

## Spontaneous Rupture of an Unscarred Uterus in a Primigravida and Subsequent Obstetric Outcome: A Case Report

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### ABSTRACT

**Background:** Rupture of an unscarred uterus is a rare catastrophic event, with the incidence being reported in literature as 1/16,840 deliveries to 1/19,765 deliveries in the developed world. Due to the rarity of their occurrence, the diagnosis may be delayed and thus resulting in serious maternal and fetal complications. The risk of rupture recurring in a future pregnancy can range from 6% to 32% (Lower segment v/s upper segment rupture). Therefore these women are advised to give birth by repeat caesarean section prior to onset of labour.

**Case:** A 26 years old primigravida presented at 36+3 weeks with sudden onset of severe abdominal pain. A working diagnosis of concealed abruption was made in view of her symptoms and a non-reassuring fetal trace. Exploratory laparotomy was performed and a complete posterior wall rupture was noted, which was repaired with favourable outcome. Four years later the patient conceived again and had a planned caesarean delivery at 34 weeks.

**Discussion:** A nulliparous uterus is often described as “virtually immune to rupture” especially before the onset of contractions. Isolated case reports of rupture in primi gravida women have been reported in association with connective tissue diseases such as Ehlers-Danlos syndrome, chronic steroid use, in utero exposure to diethylstilboestrol and cocaine misuse. Our lady did not have any of the underlying risk factors as mentioned above which could have triggered primary uterine rupture of the posterior wall.

**Conclusion:** We report the rare occurrence of a spontaneous uterine rupture in a non-labouring primigravida with no apparent risk factors, along with details regarding her subsequent pregnancy. As majority of such ruptures are being managed by conservative surgeries; therefore women contemplating a repeat pregnancy after a primary uterine rupture should be managed on an individualized basis.

### Keywords

Uterus, Primigravida, Women.

### Introduction

Uterine rupture is an uncommon but serious event, which can sometimes result in fatality. Serious complications can arise for both mother and baby such as; haemorrhagic shock, the need for peri partum hysterectomy, hypoxic ischemic encephalopathy and permanent brain injury [1].

It occurs most commonly in women with a scarred uterus but this

is not a prerequisite. Rupture of an unscarred uterus is unexpected and therefore may result in a delayed diagnosis. Outcomes in these cases are worse in comparison to a rupture of a scar during vaginal birth after caesarean section (VBAC) [1].

The overall rate of uterine rupture in the developed world ranges from 1 in 1235-4366. The incidence of uterine rupture in an unscarred uterus is significantly lower, with an estimation ranging from 1 in 16,840-19,765 [2]. Only a handful of cases about uterine rupture in an unscarred uterus have been reported, in literature. We are presenting an extremely unusual case of spontaneous posterior

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wall rupture in a primigravida, without any apparent risk factors, along with details regarding her subsequent pregnancy.

### Case

A 26-year-old Primigravida presented to the labour ward at 36+3 weeks in the early hours of the morning, complaining of severe abdominal pain, which was of sudden onset. She felt that her abdomen was very tense; felt nauseous and was also experiencing difficulty in breathing. There was no history of abdominal trauma, vaginal bleeding or spontaneous rupture of membranes. Her antepartum course had been unremarkable. She was primarily under the care of the midwives and even had the intent of a home birth.

On arrival, her vitals included a blood pressure of 106/65 mmHg and pulse rate of 100pm. On examination, her abdomen was very tense and tender. Her cervix was closed, thick and located posteriorly on per speculum examination. A bedside scan did not reveal any abnormalities. A CTG showed a BHR of 160 bpm with a variability <5bpm and unprovoked decelerations with a slow recovery period.

A clinical diagnosis of concealed abruption was made; we therefore, decided to proceed with a category 1 caesarean section. Peri-section, around 1 litre of blood was noted within the peritoneal cavity. A routine lower segment caesarean section was completed, however; the delivered baby had a poor Apgar's score and was consequently admitted to SCBU.

No retro-placental clot was noted and the liquor was clear. A complete posterior wall rupture which was actively bleeding was seen extending from the lower segment to the pouch of Douglas. The bleed was stopped by applying a haemostatic figure of eight suture, and the defect closed in 2 layers. Peri-operatively 4 units of blood were transfused and the total blood loss was estimated to be around 2930 ml. Her post operative recovery was uneventful. A CT IVU was completed the day following surgery to rule out a ureteric injury. On her post natal visit with the consultant, the risk of recurrence in future pregnancies was explained.

4 years later, the patient had conceived again, and was booked under consultant led care. A repeat caesarean section at 37 weeks was decided as the mode of delivery, prior to the onset of labour. At 32-33 weeks, she presented with crampy abdominal pain and therefore a section was performed at 34 weeks after the administration of steroids. Sterilisation was also performed at the patient's request. On inspection the posterior uterine wall was intact.

