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Case Report

A Rare Case of Unsuspected Cornual Ectopic Pregnancy Discovered on CT

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Abstract

A 24-year-old pregnant women, gravida 3, para 3 (G3P3), was admitted at 29 weeks of gestational age, for vomiting and abdominal pain. Her pregnancy was poorly followed.

At initial examination the patient was hemodynamically stable, there was no metrorrhagia, but she had a remarkable diffuse abdominal tenderness.

The gynecologist ultrasonography report described a single live intrauterine fetus, with severe intrauterine growth restriction (IUGR), a moderate pelvic effusion, with no other abnormalities. The abdominal ultrasound couldn't find any other abnormalities.

The patient state rapidly deteriorated raising the doubt of a surgical non obstetrical emergency. A computed tomography (CT) scan of the abdomen and the pelvis was then performed since the MRI machine wasn't available at our institution. CT revealed an unsuspected ruptured cornual ectopic pregnancy with moderate hemoperitoneum.

The patient was immediately rushed to the operation room. The operation consisted in a podalic extraction of a male newborn, resection of the right horn and right adnexectomy.

The post-operative follow-up was simple. The newborn was admitted in the neonatal unit. However, he passed away at the age of 15 days.

Keywords: Ectopic Pregnancy; Corneal Pregnancy; Uterine Rupture; Hemoperitoneum; Computed Tomography

Abbreviations

EP: Ectopic Pregnancy; IUGR: Intrauterine Growth Restriction; CT: Computed Tomography.

Introduction

Cornual pregnancy is a rare form of ectopic pregnancy, happening when implantation occurs in the cavity of a rudimentary horn of the uterus [2]. This condition is associated with high mortality rate related to uterine rupture, which leads to a massive hemorrhage [3].

This case is presented because of the rarity of the diagnose of cornual pregnancy by CT, especially in a late gestational age, which was 29-week in our case.

Case Presentation

A 24-year-old pregnant women, gravida 3, para 3 (G3P3), with two prior uncomplicated vaginal deliveries, presented at 29 weeks of gestational age, with vomiting and abdominal pain.

Her pregnancy was poorly followed; she only had one previous ultrasound report done at 17 weeks of gestational age, with no reported abnormalities.

Abdominal examination revealed abdominal diffused tenderness, right hypochondrium guarding, fundal height measuring 25 cm.

At, pelvic examination the cervix was closed, with no metrorrhagia.

No other abnormalities were detected in the general examination.

Ultrasonography (US) reported a single live intrauterine fetus, with severe intrauterine growth restriction (IUGR), and an absent end-diastolic flow.

US also reported a posterior placenta, with no signs of placental abruption, and moderate pelvic effusion.

The patient state rapidly deteriorated raising the doubt of a surgical non obstetrical emergency. A computed tomography (CT) scan of the abdomen and the pelvis was then performed since the MRI machine wasn't available at our institution. CT revealed rather an early stage ruptured ectopic cornual pregnancy with moderate hemoperitoneum (Figure 1).

The patient was immediately transferred to the operating room. A midline laparotomy incision was made bellow the umbilicus. Intraoperatively, a moderate hemoperitoneum was found, and the inspection of the uterus revealed an enlarged right cornua (Figure 2).

Podalic extraction of a male newborn, with 5/5/7 apgar score, was then performed. He weighted 775g (Figure 2).

The resection of the right horn with right adnexectomy were also conducted.

The post-operative follow-up was simple. The newborn was admitted in the neonatal unit. Unfortunately, he passed away at the age of 15 days.

Discussion

Ectopic pregnancy (EP) is defined as the implantation of a fertilized ovum outside the uterine cavity [5]. It is a rare condition, counting for 2% of all pregnancies [1].

Figure 1: a, b and c. Axial, sagittal and coronal contrast-enhanced CT scan images showing an ectopic pregnancy, located above the uterine corpus, and abondant hemoperitoneum.

EP mostly occurs in the uterine tubes, counting for 95% of cases approximately [1].

Among reported risk factors of EP, there are tubal surgery, history of pelvic inflammation, previous tubal pregnancy or tubal defect [1].

