

## SPONTANEOUS RUPTURE OF AN UNSCARRED NON-LABORING GRAVID UTERUS AT TERM: A CASE REPORT

Tafese Dejene Jidha, MD<sup>1</sup>

### ABSTRACT

**BACKGROUND:** Rupture of the pregnant uterus is life-threatening for the mother and fetus. Most ruptures occur in women who have had a previous transmyometrial surgical incision, typically for cesarean delivery. Rupture of the unscarred non-laboring uterus is rare, but the incidence is increasing. It is associated with higher major maternal and neonatal morbidity than cases of rupture of the scarred uterus.

**CASE PRESENTATION:** A 36-year-old gravida 4 para 3 mother presented at gestational age of 38 weeks with nonspecific upper abdominal pain of 12 hours which was associated with multiple episodes of vomiting which was initially ingested matter latter became blood mixed. She had no bearing down pain or passage of liquor. She denied any vaginal bleeding or urinary symptoms. The previous deliveries were at term and at home. During her third delivery, after the delivery of the baby, she failed to deliver placenta and was taken to a nearby primary hospital. There placenta was delivered manually and was transfused two units of blood. Otherwise, she has no history of pelvic surgery, no history of trauma. Initially, she was diagnosed to have severe anemia secondary to acute blood loss secondary to upper gastrointestinal bleeding. Finally, diagnosed to have uterine rupture and total abdominal hysterectomy done.

**CONCLUSION:** A high index of suspicion is needed in pregnant patients presenting with sudden onset of abdominal pain so as not to miss uterine rupture and its complications.

**KEYWORDS:** Uterine rupture, unscarred uterus, upper gastrointestinal bleeding, intrauterine fetal death

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<sup>1</sup> College of Medicine and Health Sciences, Dire Dawa University, Dire Dawa, Ethiopia

## BACKGROUND

Uterine rupture is a rare but hazardous obstetric complication with catastrophic outcomes. It is a life-threatening obstetric emergency bearing a high risk for the mother and the fetus<sup>1</sup>. Rupture of the unscarred pregnant uterus is a rare event and is usually traumatic, estimated to occur in 1/5700 to 1/20,000 pregnancies<sup>2</sup>. Its incidence decreases with improvement in obstetric practice. However, its incidence remains high in developing countries where frequency of obstructed labor, high parity and injudicious use of uterotonic drugs are common<sup>3, 4</sup>. Here we are presenting an unusual case of a 36-year-old female patient with spontaneous upper uterine segment transverse uterine rupture. The purpose of presenting the case is to focus light on the possibility of rupture in unscarred uterus in a non-laboring uterus with no previous risk factors.

## CASE PRESENTATION

A 36-year-old gravida 4 para 3 Ethiopian pregnant mother was presented at Dilchora Referral Hospital at a gestational age of 38 weeks with nonspecific upper abdominal pain of 12 hours which was associated with multiple episodes of vomiting which was initially ingested matter latter became blood mixed. She had no bearing down pain or passage of liquor. She denied any vaginal bleeding or urinary symptoms. She had no prenatal care follow-up. The previous deliveries were at term and at home. During her third delivery, after the delivery of the baby, she failed to deliver placenta and was taken to a nearby primary hospital. There the placenta was delivered manually and was transfused two units of blood. Otherwise, she has no history of pelvic surgery, no history of trauma.

On examination, she was pale and distressed with a PR 140/min and BP 80/60 mmHg. Abdomen was distended, tense and tender. It was difficult to feel fetal body parts. There was no uterine contraction and the fetal heart beat was negative. There was a fluid thrill and shifting dullness. An emergency obstetric ultrasound scan revealed fetal

demise. Placenta covered cervical os totally with bulk anterior. An intact amniotic sac with a normal volume of amniotic fluid is clearly seen. There was also free fluid in the peritoneal cavity. Hematocrit was determined and 18% and the blood group was O positive. An internist was also consulted and she was diagnosed to have hypovolemic shock secondary to acute blood loss secondary to perforated peptic ulcer diseases, severe anemia secondary to acute blood loss, IUFD and placenta previa totalis. She started on resuscitation with crystalloid and took 2000ml of normal saline over one hour, transfused 2 units of compatible blood, given omeprazole 80mg intravenously(iv), metoclopramide 10mg iv. Despite these management, the patient's clinical condition was the same (still hypotensive and tachycardic) and decided for emergency laparotomy. On entry into the peritoneal cavity, a large (500 mL) hematoma was identified anterior to the uterus (figure-1), and a freshly dead male fetus (weight 2800 grams) in an intact amniotic sac was found in the abdominal cavity (figure-2). Placenta was found covering the lower uterine segment and cervix (figure -3). There was upper uterine segment transverse uterine rupture which was about 15 cm involving both sides of uterine arteries (figure -3). There was no evidence of a couvelaire uterus and no demonstrable congenital uterine anomaly. The rest of the pelvis looked normal, with no evidence of endometriosis or adhesions. About 1.5 liters of hemoperitoneum was sucked out and hysterectomy done. She received one unit of blood during intraoperative and one unit during the post-operative period. She was discharged 5 days after surgery.



