

## A Case of a Ruptured Cornual *In vitro* Fertilization Pregnancy

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### Abstract

Cornual pregnancy is the most dangerous type of ectopic pregnancies but fortunately it occupies 2-4% of them. Its mortality rate is 6-7 times higher than that in all ectopic pregnancies. We reported a case of a uterine rupture in a 10 week cornual pregnancy.

A 40 years old woman, gravida 2, para 1 was admitted to our emergency service with the complaint of an acute onset abdominal pain of about 6 hours duration. She was known to be in her 10th weeks of gestation after *in-vitro* fertilization (IVF) and embryo transfer. On examination, a severe degree of pallor, with a pulse of 104 bpm and a blood pressure of 70/40 mm of Hg was detected. Pelvic ultrasonography showed a thickened endometrium and an empty uterine cavity. In the right cornual fetus with a crown-rump length of 10 weeks of gestation was detected with a positive heart rate. The abdomen was filled with blood and blood clots. The haemoglobin level was detected as 5.8 g/dl. An emergency laparotomy was performed because of hemodynamic instability.

Cornual pregnancies are very life threatening emergency conditions. Our case report demonstrates how a woman may come close to death while trying to have a child. To save lives of women generally immediate intervention instead of expectant management should be preferred as we did fortunately. So, more detailed examination by transvaginal ultrasonography guides the clinician for accurate diagnose before rupture occurs.

**Keywords:** Cornual pregnancy; *In vitro* fertilization; Ultrasonography

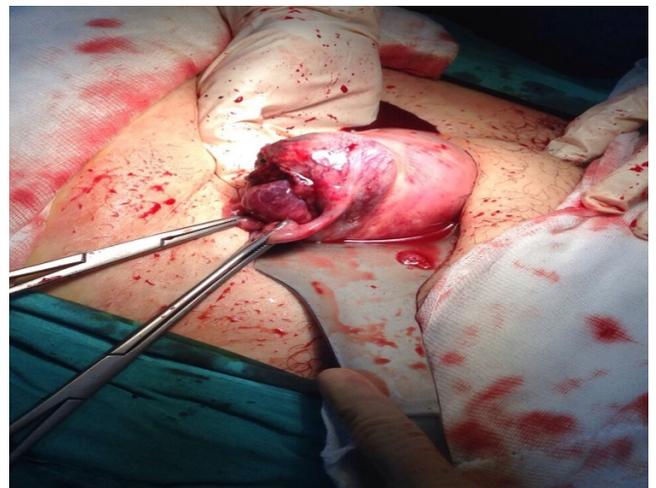
### Introduction

Cornual pregnancy is the most dangerous type of ectopic pregnancies but fortunately it occupies 2-4% of them. Its mortality rate is 6-7 times higher than that in all ectopic pregnancies [1]. Its diagnosis is confusing due to the fact that the foetus appears inside the uterus on ultrasound scanning. We reported a case of a uterine rupture in a 10 week cornual pregnancy.

### Case Report

A 40 years old woman, gravida 2, para 1 was admitted to our emergency service with the complaint of an acute onset abdominal pain of about 6 hours duration. She had a history of 15 years of secondary infertility. She was known to be in her 10th weeks of gestation after *in-vitro* fertilization (IVF) and embryo transfer. The pain was generalized in her abdomen and radiated to her shoulders (Figure 1).

On examination, a severe degree of pallor, with a pulse of 104 bpm and a blood pressure of 70/40 mm of Hg was detected. Her abdominal examination revealed generalized tenderness and rigidity. Pelvic ultrasonography revealed a thickened endometrium and an empty uterine cavity. In the right cornu a fetus measured to have a crown-rump length of 10 weeks of gestation was detected with a positive heart rate. The abdomen was filled with blood. The haemoglobin level was detected as 5.8 gr/dl. An emergency laparotomy was performed because of hemodynamic instability.



**Figure 1:** Ruptured right cornual pregnancy

A ruptured right cornual pregnancy was found. The abdomen was filled with 1400 ml of fresh blood clots. The bleeding site was first clamped and a cornual resection and repair was performed. The patient had an uneventful post-operative course and discharged on second postoperative day. The histopathological study of the specimen showed chorionic villi. She was followed up for a month and she did not have any complaints.

## Discussion

The most frightening type of ectopic pregnancies is the cornual one, because of the high risk of its rupture. It causes the myometrium stretching which gives birth to life threatening haemorrhages. Cornual ruptures give rise to 4 out of 11 deaths from ectopic pregnancies [1].

Assisted reproductive techniques (ART), previous tubal pregnancies, tubal surgeries, a history of pelvic inflammatory disease, fibroids and sexually transmitted diseases constitute the risk factors [1]. Transfer of multiple embryos, a transfer near the uterine horn, high pressure applied while transferring; contribute the cornual risk [2]. Bilateral salpingectomy is thought to be another risk factor [2]. The peri and the intratubal adhesions which are especially related to endometriosis are not negligible factors. Some of the authors consider the quality of the embryos as a possible reason [2]. Owing to the increasing use of ART procedures, the cornual pregnancies should be kept in mind by the clinicians.

Vaginal bleeding and abdominal pain are the most encountered symptoms. Haemorrhagic shock is seen in almost 25% of the patients [3] like in our patient who was so close to death. Ciccone et al. created a strong cooperative and collaborative team consisting of physicians, care managers and patients in their study, with the aim of encouraging patients to play a more active role in their health [4]. They suggested that participation of care managers prominently increase confidence and safety. Therefore increasing the patient's health knowledge and self-management skills is vitally important. Besides, the ultrasound and the measurement of HCG (human chorionic gonadotrophin) level is used for the early diagnosis.

Interstitial and cornual ectopic pregnancies are being used as if they are the same situations. In the cornual pregnancy the implantation occurs in the upper and lateral uterine cavity, but the interstitial pregnancy means that the implantation takes place in the proximal intramural region of the fallopian tube [5]. The suspicion of interstitial or cornual pregnancy before the uterine rupture saves life. Ackerman et al., described the interstitial echogenic line sign which was bordering the sac and connecting the superior endometrial canal and the cornual region [5]. Some of the authors emphasized an empty canal with a chorionic sac at least 1 cm separate from the lateral margin and surrounded by a myometrium about 5 mm or less [5].

According to some authors methotrexate treatment can be chosen instead of surgery [6] whereas some of them emphasize that it mostly leads to ruptures [7]. Cornual resection by surgery is the definite way of treatment, laparoscopy can be an option. In spite of everything hysterectomy may be inevitable in some situations [6].

Another difference between the cornual and interstitial pregnancy is the week of rupture. In a series of 32 cases of interstitial pregnancy the rupture occurred in 14 patients and all were before 12 weeks of gestation [5]. Unlike the interstitial ones rupture of cornual pregnancy usually seen after 12 weeks, leading to haemorrhagic shock and furthermore to death [5]. On the contrary in our case, cornual rupture occurred at 10 weeks of gestation.

Our case report demonstrates how a woman may come close to death to have a child and how serious situations the cornual pregnancies are. To save lives of women generally immediate intervention instead of expectant management should be preferred as we did fortunately. So, more detailed examination by transvaginal ultrasonography guides the clinician for accurate diagnose before rupture occurs.

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