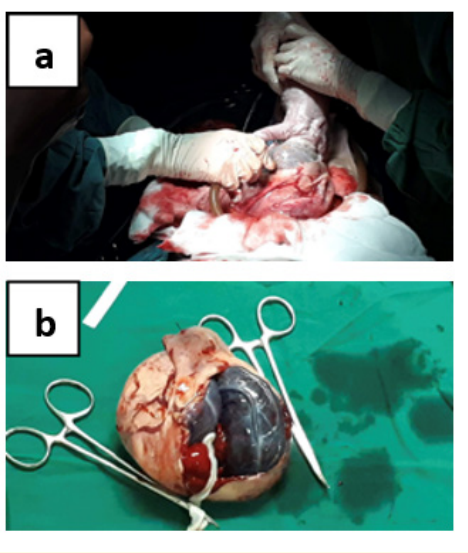

Figure 2: a and b. Preoperative images of the fetus extraction (a) and the placenta (b).

Cornual pregnancy, a rare form of ectopic pregnancy, is defined as the implantation of the fertilized ovum in the cavity of a rudimentary horn of the uterus, it counts for about 2 to 4% of all tubal pregnancies [2].

It is a potentially life-threatening condition [3]. The main risk is the rupture leading to a massive bleeding, since this area is a well-vascularized region, receiving blood from the uterine and ovarian vessels [5]. Uterine rupture may occurs in up to 20% of pregnancies aged more than 12 weeks of amenorrhea [2], resulting in a mortality rate of more than 2% [5].

Cornual pregnancy is challenging to diagnose, and difficult to diagnose preoperatively, due to a low ultrasonographic sensitivity. US findings may be easily confused with a normal intra-uterine pregnancy. However, when showing an empty uterus, the diagnose is highly suspected [6].

CT, a technique which is usually avoided in pregnancy, may show no specific finding, and as in US, cornual pregnancy may looks like a normal intrauterine pregnancy [6]. In some cases, CT may also show an ectopic pregnancy, located above the uterine corpus with an empty uterus or a solid-cystic mass with a strong peripheral enhancement [1].

CT may become of interest in emergency situation to reveal hemoperitoneum.

The most important rule when performing imaging examination using radiation for a pregnant woman, same as in general population, is to use the golden rule: ALARA, which means "as low as reasonably achievable", referring to radiation exposure [7].

Even though minimizing fetal radiation exposure is crucial, it is also important to highlight that radiological examination such as CT should not be avoided in pregnant women, especially in urgent situation when this technique guides the patient management. This was in fact the case of our patient.

It is also important to point that the consequences of radiation exposure in fetus are divided into four categories depending on the gestational age at which the examination was performed: pregnancy loss if the examination was performed at an early stage (in the first two weeks), malformation and developmental delay (during the organogenesis period), and carcinogenesis which is, however, considered as a stochastic effect unlike the other consequences which depend on the radiation dose [7]. Our patient was in on her third trimester of gestation, risks are then minimal, if considering gestational age.

Since we have performed a CT for a pregnant woman, fetus radiation dose was calculated using a web-based tool (www.fetaldose.org), it was 19.15mGy, which is considered safe (threshold: 50mGy) according to the Center of Disease Control (CDC). Doses above 100mGy are considered as the minimum dose above which negative fetal consequences will occur [7,8].

In very rare circumstances, cornual pregnancy may lead to viable fetus, since it is developed in a part of the tube which has good muscular and vascular support, resulting in good distensibility of this part of the tube [2,5]. This helps the fetus to grow, but also increases the risk of rupture.

The treatment of choice of cornual pregnancy consists of surgical corneal resection, however, currently, more conservative treatments such as laparoscopic or medical treatment are being used with good results [4,5].

Conclusion

Cornual pregnancy is a life-threatening condition due to the risk of uterine rupture and massive hemorrhage. Imaging techniques, including US and CT, lack specificity in the diagnose of ectopic pregnancy, but are of interest in emergency situations.

Medical treatment has shown good results; however, surgical corneal resection remains the treatment of choice.

Conflict of Interest

The authors declare that there is no conflict of interest.

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