Figure 1: large hematoma anterior to the uterus upon entry to the peritoneal cavity

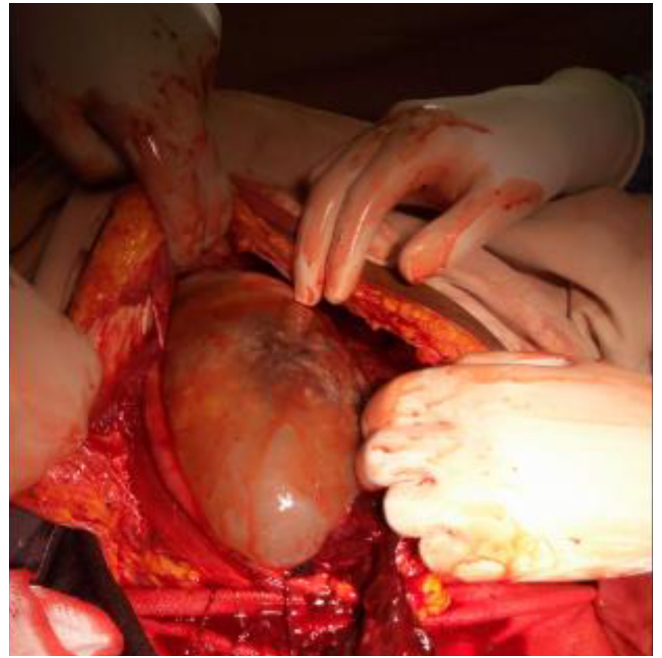


Figure-2: fetus with an intact amniotic sac found in the peritoneal cavity

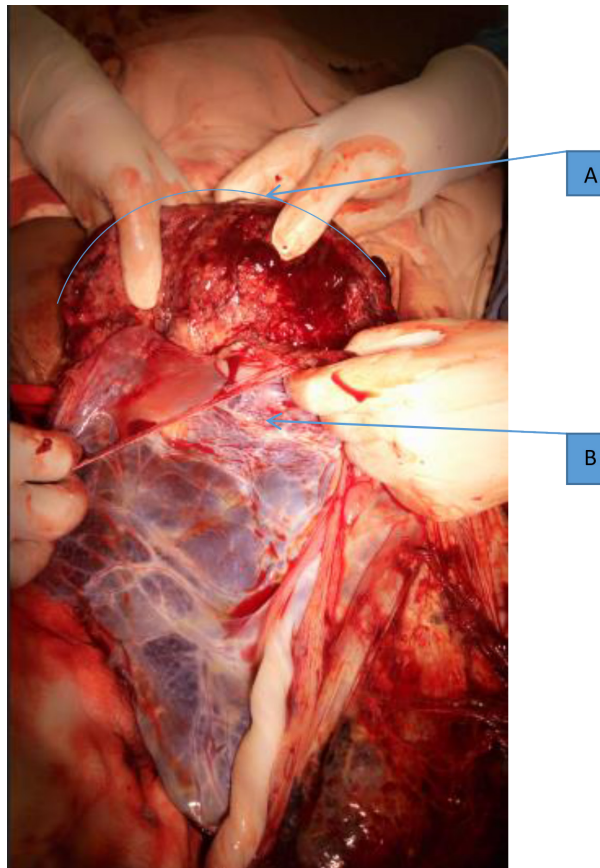


Figure 3: showing (A) – upper uterine segment transverse rupture and (B) – placenta attached to lower uterine segment and cervix

## DISCUSSION

This case presentation describes a rare presentation of Spontaneous rupture of an unscarred non-laboring gravid uterus at term diagnosed upon laparotomy. Rupture of the non-laboring unscarred uterus is rare and is a potentially catastrophic event and can be life-threatening for the mother and fetus. Rupture of an unscarred uterus may be caused by trauma or congenital or acquired weakness of the myometrium. Sources of trauma include motor vehicle accidents, domestic violence and obstetric maneuvers (e.g., internal or external version, breech extraction) [5] which were not present in this case. The myometrium may be inherently weak because of a congenital disorder, such as Ehlers-Danlos type IV [6], but this was not excluded in our patient because genetic testing was not available. The myometrium may become weakened from acquired causes like protracted labour or use of strong uterotonic drugs (e.g., misoprostol), which place prolonged stress on the myometrium [5] but in our case, the patient was not in labor and she was not induced or augmented. Grand multiparity, advanced maternal age, endometriosis, arteriovenous malformation and abnormal placentation like placenta accreta, fetal macrosomia, and uterine instrumentation are all predisposing factors for uterine rupture [5]. In our case, during her third delivery, she had retained placenta and it was removed manually and manual removal might have been forceful that might have caused weakening of myometrium. The uterine rupture was upper uterine segment transverse and she had placenta previa totalis with bulk anterior which might support that manual removal of placenta in the previous delivery might have caused myometrial weakening in upper uterine segment. Initial signs and symptoms of uterine rupture are typically nonspecific, which makes diagnosis difficult and sometimes delays definitive therapy [7]. But most commonly uterine rupture in the third trimester presents as sudden occurrence of severe and shearing abdominal pain with cessation of uterine contractions while vaginal bleeding

