

# Heterotopic cervical pregnancy management after a high-complexity assisted reproduction procedure

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## ABSTRACT

Heterotopic cervical pregnancies with a viable intra-uterine pregnancy are rare, the conservative and prudent management of these cases should be focused on the selective reduction of cervical pregnancies in order to maintain eutopic pregnancy. This paper reports the first case in Ecuador of a heterotopic cervical pregnancy after ICSI procedure and its proper management by ultrasound-guided curettage, allowing the normal development as an intrauterine pregnancy.

**Keywords:** Heterotopic cervical pregnancy, curettage, IVF, ICSI.

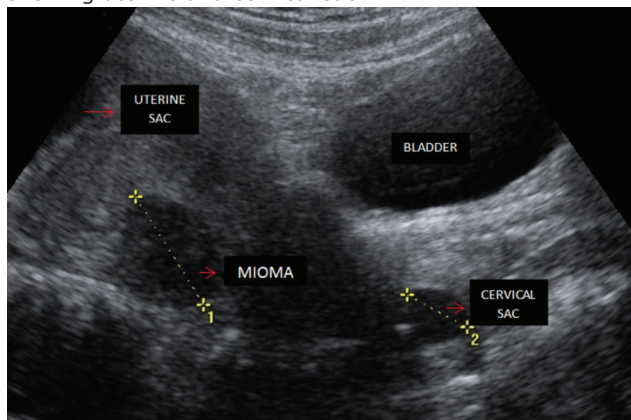
## CASE DESCRIPTION

A 35 year-old woman, weighing 56 kg; height 165 cm, with secondary infertility, was submitted to a left hydrosalpinx salpingectomy by laparoscopic procedure, and was later submitted to a high complexity assisted reproduction procedure.

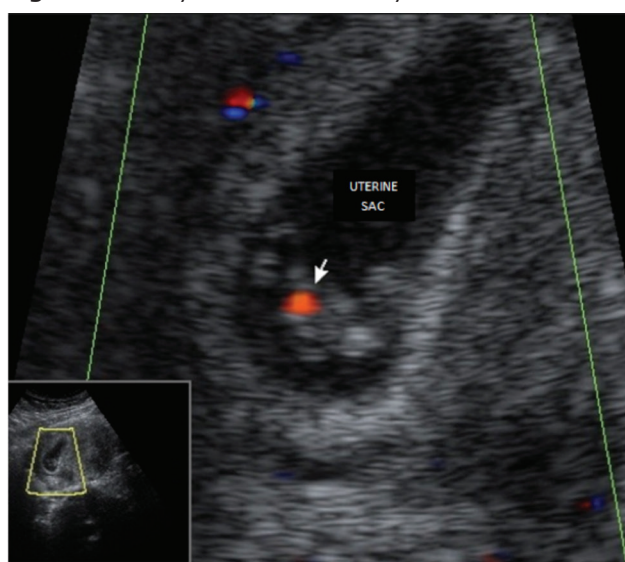
The stimulation protocol consisted of GnRH agonist with 2700 IU rFSH and a final dose of 10,000 IU hCG. Follicular aspiration was performed on day 12 of the cycle, recruiting 12 oocytes. We proceeded to an in vitro fertilization by intracytoplasmic sperm injection (ICSI). The transfer of two-day cleaved three embryos was performed under ultrasonography. The luteal phase support consisted of 800 mg of vaginal progesterone. At 12 days after the embryo transfer, hCG levels were 810 IU/ml, increasing to 6125 IU/ml four days later.

Transvaginal ultrasound was performed 27 days after the embryo transfer, confirming a single gestational sac of six weeks and two days in the uterine cavity. Considering the high hCG levels, we suspected of a multiple pregnancy and performed another transvaginal ultrasound one week after, confirming multiple cervix-endometrial pregnancy. Figures 1, 2 and 3 show the evaluation by ultrasound.

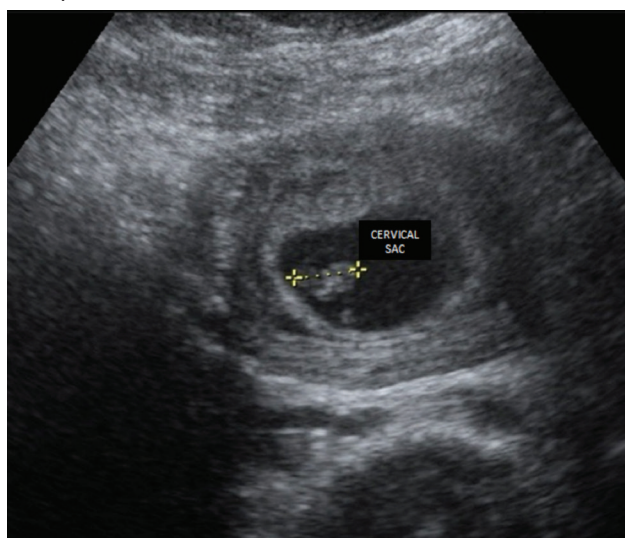
**Figure 1.** Transvaginal two-dimensional ultrasonography showing uterine and cervical sac



**Figure 2.** Embryo with heart activity located in the uterus



**Figure 3.** Cross-section showing the location of the pregnancy inside the cervix



The day after diagnosis, we performed ultrasound-guided cervical pregnancy exeresis under general anesthesia with a full bladder and conventional cervical curettage with normal uterine pregnancy evolution without complications. The pathology evaluation confirmed the presence of POC (Products of Conception).

Uterine pregnancy development was confirmed during the gestation period, obtaining a normal female baby at 39 weeks by segmental caesarean, weighing 3300 g.

## DISCUSSION

Heterotopic cervical pregnancies are rare, but their incidence is increasing due to in vitro fertilization treatments, this may be the result of factors related to the procedure, such as cervix trauma or embryo reflux in the cervix during transfer (Chen *et al.*, 2001).

Heterotopic pregnancy diagnosis is achieved at an early stage by transvaginal ultrasound, at least in IVF pregnancies, due to increased monitoring (Chen *et al.*, 2001; Jozwiak *et al.*, 2003).

In this case, the presence of heterotopic cervix pregnancy was not detected during the first ultrasound evaluation (6 weeks and 2 days), seeing only the uterine pregnancy. Twin pregnancy was suspected due to high hCG levels; therefore, close monitoring was performed, confirming cervix pregnancy at 7 weeks and three days.

Heterotopic cervix pregnancy treatment is performed to try and preserve uterine pregnancy, evacuating the entire cervix pregnancy and avoiding possible bleeding and infection. However, considering the vascularity and the lack of muscle tissue in the cervix region, a catastrophic bleeding may happen and a hysterectomy may be required to save the patients' life (Chen *et al.*, 2001).

In this case it was possible to remove the cervix pregnancy by curettage under ultrasound guidance, without complications. Cervical cerclage was not needed, enabling a term pregnancy without problems.

In Latin America, there are 33 cases of cervix pregnancy published between 1982 and 2002, according to Briceño (2002), with two other cases published between 2005-2015 (Troncoso *et al.*, 2005; Alanis-Fuentes *et al.*, 2015). In Ecuador, the first report of a cervix pregnancy (Rodríguez Espinoza *et al.*, 1995) is from 1995, then six more cases (Morales Zambrano & Nagua Blanca, 2014) were added. The latter report does not specify the conception type or the treatment followed in each case.

We did not find heterotopic cervix pregnancy reports after assisted reproduction treatment in Latin America. So this would be, at least in Ecuador, the first one.

## CONFLICT OF INTERESTS

No conflict of interest have been declared.

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