Case Report

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Pregnancy in Non-Communicating Rudimentary Horn of Unicornuate Uterus: A Case Report

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ABSTRACT

A unicornuate uterus with a non-communicating rudimentary horn has always been a notorious uterine malformation threatening normal pregnancy continuation. Pregnancy in the rudimentary horn of the uterus is rare, but it plays an essential role in maternal morbidity and mortality. Early detection of rudimentary horn pregnancy is vital because poor musculature can lead to the dangerous complication of uterine rupture. When a Rudimentary horn pregnancy is diagnosed, surgical treatment to excision the horn with ipsilateral salpingectomy is recommended because of its high risk of rupture in the second trimester. We present a case of non-communicating rudimentary horn pregnancy that was terminated, and the rudimentary horn was resected.

Introduction

Congenital malformations of the female genital tract are deviations from normal anatomy resulting from embryological maldevelopment of the Mullerian or paramesonephric ducts [1]. The anatomic variations of a rudimentary horn serve as the basis for the classification of the unicornuate uterus by the American Fertility Society: rudimentary horn with a cavity, communicating with the unicornuate uterus (class IIA), rudimentary horn with a cavity, not communicating with the unicornuate uterus (class II-B, the most common), rudimentary horn without a cavity (class II-C), or uni-

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cornuate uterus without rudimentary horn (class II-D) [2]. A unicornuate uterus with a non-communicating rudimentary uterine horn has always been a notorious uterine malformation that threatens normal pregnancy continuation [3]. The incidence of pregnancy occurring in a rudimentary horn of the unicornuate uterus is very rare, ranging from 1 in 75,000 to 150,000 pregnancies [4]. As most rudimentary horns are asymptomatic, only 8% of rudimentary horn pregnancies are diagnosed before the symptoms appear [1].

We present a case of non-communicating rudimentary horn pregnancy that was terminated and subsequently resected during laparotomy.

Case Presentation

Our patient was a 30-year-old pregnant woman with Gravida 2 Para 1 who presented with abdominal pain and vaginal bleeding and was referred to our hospital. The patient had no history of medical disease, and she had a normal vaginal delivery 3 years ago. She reported regular menstrual cycles with no history of dysmenorrhea. In our center, on arrival, her reading was 15/15, as measured on the Glasgow Coma Scale, blood pressure: 110/70 mmHg, heart rate: 88 beats per minute, respiratory rate: 12 breaths per minute, temperature: 37 C. On general examination, the following were recorded: abdomen was soft without distension and tenderness, mild vaginal bleeding, uterine height was about 16 weeks, and the cervix was closed. According to the first trimester ultrasound exam, the fetus's gestational age was 16weeks. In a prior ultrasound report, a double-horned uterus was reported. Also, a gestational sac with an embryonic pole and normal fetal heart rate (according to CRL: gestational age was 8 weeks) was reported in the left horn of the uterus. The last ultrasound exam showed a 16-weeks gestation fetus without a fetal heart on the left side of the uterus, suspected to be corneal pregnancy or a pregnancy in the left rudimentary horn of the uterus with decreased amniotic fluid volume. The patient underwent a laparotomy. The surgery was performed, and the diagnosis was an essential horn pregnancy.

A 16-weeks fetus was found in the rudimentary horn. The rudimentary horn was connected to the uterus with a musculature band without an obvious connection with the uterus. The left fallopian tube and ovary were expected and generally attached to the rudimentary horn (Figure 1). Excision of the rudimentary horn and the left fallopian tube with conservation of the left ovary was done (Figure 2). A dead male fetus was delivered through an incision over the pregnant horn (Figure 3). The uterus was saved, and hemostasis was stabilized. The kidneys were normal. The Patient had a good post-operative recovery and was discharged healthy two days after surgery.

Discussion

Unicornuate uterus with rudimentary horn occurs due to abnormal development of mullerian duct [5]. This rudimentary horn is sub-classified into communicating and non-communicating with uterine cavity and horn with no cavity [6]. It is estimated that there is no communication between the horn and the uterus in 90% of the unicornuate uterus with rudimentary horns [7].

