

Ruptured rudimentary horn pregnancy at sixteen weeks

On altına haftada rüptüre rudimenter boynuz gebeliği

Fehmi Zeqiri, Myrvete Paçarada, Niltene Kongjeli, Vlora Zeqiri, Gyltene Kongjeli, Burim Krasniqi
Department of Gynecology/Obstetrics Clinic, University Clinical Centre of Kosova, Prishtina

Abstract

Pregnancy in a non-communicating rudimentary horn is very difficult to diagnose before it ruptures, leading to life-threatening intraperitoneal hemorrhage. A 22-year-old second gravida patient presented at the Emergency Center of the University Clinical Center of Kosova with a 16-week history of amenorrhea and acute onset of severe abdominal pain. She was resuscitated and taken for an emergency laparotomy under general anesthesia. Intraoperatively, there was a massive hemoperitoneum with a ruptured right rudimentary horn. Given their rarity, ruptured rudimentary horn pregnancies are of interest.

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Key words: Bicornuate uterus, rudimentary horn, interstitial pregnancy

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Özet

Rudimenter boynuz gebeliğini genellikle rüptüre olup da hayatı tehdit eden hemorajilere neden olmadıkça tanımak oldukça güçtür. Yirmiki yaşında ve 16 haftalık amenoresi olan hasta Kosova Üniversitesi acil servisine akut batin yakınmaları ile müracaat etti. Resusite edilip genel anestezi ile laparotomi uygulandı. İntraoperatif masif hemoperitoneum ve rüptüre boynuz gebeliği izlendi.

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Anahtar kelimeler: Bikornuat uterus, rudimenter boynuz, interstisyel gebelik

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Introduction

Blastocysts normally implant in the endometrial lining of the uterine cavity, and implantation at any other location is called an ectopic pregnancy (1). Malformations of the uterus result from a variety of anomalies during embryogenesis from the 6th to the 17th week of development. Agenesis should be distinguished from unicornate, pseudounicornate, bicornate, septate, and communicating uteri (Musset's classification) (2). A rudimentary horn is a developmental anomaly of the uterus, and a pregnancy in the rudimentary horn of the uterus is known as a cornual pregnancy (3). Implantation within the tubal segment that penetrates the uterine wall results in an interstitial or cornual pregnancy. Pregnancy in a non-communicating rudimentary horn is very difficult to diagnose before it ruptures, leading to life-threatening intraperitoneal hemorrhage, although rupture may not occur until up to 16 weeks (4). Ectopic pregnancy refers to the implantation of a fertilized egg in a location outside the uterine cavity, including the fallopian tubes, cervix, ovary, cornual region of the uterus, and abdominal cavity. The abnormally implanted fetus grows and draws its blood supply from the abnormal implantation site. As the fetus enlarges, it creates the potential for organ rupture because only the uterine cavity is designed to expand and accommodate fetal development (5).

Although many surgeons have attempted to distinguish interstitial from cornual pregnancy, the two are difficult to distinguish anatomically and should be classified together. Classically, cornual or interstitial pregnancies present later, because the gestational sac is surrounded by the thicker myometrial walls rather than the weaker thin-walled fallopian tube (6). This region is well vascularized because of the confluence of uterine and ovarian vessels, which can lead to the loss of a large volume of blood. Surgical treatment is usually performed by laparotomy because it is easier to stop the blood loss after incising the cornual region and resecting the cornual sac (7). However, successful laparoscopic treatment has been reported in some cases (8). Ectopic pregnancy can lead to massive hemorrhage, infertility, or death. There is severe hemorrhage because the implantation site is located between the ovarian and uterine arteries.

Case report

A 22-year-old second gravida patient presented to the Emergency Center of the University Clinical Center of Kosova with a 16-week history of amenorrhea and acute onset of severe abdominal pain. She collapsed while being transported to the Emergency Center. There was no history of vaginal

bleeding. Her menses began at age 14, occurred every 30 days, and lasted 4-5 days. There was no history of irregularity or dysmenorrhea. This patient had had a previous pregnancy with a spontaneous delivery. The presence of a rudimentary horn was not diagnosed before the current pregnancy.

During the pregnancy, she was hospitalized in a Gynecology/Obstetrics Clinic when she was 10 weeks pregnant, and transabdominal and transvaginal ultrasonography were performed. The results revealed a slightly enlarged uterus with an empty intrauterine cavity in the left cornu, and there was a gestational sac with an embryo (crown-rump length (CRL) 35 mm) with fetal movement and fetal heart activity in the right cornu. The general physical and laboratory examinations were normal and the Clinic discharged her in good health.

She presented to the Gynecology/Obstetrics clinic a second time in hemorrhagic shock. An abdominal examination showed distension with generalized tenderness. The uterus was not palpable separately. There was evidence of free fluid in the peritoneal cavity. She was drowsy, but responded to a painful stimulus. A vaginal examination revealed an enlarged uterus and tenderness on rocking the cervix. Since transabdominal ultrasonography indicated a decreased uterine size and there was evidence of free fluid in the peritoneal cavity, a clinical diagnosis of a ruptured uterus with intraperitoneal hemorrhage was made. The physical examination, revealed a body temperature of 37.2°C, blood pressure of 90/55 mmHg, respiratory rate of 25/min, and pulse of 110/min. The preoperative laboratory investigation showed a hematocrit of 23%, hemoglobin of 8.7 g/dL, and $20.2 \times 10^3 / \text{mm}^3$ leucocytes.

