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Case Report

Ruptured non-communicating horn of bicornuate uterus at 22 weeks of gestation presenting as hypovoluemic shock: a case report

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ABSTRACT

Pregnancy in a non-communicating rudimentary horn is a rare form of ectopic pregnancy resulting from a müllerian duct anomaly and is associated with a high risk of uterine rupture (50-90%), massive intraperitoneal hemorrhage, and maternal morbidity. Diagnosis before rupture remains challenging due to nonspecific clinical presentation and limitations of imaging. This case is presented to highlight the importance of early recognition, prompt surgical management, and the possibility of successful subsequent pregnancy following excision of a ruptured rudimentary horn. A 33-year-old, G2P1L1 woman with a previous lower segment cesarean section, history of infertility treatment, and hypothyroidism presented at 22+1 weeks of gestation with acute abdominal pain, syncope, and hypovoluemic shock. Emergency laparotomy revealed rupture of a right non-communicating rudimentary horn with hemoperitoneum. Excision of the ruptured rudimentary horn with right salpingo-oophorectomy was performed, and the patient recovered following massive blood transfusion. One year later, she conceived spontaneously. Despite developing complete placenta previa, gestational diabetes mellitus, and hypothyroidism, she underwent emergency lower segment cesarean section at 31+2 weeks of gestation, resulting in the delivery of a healthy preterm male infant. Rudimentary horn pregnancy should be considered in women with acute abdominal pain and hemodynamic instability during the second trimester, even when a previous diagnosis of intrauterine pregnancy has been made. Because rupture commonly occurs before diagnosis, maintaining a high index of suspicion is crucial. Surgical excision remains the definitive treatment for ruptured cases. This report highlights that successful subsequent pregnancy is achievable following appropriate surgical management and careful antenatal surveillance.

Keywords: Rudimentary horn pregnancy, Müllerian anomaly, Uterine rupture, Hemoperitoneum, Subsequent pregnancy

INTRODUCTION

Congenital müllerian duct anomalies arise from abnormal development, fusion, or resorption of the müllerian ducts during embryogenesis.[1] A unicornuate uterus with a rudimentary horn represents approximately 5-10% of all müllerian anomalies. Pregnancy occurring within a non-communicating rudimentary horn is exceedingly rare, with an estimated incidence ranging from 1 in 76,000 to 1 in 150,000 pregnancies.[1]

The rudimentary horn has a poorly developed myometrium and limited distensibility, making it incapable of accommodating an advancing pregnancy. Consequently, rupture usually occurs during the second trimester, most commonly between 10 and 20 weeks of gestation, resulting in massive intraperitoneal hemorrhage and life-threatening maternal complications. Prenatal diagnosis remains challenging because clinical presentation and ultrasonographic findings may mimic those of a normal intrauterine pregnancy.[2]

Early diagnosis and prompt surgical management are essential to reduce maternal morbidity and mortality.[2,3]

CASE REPORT

A 33-year-old, G2P1L1 presented to the emergency department at 22+1 weeks of gestation with sudden onset severe abdominal pain followed by dizziness, syncope, and decreased fetal movements. She had undergone one previous lower segment cesarean section for breech presentation, had a history of infertility treatment, and was receiving treatment for hypothyroidism. There was no history of vaginal bleeding, leaking per vaginum, abdominal trauma, or hypertensive disorders during pregnancy. Patient was critically ill and semiconscious on presentation, appeared severely pale with cold extremities. Blood pressure was 80/60 mmHg with a pulse rate of 110/min. Abdominal examination revealed generalised tenderness, with uterine size corresponding to 24 weeks of gestation and fetal heart sounds of 160 bpm.

Emergency ultrasonography demonstrated significant free intraperitoneal fluid suggestive of hemoperitoneum. In view of the patient's hemodynamic instability and suspected uterine rupture, aggressive resuscitation with intravenous crystalloids and blood products was initiated, and she was immediately taken for exploratory laparotomy.

Intraoperatively, approximately one litre of hemoperitoneum with blood clots was encountered. A ruptured right non-communicating rudimentary horn containing the pregnancy was identified. The rupture site was partially sealed by adherent omentum and bowel loops. The main uterine cavity was intact. Excision of the ruptured right rudimentary horn along with right salpingo-oophorectomy was performed to achieve complete hemostasis. During the perioperative period, the patient received 6 units of packed red blood cells, 3 units of fresh frozen plasma, and 1 unit of platelets.

