

# Second Trimester Spontaneous Uterine Rupture in a Woman with Uterine Anomaly: A Case Report

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## Abstract

Uterine rupture is a life-threatening obstetrical emergency carrying a high rate of mortality and morbidity for the mother and the fetus. Spontaneous uterine rupture usually occurs in scarred uterus in late pregnancy. Spontaneous unscarred uterine rupture in the early pregnancy is a rare complication and among them anomalies of the uterus are one of the causes. Here, we report a case of gravida 2, abortion 1, presented at 20 weeks of gestation with acute pain abdomen. Ultrasound abdomen showed a single macerated extrauterine fetus of 17 weeks in the abdominal cavity suggestive of the intra-abdominal pregnancy. Emergency laparotomy revealed a uterine anomaly with right horn rupture. Clinical signs of uterine rupture in early pregnancy are non-specific and must be distinguished from other acute abdominal emergencies.

**Keywords:** Pregnancy trimester, Rupture, Second, Spontaneous, Uterine Diseases/congenital

## INTRODUCTION

Uterine rupture, defined as non-surgical disruption of some or all the layers of the uterus (serosa, myometium and endometrium), is a life-threatening condition for both the mother and the fetus.<sup>1</sup> There has been an estimated incidence of 17.4/100,000 pregnant women dying of hemorrhage secondary to rupture uterus as per the recent center for maternal and child enquiries report.<sup>2</sup> Maternal mortality from uterine rupture is as high as 30% in rural India.<sup>3</sup>

Uterine rupture has been shown to occur in labor (whether preterm, term or spontaneous).<sup>4</sup> Cases of rupture are more likely to occur in a scarred uterus, most commonly after a previous caesarean delivery or open myomectomy.<sup>5</sup> Unscarred uterine rupture is a rare event that usually occurs in late pregnancy or during labor. Risk factors include high-parity, placental abnormalities, uterine anomaly.<sup>6</sup>

Pregnancy with uterine anomalies is rare in clinical practice, and only a few cases are reported in the literature. In developing countries like India, majority of the pregnant women are not booked for early antenatal care due to financial constraints. Most of the uterine anomalies go unnoticed because they are often symptomless.<sup>7</sup> There is an increased incidence of rupture in Mullerian anomalies. Although the uterine rupture rate in anomalous, unscarred uteri during pregnancy appears to be increased relative to that for normal uteri, the precise risk of different uterine malformations remains uncertain. Rupture is more often seen in a unicornuate uterus and uterus didelphys. This occurs most often in the early third trimester.<sup>8</sup>

Spontaneous rupture of the uterus in the second trimester is very rare. Placenta percreta, as well as scar pregnancy, have been thought as predisposing factors of spontaneous mid-trimester uterine rupture. However without any medication for induction and placenta percreta, spontaneous rupture in mid-trimester is a noteworthy condition.<sup>9</sup>

## CASE REPORT

A 31-year-old woman, gravida 2, abortion 1, presented at 20 weeks of gestation with acute pain abdomen. Her first

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pregnancy resulted in a spontaneous abortion at 8 weeks, no surgical procedures performed. On examination, vital signs were stable, vague mass felt per abdomen, borders could not be delineated. Per vaginal examination revealed a bulky anteverted uterus, with vague mass in fornices. Ultrasound abdomen showed a single macerated extrauterine fetus of 17 weeks in the abdominal cavity suggestive of the intra-abdominal pregnancy. Uterus was anteverted and of normal size. Emergency laparotomy revealed hemoperitoneum. Further inspection revealed a bicornuate uterus – bicornis unicollis variety with right horn fundal rupture (Figure 1) with fetus in the peritoneal cavity, placenta partially extruded from the uterine rupture (Figure 2). Right side fallopian tube was edematous. Anterior and posterior wall of myometrium thinned out. Fundal rupture site closed in two layers. The post-operative period was uneventful.

## DISCUSSION

Although a scar on the uterus is a major risk factor for uterine rupture, high parity is a major risk factor in unscarred uterus. The incidence of rupture of unscarred uterus is found to be 1:17,000-20,000 deliveries.<sup>10</sup> The causes seen in the reported cases are external injuries, induction of labor, multiparity, cephalo-pelvic disproportion, adherent placenta, fundal pressure, abruption of placenta, cocaine abuse, history of intrauterine intervention causing perforation.<sup>10</sup>

Other risk factors for unscarred uterine rupture include, uterine anomalies, obstetric maneuvers, malpresentations, excessive uterine expressions, curettage, injudicious use of

oxytocin, uterine diverticula, chronic corticosteroid use, whereas some have no obvious cause.<sup>6</sup> In our case, uterine anomaly may be implicated in the uterine rupture because the patient had a bicornuate uterus, and there were no other obvious risk factors.

