

## Case Series

# UTERINE RUPTURE - MATERNAL AND FETAL OUTCOME: A RETROSPECTIVE CASE SERIES AT A TERTIARY CARE CENTRE

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## ABSTRACT

**Background:** Uterine rupture is a rare but life-threatening condition in obstetrics. It is the total disruption of the wall of the gravid uterus with or without extrusion of its contents, associated with high maternal and fetal morbidity and mortality.

**Aims and Objectives:** 1. To observe the maternal outcome in the cases of uterine rupture. 2. To observe the fetal outcome in cases of uterine rupture.

**Materials and Methods:** A retrospective study of total of 8 cases (from August 2023 to January 2024) in KIMS KOPPAL diagnosed with uterine rupture and maternal and fetal outcome noted and followed up.

**Results:** Among 8 cases, 7 cases required emergency caesarean section, ICU admission and multiple blood and blood products transfusion whereas one case ended up in maternal mortality. Of the total cases, 2 cases required neonatal ICU admission whereas, remaining 6 cases had neonatal mortality because of complete uterine rupture.

**Conclusion:** Uterine rupture is one of the important reasons for contributing to maternal and neonatal mortality. Identification of the high-risk pregnancies, early diagnosis, immediate referral and prompt management must be undertaken to avoid and reduce adverse fetomaternal outcome.

**Keywords:** Uterine Rupture, Feto-Maternal Outcome, Mortality, Caesarean Section.

## INTRODUCTION

Uterine Rupture involves total destruction of the entire thickness of uterine wall, resulting in communication. Uterine rupture is classified as

a. Complete Uterine Rupture: When all uterine wall layers are separated.

b. Incomplete Uterine Rupture: When the uterine muscle is separated but visceral layer peritoneum is intact also called uterine dehiscence.

Uterine Rupture is associated with high fetal and maternal morbidity and mortality.<sup>[1]</sup>

It is important because it continues to be associated with maternal mortality, especially in developing countries, and with major maternal morbidity, particularly peripartum hysterectomy. It is also

associated with a high incidence of perinatal mortality and morbidity worldwide.<sup>[2]</sup>

Uterine rupture is a rare but dangerous peripartum complication that occurs in 1 out of 280–12,000 births. Uterine rupture leads to fetal death, peripartum hysterectomy, or even maternal death due to massive bleeding. The key factor in the cause of rupture is whether or not the uterus is scarred. Rupture of the scarred uterus is more common, and usually occurs after a trial of labour in a patient with a previous caesarean section. According to the literature, scarring of the uterus after previous caesarean section and induction of labour using prostaglandins are the most common uterine rupture risk factors.<sup>[3]</sup>

## MATERIAL AND METHODS

### Case # 1

A 26 yrs old patient G2P1L1 with 40weeks period of gestation with previous caesarean delivery presented to hospital with complaints of pain abdomen since 3 days. On examination, maternal tachycardia pr- 120 bpm, fetal tachycardia FHR-180 bpm, uterine scar tenderness elicited, was taken up for emergency caesarean section and was found out to be incomplete uterine rupture, tubectomised followed by which patient vitals were monitored and both mother and baby were discharged healthy.

### Case # 2

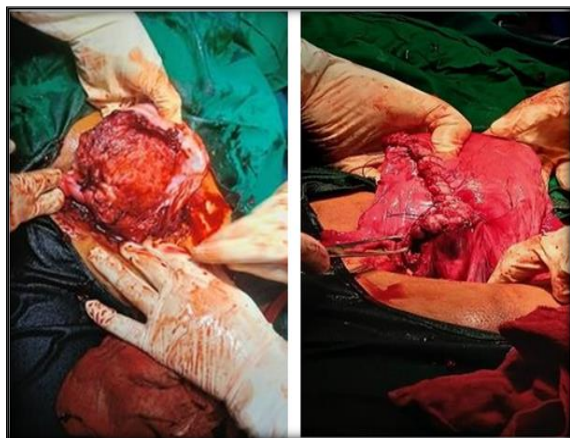
A 20 yrs old primigravida with 30 weeks 5 days period of gestation was referred in view of abruption placenta with IUD with one dose of PGE2 (dinoprostone gel) induction followed by which patient had to be taken for emergency OT in view of non-progression of labour which turned out to be complete uterine rupture extending from the right cornual end to the lower uterine segment which was repaired and tubectomy was done and patient had to be managed in the ICU and was discharged healthy.

### Case # 3

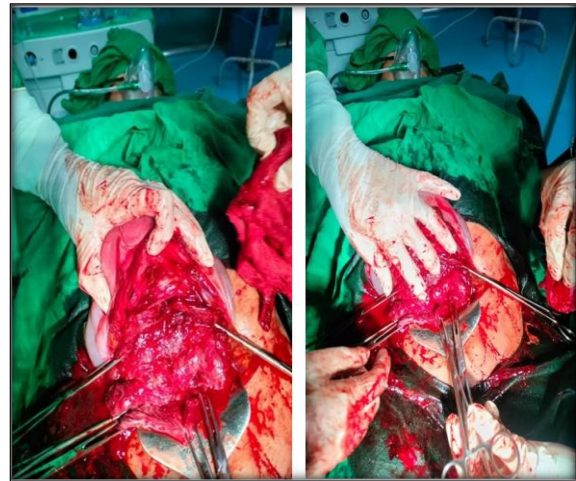
A 30 yrs old G3P2L2 with 40 weeks 2 days period of gestation with 2 prior caesarean delivery presented to the hospital with non-perception of fetal movement, had to be taken for emergency caesarean section and it was found to be complete uterine rupture at the previous scar site and repair was done and had to be tubectomised, required ICU admission and multiple blood and blood products transfusion and was discharged healthy.

