CASE SERIES

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Unusual Causes of Hemoperitoneum: A Case Series of Fundal and Uterine Horn Rupture

ABSTRACT

Introduction: Uterine rupture, being an uncommon and severe obstetrical event, is associated with high perinatal and maternal morbidity and mortality. For an unscarred uterus, incidence of rupture is approximately 1 in 17,000–20,000 deliveries or, as reported by the World Health Organization, 0.006%. Pregnancy in the presence of uterine anomalies is unusual and rare in clinical practice, and very few cases have been reported. Most of the uterine anomalies are asymptomatic and hence never noticed. An increase in the incidence of rupture in Mullerian anomalies has been noted. We present a case series of uterine rupture seen in two cases at our center. **Materials and Methods:** The first case was of a primigravida with a unicornuate uterus and rupture involving the lateral wall and right rudimentary horn. She underwent an obstetric hysterectomy. The second case was of a multiparous woman with failed attempt at medical termination of pregnancy with fundal uterine rupture which was repaired. **Conclusion:** Uterine rupture involving the lateral wall and the rudimentary horn of a unicornuate uterus is a rare clinical condition and very few cases of rupture of uterine anomalies have been reported. Injudicious use of pills for medical termination of pregnancy can lead to uterine ruptu re and put the mother's life in jeopardy Prompt diagnosis, regular antenatal checkups, creating awareness regarding antenatal care, and hazards of unwanted pregnancy terminations and expedited management will go a long way in improving the maternal outcomes of our country.

Key words: Fundal, Uterine horn, Uterine rupture

INTRODUCTION

Uterine rupture, being an uncommon and severe obstetrical event, is associated with high perinatal and maternal morbidity and mortality.[1]

Uterine rupture accounts for maternal mortality rates as high as 30% in rural India.[2]

Maternal death resulting from uterine rupture is 0–1% in developed nations and as high as 5–10% in developing countries.[3]

For an unscarred uterus, incidence of rupture is approximately 1 in 17,000–20,000 deliveries[3] or, as reported by the World Health Organization, 0.006%,[1] while the incidence is 5.1 per 10,000 deliveries for a scarred uterus.[3]

Pregnancy in the presence of uterine anomalies is unusual and rare in clinical practice.[2]

Most of the uterine anomalies are asymptomatic and hence never noticed. Although an increase in the incidence of rupture in Mullerian anomalies has been noted, the precise risk remains unclear.[2]

We present a case series of uterine rupture seen in two cases at our center.

CASE 1

A 24-year-old primigravida with 5-month amenorrhea came to our emergency with complaints of sudden onset of pain abdomen and one episode of vomiting since morning. She had undergone a routine antenatal check-up and investigation at our hospital in this pregnancy. She was previously admitted for similar complaints a month back and was found to have anemia, urinary tract infection. An ultrasound of the abdomen had revealed ascites and GB sludge. No other abnormality was noted. She was treated conservatively and discharged. There was no history of intake of MTP pills intake and trauma.

On examination, she was pale, her pulse rate was 100/min, and blood pressure was 90/60. On per abdomen examination, tenderness, guarding, and rigidity all over the abdomen were present, uterine fundus was felt at 22 weeks gestation.

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On P/S examination, no bleeding was noted. On bimanual pelvic examination, uterus was about 20–22 weeks size with no tenderness and was deviated to the left. Ultrasound was done which showed ascites and an intrauterine pregnancy of 20 weeks gestation. Since rupture was suspected, an emergency MRI was done which suggested the possibility of a uterine rupture. Emergency laparotomy was performed which revealed 2500 ml of hemoperitoneum. Intact amniotic sac with fetus and placenta was present inside the peritoneal cavity. The sac and placenta were evacuated. The fetus weighed 300 g. Bowel was found adherent to the uterine fundus. Unicornuate uterus with the rupture of the right sided rudimentary horn was noted [Figure 1]. Since the tissues were extremely friable with irreparable damage to the right uterine wall and repair was not possible, obstetric hysterectomy was done and tissue sent for histopathology. Three units of blood and fresh frozen plasma were transfused in the perioperative period, and rest of the post-operative period was uneventful.