She was resuscitated and taken for an emergency laparotomy under general anesthesia. Intraoperatively, there was a massive hemoperitoneum with a ruptured right rudimentary horn (Fig. 1), with approximately 1500 mL of blood in the peritoneal cavity. The fetus and partial placenta were lying in the peritoneal cavity (Fig. 2). The rudimentary uterine cornu in a bicornate uterus with a single cervix had ruptured (Figs. 3 and 4). The rudimentary horn was larger than the main uterus and connected by a thin fibrous band. The left fallopian tube and both ovaries were normal, which correlated with the physical examination and ultrasonography.

The right rudimentary horn was resected carefully without perforating the intrauterine cavity and the abdomen was closed after peritoneal lavage and ensuring hemostasis (Fig. 5).

Five units of blood and two of plasma were transfused perioperatively. The postoperative laboratory investigation showed a hematocrit of 30.3%, hemoglobin of 10.1 g/dL, and $8.9 \times 10^3 / \text{mm}^3$ leucocytes. The pathological examination confirmed a ruptured cornual pregnancy (Fig. 6).

She was discharged 4 days postoperatively.

Discussion

Pregnancy in a rudimentary horn is possible only if a spermatozoon travels up the normal fallopian tube and fertilizes an ovum that subsequently enters the fallopian tube of the rudimentary

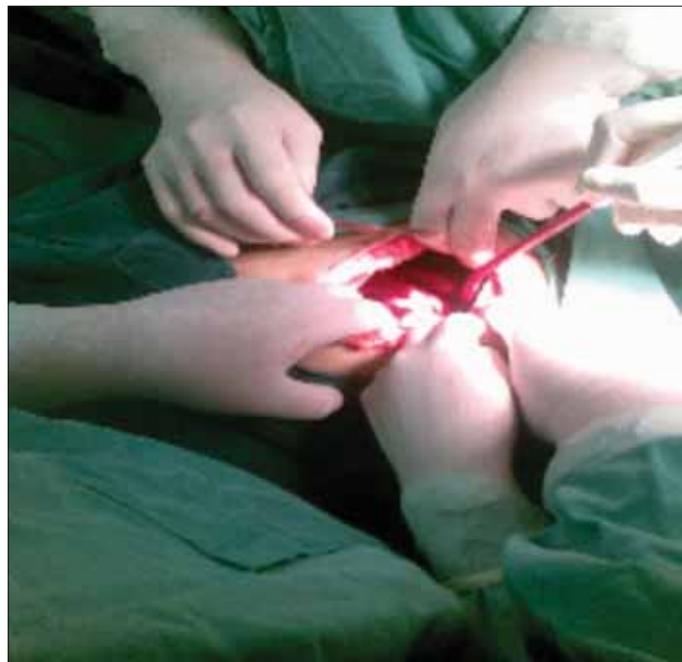


Figure 1. Massive hemoperitoneum with a ruptured right rudimentary horn



Figure 2. The fetus and parts of the placenta lying in the peritoneal cavity

horn. The usual termination of pregnancy in the rudimentary horn is by rupture at 4-5 months gestation because of the poorly developed muscular and mucosal layers. Rupture may occur at any stage depending on the rudimentary horn anatomy, and sometimes not until midterm (9).

Cornual (interstitial) pregnancy poses a significant diagnostic and therapeutic challenge and carries a greater maternal mor-

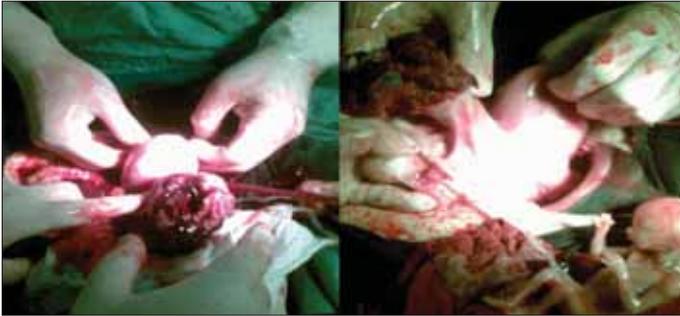


Figure. 3 and 4. The rudimentary uterine horn in a bicornuate uterus with a single cervix had ruptured



Figure 5. The rudimentary right horn was resected



Figure 6. Pathological examination confirmed a ruptured cornual pregnancy

tality risk than ampullary ectopic pregnancies. Cornual pregnancies tend to present relatively late due to myometrial distensibility (10). The diagnosis can be made with transabdominal or transvaginal ultrasound, using three criteria: an empty uterus, a separate gestational sac <1 cm from the lateral-most edge of the uterine cavity, and a thin myometrial layer surrounding the sac (11).

The presence of the rudimentary horn was not diagnosed until it ruptured. Significant maternal hemorrhage leading to hypovolemia and shock can rapidly result from cornual rupture. Clinically, risk factors are similar to other types of ectopic pregnancy (12). Different surgical intervention modalities for cornual gestation have been reported. Traditionally, laparotomy with cornual resection is performed for a ruptured cornual pregnancy when the patient is hemodynamically unstable. Recently, more conservative operations have been developed, and operative laparoscopy provides yet another management option. Laparoscopic cornuostomy and cornual resection have been reported for the treatment of interstitial ectopic pregnancy (13). The accepted treatment is to remove the gravid rudimentary horn and leave the normal one. Currently, there is insufficient evidence to recommend any single treatment modality for cornual gestation, and the decision should be based on factors such as clinical presentation, the surgeon's expertise, side effects, overall cost, and patient preference

Conflict of interest

No conflict of interest is declared by authors.

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