



## Case report

## Spontaneous unscarred uterine rupture in a primigravid patient at 11 weeks of gestation managed surgically: A rare case report

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## A B S T R A C T

**Introduction:** Spontaneous rupture of the primigravid uterus is a rare but catastrophic obstetrical emergency. It usually occurs late in pregnancy or during labour, mainly in multiparous women. But, spontaneous unscarred uterine rupture in a primigravid patient that also in first trimester is very rare. There are only 12 papers in Pub Med database regarding spontaneous unscarred uterine rupture in primigravid in early pregnancy.

**Case presentation:** A 23-year-old primigravid female at 11th week of pregnancy, with no significant medical or surgical history, presented with sudden onset of generalised abdominal pain for four hours with multiple episodes of vomiting. On physical examination, patient was pale, in haemorrhagic shock with diffuse abdominal tenderness. Ultrasonography showed extra uterine gestational sac with massive haemoperitoneum. Eventually, patient was subjected to emergency laparotomy after resuscitation.

**Clinical discussion:** Spontaneous rupture of unscarred gravid uterus is a catastrophic rare condition that can be missed leading to maternal and foetal mortality. There are no pathognomonic features indicating the condition therefore it should be differentiated from other causes of acute abdominal emergencies.

**Conclusion:** Spontaneous rupture of unscarred gravid uterus should be differentiated from other acute abdominal emergencies. Patient may land up in emergency department in the state of shock, emergency physicians should be aware of its symptoms or presentations.

## 1. Introduction

Uterine rupture is a life threatening obstetrical emergency encountered infrequently in the obstetrics department. The diagnosis of uterine rupture is often missed or delayed leading to maternal and foetal morbidity and mortality [1]. Few researchers have reported spontaneous uterine rupture without underlying causes, regardless of gestational age or multiparous status. It is reported that spontaneous rupture of unscarred uterus occurs in 1 in 15,000 [2].

However, it is evident that the single most important factor in determining the risk of uterine rupture is whether the uterus has a previous scar or not. The past injuries such as Caesarean delivery, hysteroscopy procedures and myomectomy are considered to be the causes of uterine rupture. It may occur in patient with high parity, placenta increta or percreta, surgical abortus provocatus, delivery manipulation, misoprostol induction [2].

The spontaneous rupture of an unscarred gravid uterus is extremely rare especially in the first trimester with no definite history of any associated risk factor. To our knowledge, there are no more than 12

papers regarding spontaneous rupture of unscarred uterus in primigravid in early pregnancy were published in Pub Med Database until January 2021, which makes spontaneous rupture of unscarred uterus a significantly rare case that needs to be studied further. This paper reports a case of spontaneous rupture of unscarred uterus in early pregnancy in a 23-year old primigravid female managed surgically in a private practice setting. This work was written in accordance with the SCARE criteria [3].

## 2. Case presentation

A 23 year-old primigravid female patient without any significant previous ill-ness, presented with sudden onset of generalised abdominal pain for four hours accompanied by multiple episodes of vomiting. She was in her first trimester. She had no history of fever, chills, vaginal bleeding or trauma. Past surgical history was unremarkable.

On clinical examination, patient was in haemorrhagic shock with tachycardia and low blood pressure. The abdominal examination revealed diffuse tenderness; and on internal examination there was

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cervical motion tenderness. Laboratory chemical examination did not show any abnormal results except haemoglobin 5.5 g/dl and ultrasonography showed extra uterine gestational sac with massive haemoperitoneum.

Emergency laparotomy through a pfannenstiell incision was performed under general anaesthesia. The patient received two units of fresh blood intraoperatively. On opening the peritoneal cavity, there was three litres of haemoperitoneum with product of conception floating in the abdomen. There was a rent of about  $5 \times 5$  cm at the right posterior wall of the uterine fundus both tubes and ovaries were intact. (Figs. 1, 2).

The defect in the uterus was repaired in two layers (Fig. 3) by polyglactin suture; clots removed, irrigation done and abdomen closed. Patient was shifted to ICU and received further two units of packed cell. She received antibiotics.

Eventually, the patient was discharged on 4th postoperative day with iron supplements and antibiotics. On follow up after 4 weeks, she had no new complains and physical examination was insignificant. Ultrasonography was unremarkable and advised for follow-up after 3 months.