### Case # 4

A 32yrs old G3P2L2 with 40 weeks 2 days with previous vaginal deliveries was referred from peripheral hospital after injudicious use of drugs for induction of labour, on admission patient presented as irreversible shock with IUD and was diagnosed with uterine rupture and inspite of resuscitation ended up in maternal and neonatal mortality.



**Figure 1: Uterine rupture involving posterior wall of the uterus**



**Figure 2: Horizontal rupture at the previous scar site**

### Case # 5

A 28yrs old G2P1L1 with 38weeks period of gestation with prior caesarean delivery presented to hospital with complaints of labour pains and emergency caesarean section was done and intraoperatively it was found to be complete uterine rupture extending to upper segment with formed clot over the ruptured uterus and ended up in peripartum hysterectomy and resulted in neonatal mortality.

### Case # 6

A 24yrs old patient primigravida with 40 weeks 4 days period of gestation was induced with a total of 75 mcg of tablet misoprostol in two divided doses and later had to be taken for emergency caesarean section and was found to be complete uterine rupture, concluded with tubectomy and ended up in neonatal mortality whereas mother was discharged healthy.

### Case # 7

A 30yrs old patient G3P2L2 with 39 weeks period of gestation with 2 prior caesarean deliveries presented to the hospital with complaints of pain abdomen since 2 days and on examination had maternal tachycardia and uterine scar tenderness was present and was posted for emergency caesarean section and intraoperatively it was uterine scar dehiscence that is incomplete uterine rupture, bilateral tubectomy was done and mother and baby were discharged healthy on post-operative day 9.

### Case # 8

A 28yrs old patient G3P2L2 with 36 weeks period of gestation with 2 prior caesarean deliveries presented to the hospital with complains of non-perception of fetal movements and decrease in the labour pain on examination there were signs of hypovolemic shock which had to be posted for emergency caesarean and was noted to have complete uterine rupture and an IUD baby in the abdominal cavity and peripartum hysterectomy had to be carried out and mother was discharged after several days of ICU admission.

**Table 1: Neonatal Outcome**

<b>NICU Admission</b>	<b>02</b>
Need for ventilation	02
Discharged healthy	02
Neonatal mortality	06

**Table 2: Maternal Outcome**

<b>ICU Admission</b>	<b>07</b>
Multiple blood and blood products transfusion	06
Bilateral tubectomy	05
Peripartum hysterectomy	02
Maternal mortality	01

**Table 3: Observations**

<b>Obstetric score</b>	<b>No: of cases of rupture</b>
Primigravida	02
Multi-gravida with unscarred uterus	01
Multigravida with scarred uterus	05

## DISCUSSION

Rupture of the gravid uterus is an unexpected, rare, and potentially life-threatening complication for both mother and fetus.<sup>[4]</sup>

There are several predisposing risk factors for uterine rupture such as a history of prior caesarean section/uterine surgeries, multiparity, obstructed labor, malpresentation, fetal macrosomia, labor dystocia, etc. Among them, the history of previous caesarean sections contributed to approximately 66% of cases of all uterine ruptures, especially in developed countries. However, in developing countries, obstructed labor and poor access to hospital delivery also contribute significantly.

The risk of uterine rupture also depends on the type of prior uterine incision (low transverse, low vertical, classical, or unknown). Uterine rupture rates of 0.5%, 0.7%, and 2.0% for unknown scars, low transverse incisions, and low vertical incisions, respectively.<sup>[5]</sup>

An approximately 4% to 9% risk of uterine rupture has been found with a T-shaped or classical caesarean uterine incision.<sup>[6]</sup> Classically, its signs and symptoms include pain, fetal heart rate (FHR) abnormalities, and vaginal bleeding.

In complete ruptures, FHR abnormalities were the most frequent sign complete triad includes FHR abnormalities-pain- vaginal bleeding. The signs and symptoms of partial ruptures are very different.<sup>[7]</sup>

At the first patient should be managed with immediate vital parameters measurement, intravenous fluid and blood transfusion, and other supportive and resuscitative measures for the management of shock along with preparation for emergency surgery after the diagnosis of uterine rupture. This helps in stabilizing the patient and reducing maternal mortality. It can be managed by repairing uterine rupture and conserving the uterus or subtotal or total hysterectomy based on the need of the situation.<sup>[8,9]</sup>

The type of surgery can be decided individually based on the type, location, and length of uterine

rupture, residual normal uterus, severity of hemorrhage, parity, mother's desire for future childbearing, general condition of the patient, associated other visceral injuries, etc. There are two different schools of thought regarding treatment, Some authors consider hysterectomy as the procedure of choice; whereas other recommend surgical repair of the uterus as a viable alternative.<sup>[8,9]</sup>

## CONCLUSION

Prompt identification of high-risk pregnancies, early picking up of signs and symptoms of impending rupture or complete rupture and planning for termination may have an impactful role in prevention of uterine rupture and thereby reducing maternal as well as fetal morbidity and mortality.

Basic fluid resuscitation and fluid replacement and meanwhile preparing for definitive surgery also helps in reducing morbidity and mortality.

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