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Cornual Ectopic Pregnancy Rupture Early Diagnosis and Treatment: A Case Report

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Abstract **Case Report**

Cornual pregnancy is a severe form of ectopic pregnancy, comprising 2-4% of such cases and presenting a mortality rate 6-7 times higher than typical ectopic pregnancies. It is often confused with interstitial pregnancy which arises from the implantation of the gestational sac in the myometrium's proximal part. Diagnosis and treatment are challenging and considered medical emergencies due to potential for significant maternal haemorrhage. This is a case report of a 26-year-old woman in hypovolemic shock due to a ruptured ectopic pregnancy, confirmed via ultrasound and treated with emergency laparotomy, revealing a left corneal ectopic pregnancy, which was successfully repaired.

Keywords: Cornual pregnancy, Hypovolemic shock, Maternal haemorrhage, Ruptured ectopic.

INTRODUCTION

Cornual pregnancy is one of the most dangerous types of ectopic pregnancy, which accounts for 2-4% of all ectopic pregnancies and has a mortality 6-7 times higher than that of ectopic pregnancy in general. It has to be differentiated from interstitial pregnancy which is a rare pathology that represents from 2 to 6.8% of ectopic pregnancy (EG) [1]. It is determined by the implantation of the gestational sac in the most proximal part of the tube (also known as the interstitial part) in the myometrium.

The diagnosis and treatment of such a pregnancy is difficult and constitutes a medical emergency. Due to the stretching capacity of the myometrium, they tend to appear relatively late, between 7 and 12 weeks of pregnancy. Significant maternal haemorrhage, which can lead to hypovolemia and shock, can occur rapidly from corneal rupture. Risk factors for corneal pregnancy are those of ectopic pregnancy, include history of Pelvic inflammatory disease, history of ectopic pregnancy, history of any pelvic surgery and assisted reproduction techniques.

We report the case of a 26-year-old woman who presented to the obstetric emergency in hypovolemic shock. The diagnosis of ruptured ectopic pregnancy was confirmed in the face of a history of 10 weeks of amenorrhea, with a positive urine pregnancy test. She was transferred for an emergency ultrasound followed by an emergency laparotomy. Intraoperatively we observed a rupture of the left lateral uterine wall with a 10-week foetus in the peritoneal cavity, suggesting a left corneal ectopic pregnancy. Corneal resection and repair was successfully performed.

CASE SUMMARY

A 26-year old female patient presented to our Emergency Department of Obstetric Clinic for severe acute abdominal pain and amenorrhea for 10 weeks followed by bleeding per vagina since 3 days. The patient had 1 vaginal birth without complications in the past. There was widespread sensitivity in lower left quadrant of the abdomen during physical examination. The patient had regular menstrual periods and the last menstrual period of the patient was 10 weeks ago. In the gynaecological examination, minimal mixed type vaginal discharge was present, Colum movements were very painful and the uterine size could not be measured due to the patient's severe pain. However, there was a palpable mass with regular borders in the left pelvic side

area that cannot be clearly differentiated from the uterus during bimanual examination.

Ultrasonographically, there was no gestational sac in endometrial cavity (Fig 1) and a large heterogenous collection/hematoma was seen in left cornual region (Fig 2 & 3). Fluid was seen in endometrial cavity and pelvis.

Arterial blood pressure (BP) was 90/60 mmHg, pulse was 90/min and body temperature was measured as 36.5 C. In laboratory results, the patient had Haemoglobin: 8.2 g/dL, and beta human chorionic gonadotropin e (Beta-HCG) level was 16,057 mIU/mL. The patient was hospitalized with an initial diagnosis of ectopic pregnancy. Despite negative fetal cardiac activity, methotrexate treatment was not considered due to the emergency situation, gestational week and high beta-HCG levels of the case. The patient underwent an emergent laparotomy due to hemodynamic instability and decreasing haemoglobin levels. A ruptured ectopic pregnancy which was bordered with omentum and 370 cc of blood were detected in the left cornual area (Figures 2 & 3). Cornual resection including necrotic areas was performed. We paid attention to preserve the anatomical structure of uterus and adnexa. The patient was discharged after 3 days and advised to follow up.

Fig 1: No gestational sac in endometrial cavity. Minimal amount of fluid is seen in endometrial cavity