### 3. Discussion

Twenty five peer-reviewed publications from 1976 to 2012 described the incidence of uterine rupture and these reported 2084 cases among 2,951,297 pregnant women, yielding an overall uterine rupture rate of 1 in 1146 pregnancies (0.07%). Spontaneous uterine rupture is a life-threatening event that is difficult to diagnose, especially in an unscarred uterus [4]. It is a rare dangerous obstetric complication that is associated with maternal mortality and morbidity rates between 20.8% and 64.6% [5]. The most important factor implicated in uterine rupture is previous uterine scarring [6]. Rupture of an unscarred uterus is associated with various factors such as high parity, abnormal placentation, uterine anomalies, malpresentation, obstetric manoeuvres and injudicious use of oxytocics or it may be of unknown cause [7].

Spontaneous uterine rupture in the first trimester is a rarity especially in the absence of associated risk factors. The incidence of uterine rupture in unscarred uterus is 0.7 per 100,000 deliveries and 5.1 per 100,000 deliveries in scarred uterus [8]. In our case past obstetric history was not significant and there were no known risk factors for uterine rupture.

Retzke et al. reported uterine rupture in a woman with three prior vaginal deliveries and no history of uterine surgery, trauma or other risk factors for uterine rupture, who presented at 17 weeks' gestation with vaginal bleeding and an acute abdomen [9]. Gurudut et al. reported on a case of a 33-year-old multiparous pregnant woman in which maternal and foetal mortality were due to spontaneous rupture of an unscarred



Fig. 1. Product of conception outside of ruptured uterus.

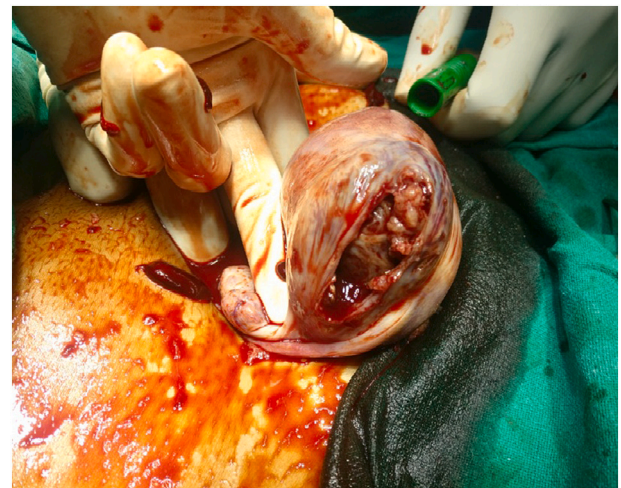


Fig. 2. A rent of about  $5 \times 5$  cm at the right posterior wall of the uterine fundus.



Fig. 3. Uterus repaired in 2 layers by Polyglactin.

uterus at a gestational age of 36 weeks [10]. The World Health Organization's systematic review of maternal mortality showed that uterine rupture is more prevalent in less developed than in developed countries [11].

In earlier reports, 58–87% of ruptures were managed with hysterectomy. Several authors consider hysterectomy the procedure of choice, whereas others contend that suture repair is a safer immediate treatment. Repair, however, raises the possibility of rupture recurrence in a subsequent pregnancy, which has a reported incidence of 4.3–19% [7]. Uterine repair without bilateral tubal ligation was done for this patient because of her parity, the nature of the tear. Moreover, in view of the high premium placed on child-bearing and the high infant mortality in most developing countries, a case could be made for conservation of her child-bearing capacity. She was however counselled on the necessity for antenatal care and elective caesarean section in her next pregnancy. Prevention of this disaster requires utilization of standard antenatal and delivery care services.

### 4. Conclusion

Uterine rupture should be kept in mind for all pregnant women with abdominal pain and signs of peritoneal irritation, regardless of

gestational age and history, to timely and quickly detect and manage as a rare but life-threatening condition. Emergency physicians should be aware of the possibility of spontaneous uterine rupture in pregnant patients with acute abdominal pain, even in the absence of risk factors.

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#### Consent

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#### Research registration

Not applicable.

#### Guarantor

Priyanka Katwal

#### Provenance and peer review

Not commissioned, externally peer reviewed.

#### Ethical approval

Ethical approval is not required.

#### CRediT authorship contribution statement

Priyanka Katwal designed the concept, analyzed and interpreted the

findings, wrote and reviewed the final paper.

#### Declaration of competing interest

The author declares no conflict of interest.

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