°C and temperature at arm-pit was 36.8°C.

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White blood cell count was 7.03/mm^3. Patient was hospitalized in our unit with the diagnosis of suspect PID or tubo-ovarian abscess (TOA) and begun antibiotic therapy with clindamycin 600 mg × 3 times in a day. During shelter, patient underwent legal abortion and histological analysis confirmed the presence of intrauterine pregnancy. The successive ultrasound examination evidenced a reduction in dimension of adnexal mass (22 × 23 mm^2), which appeared irregular and less strained, suggesting the diagnosis of TOA evidenced also by a positive response to therapy. Six days after the beginning of antibiotic therapy, the patient was dismissed with a diagnosis of TOA, according to the remission of painful symptomatology after therapy.

One week after her discharge, the patient presented again to our emergency department complaining of abdominal pain associated to a lipotimic episode. Physical examination showed tenderness to palpation, with a positive Blumberg sign; vital signs were stable. Gynaecological examination evidenced pain at the uterus mobilization and revealed the presence of soft and aching tumefaction in the Douglas cavity. Ultrasound scan showed a conspicuous amount of free fluid around the uterus and mainly concentrated in the Douglas space. No adnexal mass was found. According to clinical and laboratories values (reduction in haemoglobin from 7.8 mg/dL, at the time of previous hospital discharge, to 6.8 mg/dL), she was transferred to the operatory room to perform an explorative laparoscopy. The laparoscopy demonstrated a normal-sized uterus and normal ovaries. The ampulla and fimbriated end of the left fallopian tube were markedly distended and bleeding; the right fallopian tube was normal. Left salpingectomy was performed; estimated blood loss was 700 mL, therefore two units of packed red blood cells were transfused to correct anaemia. The left fallopian tube was submitted to the pathology department and histological analysis confirmed the diagnosis of tubal pregnancy.

The postoperative course was uneventful, and the patient was discharged in a stable condition on Day 3 after surgery.

Discussion

HP is defined as concomitant intrauterine and ectopic pregnancies. This event is extremely rare and its rarity can compromise the possibility of diagnosis. However, in the presence of some particular patients, physicians should consider the possibility of this clinical evidence. We know that ectopic pregnancy is a major cause of morbidity and mortality in reproductive age women, accounting for 4.9% of pregnancy-related deaths in developed countries and up to 10% in the first trimester of gestation.[7–9] Higher rates of ectopic pregnancy have been reported in HIV-positive women than in uninfected women, problably due to associated STDs.[10] Genital tract infections such as *Neisseria gonorrhoeae, Chlamydia trachomatis* and *Trichomonas vaginalis* infections have been reported to be more common in women with HIV. In a cohort of 1215 women, of which 238 experienced seroconversion to HIV, there was a higher incidence of genital ulcer disease (genital herpes, syphilis, *Chlamydia trachomatis*; OR = 2.8), gonorrhoea (OR = 1.6) and trichomoniasis (OR = 1.3) among HIV seropositive women versus HIV seronegative women.[11] As a consequence, PID has a higher prevalence in HIV patients: even HIV women with acute PID more often fail medical therapy and require changes in it or surgical intervention; in addition, HIV infection prolongs hospitalization in women with severe salpingitis.[12] Also, the prevalence of TOA is higher in seropositive women than in seronegative ones (OR = 2.8), and this risk increases in a stepwise fashion with the decreasing CD4 cell counts.[13]

Hence, when an HIV patient presents to an emergency department complaining of acute abdominal pain, we have to suspect a PID, or a possible ectopic pregnancy or heterotopic one if the woman is pregnant. In our patient, the diagnosis of PID could be suggested by some clinical and laboratory criteria. Several studies evidence that PID in HIV-positive women is characterized by low levels of white blood cell and lymphocytes count, absence of fever at admission, and high prevalence of TOAs.[13–15] All these elements were found in our patient when she presented to our emergency department, and the suspect of PID was confirmed by clinical response to antimicrobial therapy. In fact, on Day 6, after shelter, we observed the relief of the symptoms associated to normalization of laboratory findings. White blood cell count changed from 7.3/mm^3 at enrolment to 5.8/mm^3 on Day 6 of therapy. The adnexal mass was smaller compared to dimensions at shelter (from 65.0 × 60.0 mm^2 to 22.0 × 23.0 mm^2). All these data were according to several studies that compare clinical course of PID in women infected and not infected by immunodeficiency virus.[13–15] These authors evidence a similar response to therapy in HIV-infected women and a symptomatical improvement in 2–4 days.