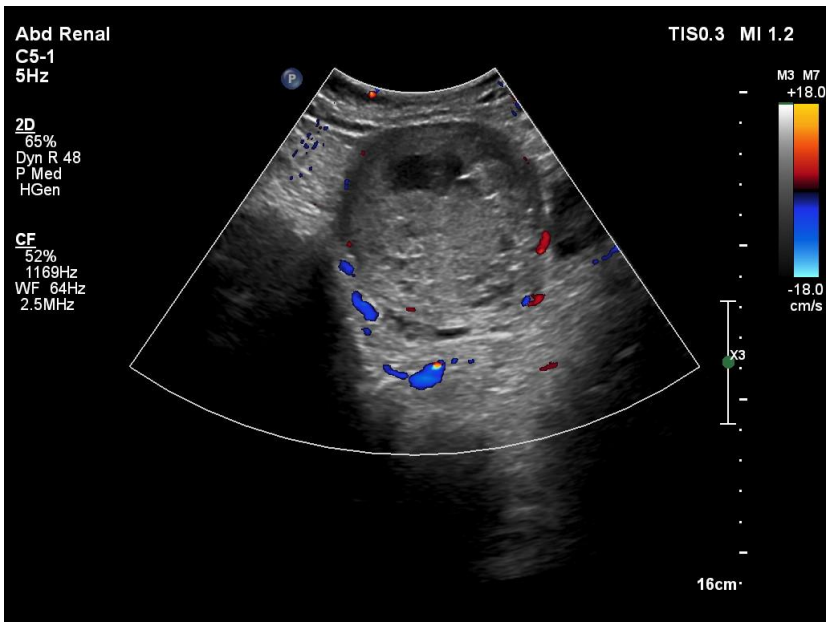

Fig 2: Large heterogenous collection/hematoma in left corneal region

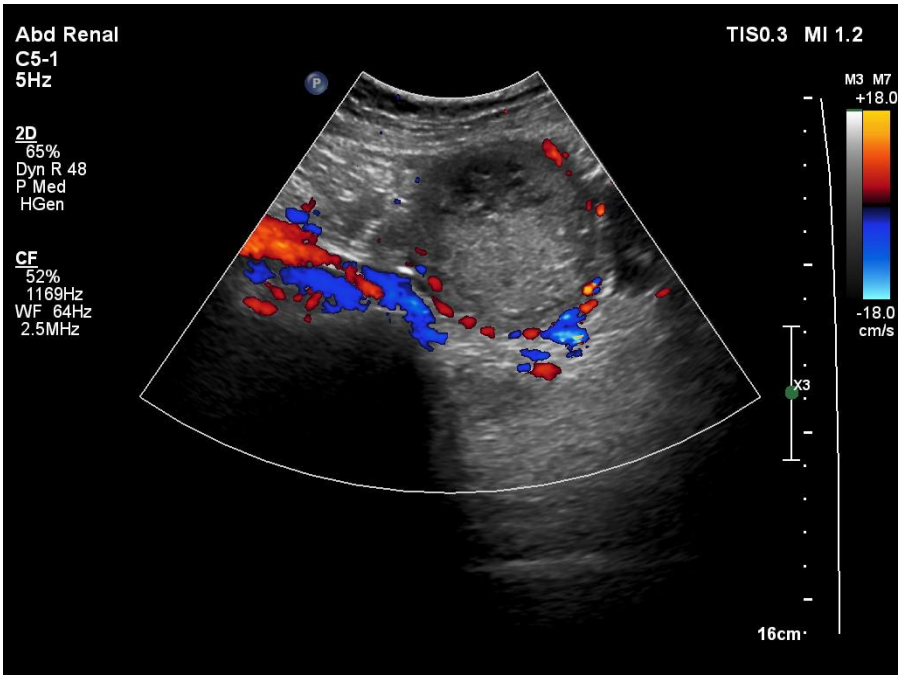

Fig 3: Large heterogenous collection/hematoma in left corneal region

DISCUSSION

Ectopic pregnancy is defined as implantation of a gestational sac in areas other than the uterine cavity. Ectopic pregnancy is one of the life-threatening medical situations in women, especially in underdeveloped countries.). In our case, there were no risk factors for ectopic pregnancy. Cornual ectopic pregnancy, represent about 2 to 4% of the whole ectopic pregnancy [2]. Corneal ectopic pregnancy rupture occurs more often later in pregnancy than other ectopic pregnancy. They cause massive haemorrhage in case of rupture and carry a 2 to 5 times higher mortality risk compared to others ectopic pregnancy. It's hard to diagnose an ectopic interstitial pregnancy before rupture; however, it is essential that this situation be diagnosed before rupture to reduce morbidity and mortality risks. In the past, since the diagnosis of ectopic pregnancy could only be confirmed by laparotomy, about 50% of ectopic interstitial pregnancy ended with a hysterectomy. Today, due to advancements in diagnostic methods such as transvaginal ultrasound and beta-HCG measurements, it can be diagnosed early.

In Doppler ultrasound studies, “a trophoblastic pattern of blood flow” characterized by high speed and low resistance support the diagnosis of an ectopic pregnancy [3]. Magnetic resonance imaging (MRI) can be used in cases of inconclusive ultrasound. It is also useful in early detection of ectopic pregnancy. High quality soft tissue images and ease of use during pregnancy are advantages of MRI.

The ultrasound of typical of interstitial pregnancy, includes an eccentric gestational sac, surrounded by a myometrial rim, separated by more than a cm from an empty uterine cavity. It also describes the presence of an echogenic line, which connects the eccentric gestational sac with the endometrial cavity, which represents the interstitial part of the fallopian tube]. This sign was not found in our case, given the advanced age of pregnancy [4]. The management of cornual pregnancy depends on the gestational age, the hemodynamic status, the desire for fertility and the experience of the surgeon [5]. For medical treatment, intramuscular injection of methotrexate is the method of choice [6]. Medical treatment is increasingly used today with varying degrees of success, especially for uninterrupted interstitial pregnancy. However, the risk of failure is still present. Surgical treatment is based on a rapid approach with laparoscopy or laparotomy to ensure haemostasis. The surgical technique consists of a cornuostomy or cornual resection, with salpingectomy. The main complications of treated interstitial pregnancy are recurrence and uterine rupture in subsequent pregnancies. Recurrence is the prerogative of medical treatment and cornuostomy, while uterine rupture is secondary to surgical treatment with cornual resection, possibly due to the fragility of the uterine wall. However, recent studies are more reassuring on this point and do not recommend systematic prophylactic caesarean section.

CONCLUSION

Ruptured cornual pregnancy is a rare but life-threatening condition which needs prompt diagnosis and intervention. Our case highlights the importance of considering cornual pregnancy in the differential diagnosis of women presenting with abdominal pain and vaginal bleeding in early pregnancy, especially in those with risk factors for ectopic pregnancy. Early detection

through transvaginal ultrasound and timely surgical management are crucial for preventing significant morbidity and mortality.

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