and shock occurs[8]. The fetus suffers in utero distress with bradycardia as well as decreased fetal movement and the infrequent symptoms of uterine rupture are epigastric pain, shoulder pain (right sided or bilateral), abdominal distention and paralytic ileus as well as, hematuria, etc. In our case, the patient presented with upper abdominal pain and vomiting of ingested matter mixed with blood of multiple episodes, which led to the diagnosis of perforated peptic ulcer disease and delayed the diagnosis and management of uterine rupture.

The basic treatment for a patient with a ruptured uterus is immediate resuscitation and surgery. At the time of exploratory laparotomy, the patient should be evaluated for possible uterine repair or hysterectomy. For young females, especially those who do not have children, it is better to preserve the uterus. But in some cases, the patients often have severe tears not suitable for repair. In general, the surgical option must be individualized and should be dependent upon the type, location and extent of the rupture, as well as on the patient's parity, the degree of bleeding, the available resources and desire to preserve her childbearing capacity[9]. If possible, repair is probably the best approach. In cases with wide bruises and contamination, intractable uterine bleeding and multiple uterine rupture sites and longitudinal uterine rupture hysterectomy is preferable [10]. In our case, the patient was resuscitated with 2 bags of crystalloid intravenous fluid and transfused 2 units of compatible blood before surgery, transfused one unit of blood intraoperatively and one unit of blood post operatively. Hysterectomy was done because, the rupture was an upper uterine segment transverse involving both uterine arteries. A comparison of this case with other case reports published previously is presented in Table 1.

## CONCLUSION

Spontaneous uterine rupture is a serious and potentially catastrophic event and a high index of suspicion is needed in pregnant patients presenting with sudden onset of abdominal pain so as not to miss uterine rupture and its complications.

Table 1 Review of literature on Spontaneous rupture of an unscarred gravid uterus.

Reference	Description of the study	Type of uterine rupture	Status of labor rupture	Gestational age at time of uterine	Procedure and outcome
Nanda et al., 2017 <sup>2</sup>	Case report	lower segment of posterior wall of uterus	In labor	9 month amenorrhea	4kg freshly dead male Hysterectomy done
Sreelatha et al., 2018 <sup>5</sup>	Case report	postero-lateral wall extending from fundus to cervix	In labor	40 weeks	2.5 male alive neonate Uterine repair
Posthumus et al., 2017 <sup>6</sup>	Case report	5 cm long and located in fundus close to the insertion of the left tube	No in labor	31 weeks + 3 days	1.1 kg freshly dead female fetus uterine repair
Silva et al., 2012 <sup>7</sup>	Case report	12 cm irregular tear on the left side of the anterior aspect of the uterus extending from the lower segment to the fundus, longitudinally	Not in labor	32 weeks	2.2 kg freshly dead male Subtotal hysterectomy
Kaur et al., 2012 <sup>10</sup>	Case report	long lateral wall tears extending from fundus up to internal os with partial avulsion of cervix from uterus	Not in labor Has history of falling down accident	16 weeks	200 grams dead abortus Uterine repair with bilateral tubal ligation
Chang et al., 2006 <sup>11</sup>	Case report	A laceration of approximately 12 cm extending from her right fundal area to the right supracervical area	In labor following induction	41 weeks	3.6 kg alive fetus Uterine repair
Agarwal et al., 2011 <sup>12</sup>	Case report	Fundal uterine rupture	In labor	9 months amenorrhea	Freshly dead fetus Hysterectomy done
Halassy et al., 2019 <sup>13</sup>	Case report	complete uterine rupture of the anterior, left sidewall of the uterus	In labor following induction	36 weeks +2 days	Freshly dead fetus cesarean supracervical hysterectomy
Mizutamari et al., 2014 <sup>14</sup>	Case report	A 2-cm diameter uterine perforation was located at the right cornual area, with prolapse of the amniotic sac	In labor	32 weeks	1.8 kg alive male fetus Uterine repair
Our case	Case report	upper uterine segment transverse uterine rupture which was about 15 cm involving both sides uterine arteries	Not in labor	38 weeks	Freshly dead fetus Hysterectomy done

### **COMPETING INTERESTS**

The author declare no competing interest

Author's contribution

TD did the literature review and prepared the manuscript

### **CORRESPONDING AUTHOR**

Tafese Dejene Jidha, MD

Dire Dawa University, Dire Dawa, Ethiopia

Email: dejtafese@gmail.com



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