CASE 2

A 31-year-old multipara G4P3L3 came to our emergency with complaints of amenorrhea of 3 months, pain abdomen, vomiting, and vaginal bleeding since evening. Her past obstetrics history consisted of three full-term vaginal deliveries. She had neither visited any antenatal clinic nor gone through any antenatal investigations before coming to us. There was a history of insertion of 200 mcg misoprostol from a local doctor. On general physical examination, she was conscious, oriented, and pale. Her pulse rate was 110/min, and BP was 100/60 mmHg. On per abdominal examination, the abdomen was soft and uterus was just palpable. On per speculum (P/S) examination, bleeding was absent. On per vaginum (P/V) examination, uterus of 12–14-week size was felt. Her investigations showed low hemoglobin level (6.3 g%). Ultrasound showed single live intrauterine 12-week intrauterine pregnancy was noted. One unit of blood was transfused on the day of admission and vitals were monitored. On the day following admission, her pulse rate was 120/min, abdomen was rigid with guarding and tenderness. Ultrasound showed moderate free fluid in the abdomen and pouch of Douglas. An emergency CT scan was suggestive of features of uterine rupture [Figure 2]. Emergency laparotomy was performed. There was hemoperitoneum, and 1200 ml blood and clots were drained out. Fundal rupture extending up to the right cornual end of the uterus was noted [Figure 3]. Part of placenta was seen hanging out of the rupture site, fetus and placenta were lying in the peritoneal cavity. Repair was done using the three-layer method. The endometrial layer and part of the myometrium were closed with horizontal sutures (no.1 polyglactin) followed by locking sutures for the myometrium to close the defect, and the serosa was closed with intermittent sutures to minimize raw surfaces on the uterus. Since the cornual end showed persistent oozing, bilateral salpingectomy was done. Tissue was set for histopathological examination. Post-operative period was uneventful.

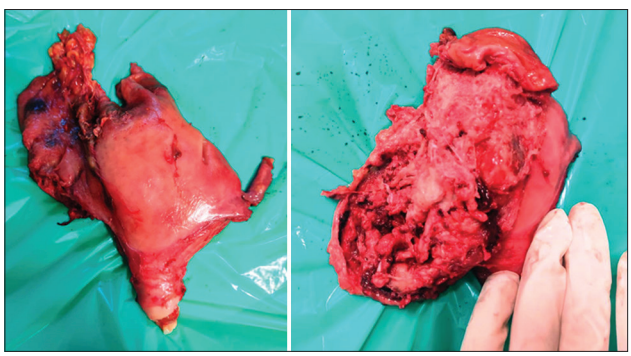

Figure 1: Unicornuate uterus with lateral and right rudimentary horn rupture

DISCUSSION

Diagnosis of uterine rupture in an unscarred uterus in early pregnancy is difficult and hence prevention is nearly impossible.

In the limited number of case reports addressing uterine rupture of unscarred uteri, most of them occurred after 24 weeks.[4]

Uterine malformations are often diagnosed among women during follow-up for infertility or repeated miscarriages.[5]

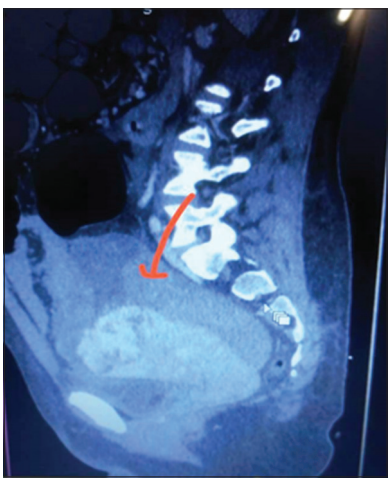

Figure 2: CT scan showing fundal uterine rupture

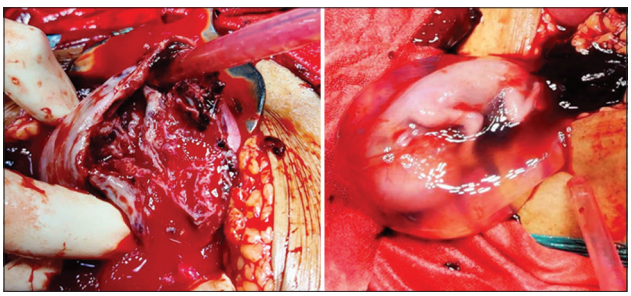

Figure 3: Fundal uterine rupture with fetus en sac

Unicornuate uterus with a rudimentary horn carries the risk of pregnancy developing in the horn, with risk of rupture of the rudimentary horn.[5]