Figure 1. Rudimentary horn that was identified during the operation

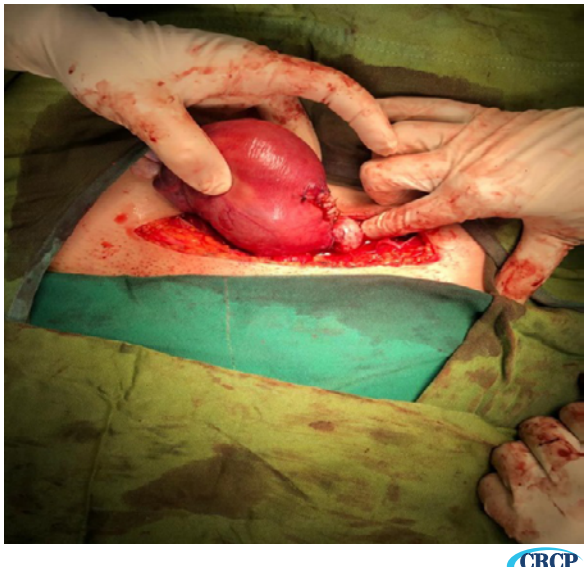

Figure 2. Image taken after the excision of the left rudimentary horn

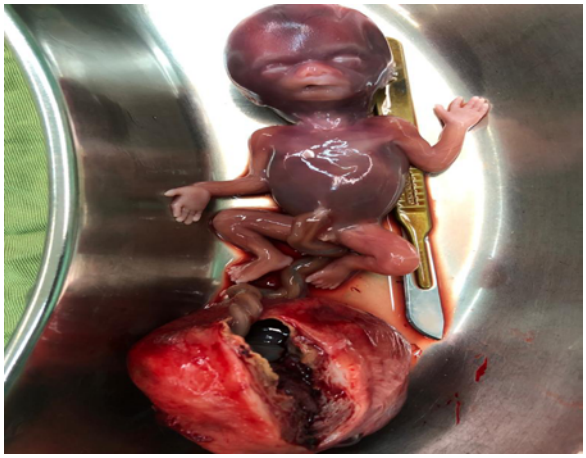

Figure 3. Fetus with placenta

Pregnancy in the rudimentary horn of the uterus is rare, but it has a higher risk of maternal morbidity and mortality. Early detection of rudimentary horn pregnancy is important because poor musculature can lead to uterine rupture. The rupture rate may reach 80% [8]. In this form of mullerian anomaly, ectopic pregnancy implantation occurs in the rudimentary horn of the uterus [9]. In our case, the rudimentary horn was non-communicating with the central uterine cavity; therefore, maybe there was microscopic communication or sperm probably ascended from the regular part of the uterus and fertilized an egg in the peritoneal cavity. The zygote then enters the primary horn tube. Some cases are described in the literature with variable timing of rupture from 5 to 35 weeks according to the ability of horn musculature to hypertrophy and dilate to accommodate the fetus [10]. Wherever the uterine wall is thicker and more vascular, more severe bleeding occurs in a ruptured rudimentary horn pregnancy [11].

Early detection is the best way to prevent uterine rupture due to pregnancy in the rudimentary horn and subsequent massive bleeding. Despite the previous ultrasound exam, there was poor follow-up due to a lack of clinical symptoms. The patient was referred to the hospital when clinical symptoms occurred. In an article published in 2005, Tsafrir et al. mentioned some diagnostic points in the early stages of pregnancy. These criteria include a pseudo pattern of asymmetrical bicornuate uterus, absent visual continuity tissue surrounding the gestational sac and the cervix, and finally, the presence of myometrial tissue surrounding the gestation sac. Despite that, most cases remain undiagnosed until it ruptures and presents as an emergency [12]. In our case, her pregnancy was misdiagnosed as a pregnancy in a bicornuate uterus.

Immediate surgical management is recommended after diagnosis of rudimentary horn pregnancy, although misdiagnosis of late and live delivery (usually premature) has been reported [13]. Surgeons may use imaging findings—including uterine horn size, evidence of uterine rupture, and invasive placenta—to plan a surgical approach (laparoscopy versus laparotomy) and prepare for hemorrhage [14]. The recommended and preferred treatment for these patients is the surgical removal of the pregnant horn [13]. A few reported cases in the literature were managed medically with methotrexate in early pregnancy or by laparoscopic excision of the horn before rupture [15-17]. The patient is advised to be examined for a urogenital system at discharge because this anomaly is associated with urological disorders [18].

Conclusion

Rudimentary horn pregnancy is a rare clinical condition, and on-time diagnosis is crucial because it is associated with high maternal morbidity and mortality. When a rudimentary horn pregnancy is diagnosed, surgical treatment to excision the uterine horn is recommended.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles are considered in this article. Participants entered the study after being informed of the objectives of the research and its implementation stages, and after obtaining informed and written consent to ensure the confidentiality of their information. They were free to leave the study whenever they wished.

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Conflict of interest

The authors declared no conflict of interest.

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