In conclusion, we report the first case of HP occurred spontaneously in a HIV-positive woman. This evidence can be important, suggesting a possible role of HIV infection in the clinical and laboratory's manifestations of ectopic pregnancy, particularly if it is associated with a concomitant intrauterine pregnancy. It also suggests that HIV-seropositive women represent a specific category in which is necessary suspecting an ectopic pregnancy in addition to PID in case of acute abdomen and even a HP when there are findings of an ongoing intrauterine pregnancy.

Declaration of conflicting interests

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Ethical approval

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Informed consent

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References

1. Clayton HB, Schieve L, Peterson HB, et al. Ectopic pregnancy risk with assisted reproductive technology procedures. *Obstet Gynecol* 2006; 107(3): 595–604.
2. Tal J, Haddad S, Gordon N, et al. Heterotopic pregnancy after ovulation induction and assisted reproductive technologies: a literature review from 1971 to 1993. *Fertil Steril* 1996; 66(1): 1–12.
3. Luo X, Lim CE, Huang C, et al. Heterotopic pregnancy following in vitro fertilization and embryo transfer: 12 cases report. *Arch Gynecol Obstet* 2009; 280(2): 325–329.
4. Perkins KM, Boulet SL, Kissin DM, et al. Risk of ectopic pregnancy associated with assisted reproductive technology in the United States, 2001–2011. *Obstet Gynecol* 2015; 125(1): 70–78.
5. Refaat B, Dalton E and Ledger WL. Ectopic pregnancy secondary to in vitro fertilisation-embryo transfer: pathogenic mechanisms and management strategies. *Reprod Biol Endocrinol* 2015; 13: 30.
6. Burnham RC, Gottlieb SL and Paavonen J. Pelvic inflammatory disease. *N Engl J Med* 2015; 372(21): 2039–2048.
7. Khan KS, Wojdyla D, Say L, et al. WHO analysis of causes of maternal death: a systematic review. *Lancet* 2006; 367(9516): 1066–1074.
8. Centers for Disease Control and Prevention. Ectopic pregnancy – United States, 1990–1992. *MMWR Morb Mortal Wkly Rep* 1995; 44: 46–48.
9. Li C, Zhao WH, Zhu Q, et al. Risk factors for ectopic pregnancy: a multi-center case-control study. *BMC Pregnancy Childbirth* 2015; 15: 187.
10. McIntyre J. *HIV in pregnancy: a review (WHO/RHT/98.24 and UNAIDS/98.44)*, 1998, http://www.unaids.org/sites/default/files/media_asset/jc151-hiv-in-pregnancy_en_1.pdf
11. McClelland RS, Lavreys L, Katingima C, et al. Contribution of HIV-1 infection to acquisition of sexually transmitted disease: a 10-year prospective study. *J Infect Dis* 2005; 191(3): 333–338.
12. Mugo NR, Kiehlbauch JA, Nguti R, et al. Effect of human immunodeficiency virus-1 infection on treatment outcome of acute salpingitis. *Obstet Gynecol* 2006; 107(4): 807–812.
13. Cohen CR, Sinei S, Reilly M, et al. Effect of human immunodeficiency virus type 1 infection upon acute salpingitis: a laparoscopic study. *J Infect Dis* 1998; 178(5): 1352–1358.
14. Irwin KL, Moorman AC, O'Sullivan MJ, et al. Influence of human immunodeficiency virus infection on pelvic inflammatory disease. *Obstet Gynecol* 2000; 95: 525–534.
15. Barbosa C, Milagros M, Brockmann S, et al. Pelvic inflammatory disease and human immunodeficiency virus infection. *Obstet Gynecol* 1997; 89: 65–70.