Incidence of pregnancy in a rudimentary uterine horn is 1:40,000.[6]

Uterine rupture in these cases occurs in the first or second trimester of pregnancy, remote from term.[6]

Ultrasound can be a diagnostic tool in about 90% cases, but a lot depends on the machine, software, and expertise of the radiologist.[7]

MRI has become the gold standard for evaluating uterine anomalies with a diagnostic accuracy of almost 100 %.[7]

Diagnosis of uterine rupture during pregnancy requires high degree of suspicion since it may be associated with catastrophic hemorrhage and is clinically challenging, particularly during early pregnancy.[6]

On evaluating precipitating factors from other cases, Sun *et al*. reported that some non-specific symptoms such as epigastric pain and severe vomiting might be critical clues for uterine rupture.[4]

They reported the case of a patient with spontaneous uterine rupture without significant risk factors in the early pregnancy. This was in accordance with our patients who also presented with vomiting and abdominal pain.[4]

Lovelace *et al*. reported a case of uterine rupture where diagnosis was difficult and possibility of a unicornuate uterus with non-communicating rudimentary horn was cited, which has 50–70% spontaneous rupture rate in the second trimester.[7]

Absence of vaginal bleeding despite severe hemorrhage at the rupture site was supportive of the diagnosis.

This was coherent with our first case where there was no vaginal bleeding but hemoperitoneum was present, unicornuate uterus with rudimentary horn and spontaneous rupture in the second trimester was diagnosed intraoperatively.[7]

Risk factors for unscarred uterine rupture include grand multiparity, placental abnormality, uterine anomaly, obstructed labor, macrosomic-hydrocephalic fetus, injudicious use of oxytocics or other agents, such as prostaglandins or misoprostol, or trauma.[4]

Sun *et al*. reported a case of early uterine rupture where multiparity was the only risk factor with no history of previous uterine surgery, intrauterine device insertion, abnormal placentation, anomalies, use of uterotonic agents, or trauma.[4]

On reviewing other case reports, they found that one-third of them had no identifying risk factors. The most common rupture site was the fundus (50%, 3/6) followed by the cornual area (33%).[4]

All these ruptures were before 24 weeks of gestation and repair was possible in two-thirds of cases. Nearly all fetuses were lost, however, one pregnancy continued and resulted in a surviving fetus.[4]

This was in accordance with our second case where multiparity and use of misoprostol were the risk factors and the rupture involved the fundus in early pregnancy.[4]

Hence, both cases were low risk and it was difficult to suspect the possibility of potential uterine rupture in this patient.

RECOMMENDATIONS

Delineation of anomalies is difficult. Considering the rarity of this kind of malformation, ultrasound diagnosis is of utmost importance to manage the situation preventively and avoid complications.[5]

When a rudimentary horn pregnancy is diagnosed, it is recommended to surgically remove the uterine horn.[7]

Knowledge of existence of a uterine malformation pre-conceptionally is invaluable for approaching a uterine rupture.[6]

Gastrointestinal symptoms may accompany this rare and dangerous condition, namely, uterine rupture.[4]

Detailed evaluation and counseling for these women is recommended with a multidisciplinary approach involving the obstetrician, grief counselor, and radiologist.[7]

Choosing the best procedure for the management of uterine rupture in the shortest duration possible without adding to the patient's morbidity is of paramount importance.

CONCLUSION

Case series of uterine rupture are scant. In addition, uterine rupture involving the lateral wall and the rudimentary horn of a unicornuate uterus is rare and very few cases of rupture of uterine anomalies have been reported.

CLINICAL SIGNIFICANCE

Injudicious use of pills for medical termination of pregnancy can lead to uterine rupture and put the mother's life in jeopardy.

Prompt diagnosis, regular antenatal checkups, creating awareness regarding antenatal care, and hazards of unwanted pregnancy terminations and expedited management will go a long way in improving the maternal outcomes of our country.

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