### Discussion

A nulliparous uterus is often described as "virtually immune to rupture" especially before the onset of contractions.

Isolated case reports of rupture in primi gravida women have been reported in association with connective tissue diseases such as Ehlers-Danlos syndrome, chronic steroid use and finally, cocaine misuse [1]. Mullerian anomalies of the uterus and abnormal

placentation, in particular, placenta percreta, have been associated with a ruptured uterus and typically occur from the second trimester [1].

Most recently, several less common risk factors such as previously undergoing either a difficult uterine curettage or operative hysteroscopy have been identified. The risk for rupture is increased if the procedure had resulted in a uterine perforation. The incidence of rupture has been rarely reported in those that have had a trauma such as a motor vehicle accident.

Our lady did not have any of the underlying risk factors as mentioned above which could have triggered primary uterine rupture of the posterior wall.

The most common signs of primary uterine rupture include a non-reassuring cardiotocograph (CTG) (55-87%), vaginal bleeding (45%) and abdominal pain (30%). Our patient presented with 2 of these findings; severe abdominal pain and a non-reassuring CTG [2]. The differential diagnosis of a primigravida presenting with abdominal pain and a non-reassuring trace in a non-traumatic situation includes; concealed placental abruption, sub-hepatic haematoma with or without rupture, splenic rupture, pre-labour rupture of the broad ligament and finally, rupture of a uterine vein [1]. Although our working diagnosis at admission was a concealed abruption, all other causes were effectively ruled out at the time of laparotomy, when rupture of the posterior wall was diagnosed.

Studies have reported that the overall rate of composite maternal morbidities such as; increased blood loss, blood transfusions and need for hysterectomy were higher among primary uterine rupture patients [2]. Similarly, neonatal intensive care admissions were more frequent (58% vs 34%; P=0.43) and median 5-minute Apgar score were lower in primary uterine rupture in comparison to those who underwent a VBAC [2].

In order to assess the pregnancy outcomes in patients with previous uterine ruptures, a study was done in Lebanon over a period of 25 years and recurrence of rupture was reported in 8/24 (33%) of pregnancies [3]. Significant risk factors for recurrence included longitudinal rupture and a short interval between rupture and subsequent pregnancy. In another review by Ritchie (1971), 20 cases of recurrent ruptures were analysed; 17 happened after 36weeks, while the rest occurred at 33, 22 and 16 weeks. The risk of recurrence in future pregnancies is 6% and 32% in cases of lower segment and upper segment ruptures respectively [4]. Tan SQ et al. has reported a case report about recurrent rupture during pregnancy in a lady who had a fundal rupture previously due to an interstitial pregnancy at 18 weeks [5].

Women who have had a previous uterine rupture or dehiscence are, therefore, advised to be managed in a standardized manner including consultant led care and birth by repeat caesarean section prior to the onset of labour for good outcomes in subsequent pregnancies [6]. Risk factors and signs of uterine rupture should be acknowledged, so as to avoid unnecessary interventions leading

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to the delivery of extremely premature infants.

We reported this case to highlight that, although primary rupture in an unscarred uterus is very rare, in those without risk factors, it can still occur. As majority of such ruptures are managed by conservative surgeries; therefore, women contemplating a repeat pregnancy after a primary uterine rupture should be managed on an individual basis. It should be included in the differential diagnosis of a pregnant women presenting with severe abdominal pain and non-reassuring fetal trace. Although isolated case has been reported about unexplained prelabour uterine rupture in a primigravida but we did not come across any other citation in literature about subsequent pregnancy outcome in a similar scenario [7].

## References

1. Manoharan M, Wuntakal R, Erskine K. Uterine rupture: a revisit. *The Obstetrician & Gynecologist*. 2010; 12: 223-230.
2. Gibbins KJ, Weber T, Holmgren CM, et al. Maternal and fetal morbidity associated with uterine rupture of the unscarred uterus. *Am J Obstet Gynecol*. 2015; 213: 382.e1-6.
3. Usta IM, Hamdi MA, Abu Musa A, et al. Pregnancy outcome in patients with previous uterine rupture. *Acta Obstetrica et Gynecologica*. 2007; 86: 172-176.
4. Ritchie EH. Pregnancy after rupture of the pregnant uterus. A report of 36 pregnancies and a study of cases reported since 1932. *J Obstet Gynecol Br Common*. 1971; 78: 642-648.
5. Tan SQ, Thia EW, Tee CS, et al. An unusual presentation of recurrent uterine rupture during pregnancy. *Singapore Med.J*. 2015; 56: e100-1.
6. Fox NS, Gerber RS, Mourad M, et al. Pregnancy outcomes in patients with prior uterine rupture or dehiscence. *Obstet Gynecol*. 2014; 123: 785-789.
7. Walsh CA, O'Sullivan R, Foley ME. Unexplained prelabor uterine rupture in a term primigravida. *Obstet Gynecol*. 2006; 108: 725-727.