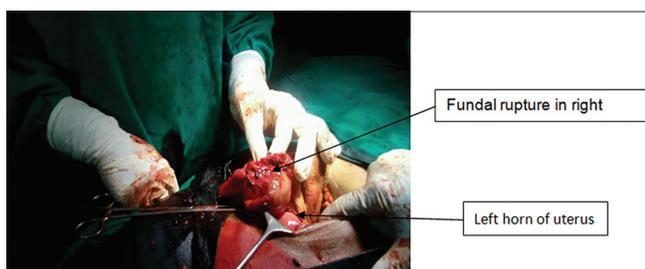
Schrinsky and Benson, in their study, found a maternal and fetal mortality rate of 20.8% and 64.6% respectively. The frequency is often higher in developing countries, where it can reach 75% of cases in some areas.<sup>10</sup>

First and early second trimester unscarred uterine ruptures are very rare, and there are only few cases in the literature reporting uterine rupture in such cases.<sup>6</sup> In our case, unscarred uterine rupture occurred at 20<sup>th</sup> week of pregnancy.

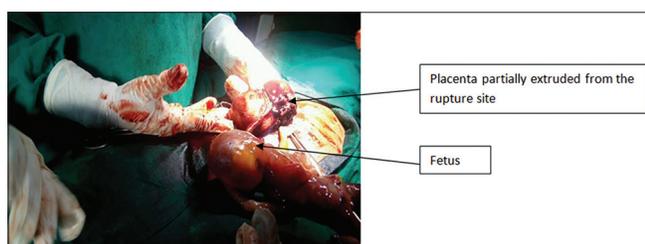
Incidence of uterine anomalies is 0.1-0.3% in the general population.<sup>7</sup> The uterus is formed during embryogenesis by the fusion of two paramesonephric ducts (also called Mullerian ducts). This process usually fuses the two Mullerian ducts into a single uterine body. Lack of fusion of these Mullerian ducts can lead to various types of malformations.

Of all uterine anomalies, Bicornuate uterus is the commonest constituting 1.2%.<sup>7</sup> It represents a uterine malformation where the uterus is present as a paired organ resulting from the failure of the embryogenic fusion of part of Mullerian ducts. Hence, there is a double uterus with a single cervix and vagina. The bicornuate uterus often has unusually thick strong round ligaments and a thick vesicorectal fold running between them and may be associated with renal tract anomalies.<sup>7</sup> According to the American Fertility Society classification of Mullerian anomalies bicornuate uterus, belongs to the Class IV.<sup>7</sup>

Unscarred uterine rupture occurs in the lower segment (the weakest part) of uterus.<sup>6</sup> If the rupture part is the fundus, as in our case, the diagnosis is often delayed because the hemorrhage is not revealed immediately as blood collects in the intraperitoneal space. The hemorrhage occurring because of rupture is massive and can be life threatening, unless diagnosed and treated promptly. Usually, the clinical signs of uterine rupture in early pregnancy are non-specific, and other acute abdominal emergencies should be ruled out. Abdominal pain, vaginal bleeding, vomiting are classical findings. Differential diagnosis are bleeding corpus luteum, heterotopic/ectopic pregnancy, molar pregnancy with secondary invasion, with ectopic pregnancy being the most relevant.<sup>6</sup> In our case, diagnosis of primary intraabdominal pregnancy was made as there was no other obvious cause, and also the ultrasound



**Figure 1: Per-operative picture showing rupture site**



**Figure 2: Per-operative picture showing partial extrusion of placenta from rupture site**

findings supported the same. An emergency laparoscopy or laparotomy is needed for the correct diagnosis and to enable the necessary treatment to take place as ultrasound has limited value.

Early surgical intervention is required to prevent the catastrophic sequelae of uterine rupture. Depending on the extent of the rupture, the parity, age and condition of the patient, treatment varies. Though in the past hysterectomy was suggested as the definitive therapeutic management, recent studies have shown that the repair of the rupture site can be performed with or without tubectomy. The recurrent risk of uterine rupture in the subsequent pregnancy is found to be between 4% and 19%. Hence, all the patients must be counseled on the need to undergo a caesarean section in all future pregnancies.<sup>6</sup> In our case, we repaired the rupture site as a patient was nulliparous.

## CONCLUSION

In conclusion, unscarred uterine rupture in early pregnancy is a rare and potentially catastrophic event. Uterine anomalies are one of the reasons of unscarred uterine rupture. The current case highlights uterine anomaly as a risk factor for spontaneous uterine rupture in early pregnancy. Measures aimed at reducing the high maternal and perinatal mortality associated with uterine rupture include health education of the masses, proper antenatal

care, early referral of at-risk patients, and supervised hospital delivery. Importance should be given to the pain symptoms that can guide the diagnosis, especially in women with no particular history.

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