

# Successful management of post-*in-vitro* fertilization cervical heterotopic pregnancy

## ABSTRACT

A case of post-*in-vitro* fertilization (IVF) cervical and intrauterine heterotopic pregnancy with cardiac activity in both embryos is presented. It was diagnosed in the 7<sup>th</sup> week of gestation by ultrasonography and cervical pregnancy was treated conservatively with intrathoracic administration of potassium chloride under transvaginal ultrasound guidance with regression of trophoblastic tissue. The intrauterine pregnancy continued and cesarean section was performed in the 31<sup>st</sup> week due to absent end diastolic umbilical artery fetal blood flow. A live male baby was delivered.

**KEY WORDS:** Cervical pregnancy, heterotopic pregnancy, *in vitro* fertilization, potassium chloride

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## INTRODUCTION

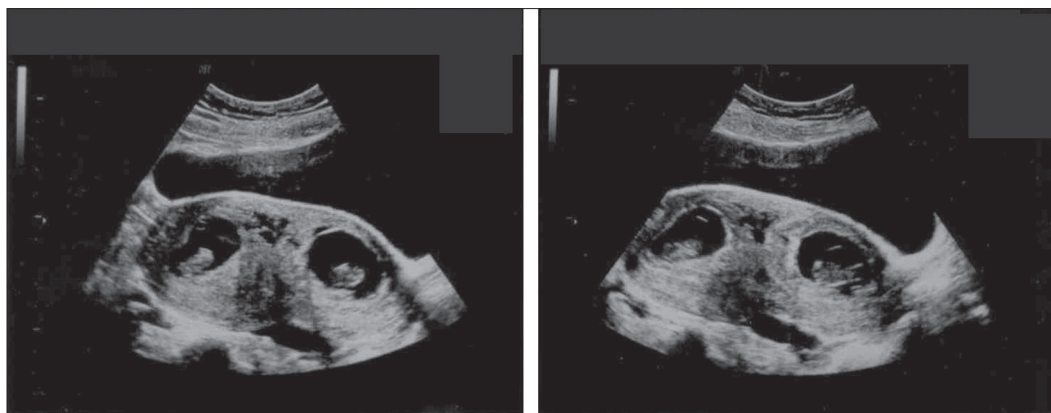
Cervical pregnancy represents a rare type of ectopic pregnancy and a cervical pregnancy in conjunction with viable intrauterine pregnancy is an even rarer event. In the past, cervical pregnancy was often associated with massive hemorrhage, which would result in hysterectomy. Improved ultrasound resolution and earlier detection of these pregnancies have led to the development of more conservative treatments that tend to limit morbidity and preserve fertility. Multiple conservative treatment options have been followed, like local injection of the ectopic sac locally with methotrexate, potassium chloride, vasopressin, mifepristone or hypertonic solution of sodium chloride.<sup>[1-3]</sup> Other treatment options include hypogastric and uterine artery embolization and hemostatic sutures followed by cervical canal curettage.<sup>[4-6]</sup> However, if the ectopic pregnancy has to be conserved with no adverse effect, judicious use of chemotherapeutic agents in the cervical pregnancy becomes of utmost importance.

This paper describes a case of post-*in vitro* fertilization (IVF) intrauterine and cervical heterotopic pregnancy treated successfully by local administration of potassium chloride under ultrasound guidance.

## CASE REPORT

Mrs. S, a 36-year-old patient underwent IVF for tubal factor infertility in January 2007, with beta

human chorionic gonadotropin (hCG) being positive on 20 Jan 2007. Early ultrasound showed a twin pregnancy, each containing a yolk sac and a live embryo. One sac was placed low towards the cervical canal while the other sac was placed towards the fundus, corresponding to 6 weeks of gestation. Early ultrasound suggested the possibility of a low implantation but did not confirm heterotopic pregnancy. On 4 Feb 2007, the patient was hospitalized in view of one episode of bleeding pervaginum. Keeping in mind the diagnosis of threatened abortion, she was managed conservatively and was discharged after 3 days. A repeat ultrasound at 7 weeks and 5 days of gestation confirmed the diagnosis of intrauterine and cervical heterotopic pregnancy [Figure 1]. The patient was readmitted on 19 Feb 2007. Fetal reduction of cervical pregnancy was performed under general anesthesia by injecting intrathoracic potassium chloride under transvaginal ultrasound guidance. The cardiac activity of the intrauterine fetus was found to be normal after the procedure was completed. The patient was discharged after 2 days. The rest of the pregnancy went uneventfully, except for mild vaginal spotting off and on. At 28 weeks of gestation, the patient was readmitted with asymmetrical intrauterine growth retardation. Fetal Doppler study on ultrasound showed reduced umbilical blood flows with adequate liquor and normal middle cerebral artery blood flows. She was serially monitored with biweekly ultrasound for fetal Doppler blood flow studies. At 31 weeks of gestation, a lower segment cesarean section was performed in



**Figure 1:** Intrauterine and cervical heterotropic pregnancy

view of absent end diastolic umbilical arterial fetal blood flow with reduced amniotic fluid index (amniotic fluid index 5). A male baby weighing 1.16 kg was born on 26 July 2007. Intraoperatively, the lower uterine segment showed presence of trophoblastic tissue and hemostatic sutures had to be taken in view of active bleeding from the anterior wall near the isthmus. The lower segment was ballooned up. Post-operative ultrasonography showed the presence of small amounts of trophoblastic tissue with low vascularity, suggestive of non-active tissue. Beta hCG levels performed immediately pre-operatively fell from 21,250 to 250 mIU/ml 4 days after lower segment caesarean section. The patient was discharged on the 6<sup>th</sup> post-operative day in satisfactory condition. The baby was doing fine post-natally.

## DISCUSSION

Cervical pregnancy represents a rare type of pregnancy, ranging in incidence between 1:1000 and 1:18,000 pregnancies. Ectopic twin pregnancy is quite uncommon in the cervix. Therapeutic approach can be radical or conservative. Hysterectomy is usually performed when hemorrhage occurs as an emergency situation. Most reports of successful conservative therapy describe the use of systemic chemotherapy in combination with cervical canal evacuation and use of hemostatic techniques. However, in order to continue survival of intrauterine gestation, local treatment of cervical pregnancy would be required. There has been one reported case of increasing trophoblastic tissue with bleeding requiring cesarean hysterectomy after local

potassium chloride injection into the ectopic sac.<sup>[7]</sup> In our case, there was regression of trophoblastic tissue after instillation of potassium chloride into the ectopic sac, which did not require further methotrexate. Thus, potassium chloride injection into the heterotropic gestational sac can be a viable option without the need of local or systemic chemotherapy.

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