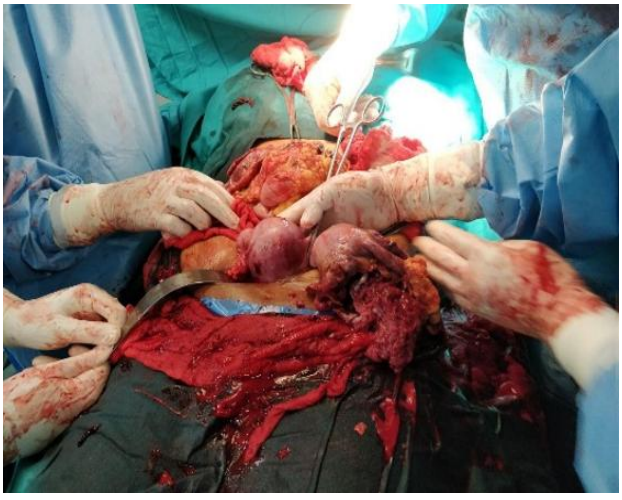

Figure 1: Intraoperative image showing ruptured right horn of uterus.

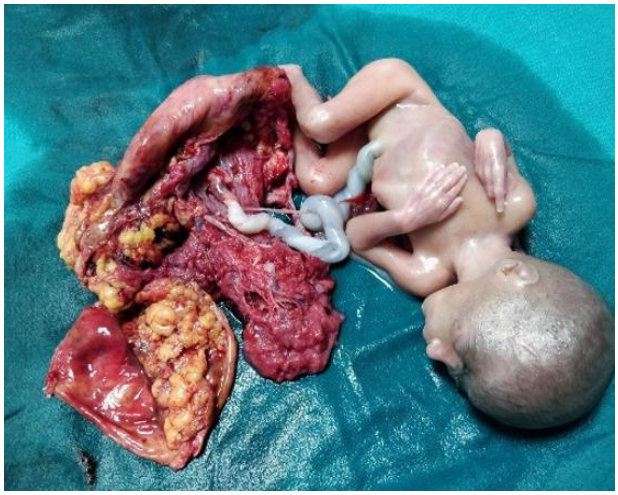

Figure 2: Ruptured right horn of uterus, non-viable fetus and omentum.

Following surgery, the patient was managed in the intensive care unit before being shifted to the postnatal ward after stabilization. Her postoperative recovery was uneventful, and she was discharged in satisfactory condition with counseling regarding future pregnancy, the need for early antenatal registration, and delivery at a tertiary care center.

One year later, the patient conceived spontaneously. Considering her previous history of ruptured rudimentary horn pregnancy, she received regular antenatal surveillance at a tertiary referral center. During the pregnancy, she developed complete placenta previa, gestational diabetes mellitus, and hypothyroidism. At 31+2 weeks of gestation, she presented with recurrent antepartum hemorrhage and underwent emergency lower segment cesarean section under spinal anesthesia.

The right ovary and fallopian tube were absent, while the left adnexa were normal. A bicornuate uterus with a single communicating cavity on the left was observed, and a live preterm male infant was delivered.

The neonate was a male, delivered at 31+2 weeks of gestation with a birth weight of 1.784 kg and an APGAR score of 8/9/9. The neonatal and maternal outcomes were both stable, blood loss was controlled, and postoperative recovery was uneventful. Both mother and neonate had an uneventful postoperative recovery and were discharged in stable condition.

DISCUSSION

Pregnancy in a non-communicating rudimentary horn is one of the rarest forms of ectopic pregnancy and carries a significant risk of maternal and fetal morbidity.[1] Fertilization occurs through transperitoneal migration of spermatozoa or a fertilized ovum despite the absence of communication between the rudimentary horn and the uterine cavity.[3] Owing to its poorly developed musculature

and reduced distensibility, the rudimentary horn is unable to sustain an advancing pregnancy, predisposing it to rupture during the second trimester.

Clinical diagnosis before rupture remains difficult because symptoms are often nonspecific. Although ultrasonography is the initial imaging modality, its sensitivity decreases with advancing gestation due to distortion of pelvic anatomy. Magnetic resonance imaging can improve diagnostic accuracy when suspicion exists.[2] Failure to establish the diagnosis before rupture frequently results in life-threatening hemorrhage requiring emergency surgical intervention.

The standard treatment for rudimentary horn pregnancy is excision of the rudimentary horn along with the ipsilateral fallopian tube, preferably before rupture. Laparoscopic excision is feasible when diagnosed early; however, laparotomy remains the treatment of choice in hemodynamically unstable patients or after rupture.[4]

An important feature of the present case is the successful spontaneous conception following surgical excision of the ruptured rudimentary horn. Although these women remain at high obstetric risk because of previous uterine surgery and associated obstetric complications, favorable maternal and neonatal outcomes can be achieved with meticulous antenatal surveillance, multidisciplinary management, and timely delivery at a tertiary care center.[5]

CONCLUSION

Pregnancy in a rudimentary horn is a rare but life-threatening obstetric emergency that should be considered in pregnant women presenting with acute abdominal pain and hypovolemic shock during the second trimester. Prompt diagnosis, aggressive resuscitation, and emergency surgical excision are essential to reduce maternal morbidity and mortality. This case further demonstrates that preservation of fertility and successful subsequent pregnancy are possible following timely surgical management with comprehensive antenatal surveillance.

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