ORIGINAL ARTICLE

Clinical Study of Cases of Ruptured Uterus in Pregnancy

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Abstract

Introduction: One of the main risks of pregnancy is uterine rupture. Even in advanced nations, rupture of the gravid uterus continues to be a possibly lethal complication for both the mother and the fetus, despite advancements in obstetric care.

Materials and methods:

Study design: This retrospective research was conducted in a hospital.

Study place: The Department of Obstetrics and Gynaecology at Katihar Medical College.

Study period: June 2021–May 2023.

Study population: A total of 18,521 antenatal admissions, of which 57 were admitted with a ruptured uterus.

An analysis was conducted on the case studies of 57 patients with ruptured uterus treated at KMCH, Katihar between June 2021 and May 2023. Age, gestational age, parity, blood transfusion requirement, risk factors, surgical finding, surgical management type, clinical presentation, and morbidity as well as mortality of the mother and fetus were among the many characteristics that were recorded.

Results: Incidence of the total 18,521 antenatal admissions during this period, 57 had ruptured the uterus giving an occurrence of 3.07/1,000 deliveries (0.3%). 54.4% of multiparous women and 59.7% of individuals with previously scarred uterus had a ruptured uterus. Repair was possible in only 29.8% of cases. The rate of perinatal mortality was 89.5, and 3.5% of deaths were maternal.

Conclusion: Uterine rupture poses a significant and potentially fatal risk to both the mother and the unborn child. The occurrence of uterine rupture is high in underdeveloped nations, such as India, and it is significantly higher in unscarred uteruses than in developed nations.

Keywords: Obstetric emergency, Perinatal outcome, Peripartum hysterectomy, Pregnancy outcomes, Rupture uterus.

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Introduction

One significant obstetric risk is uterine rupture. Even with advancements in contemporary obstetrics, rupture of the gravid uterus continues to be a possibly deadly condition for the baby and mother, particularly in underdeveloped nations (Table 1 and Fig. 1).[1] The incidence is high, because there are a lot of obstetric emergencies, which frequently come from rural areas with inadequate prenatal care.[1]

In advanced nations, the occurrence of uterine rupture is about 1% for “women who have had a earlier caesarean section, while it” is highly uncommon (<1 per 10,000) for those who have not.[2] Uterine rupture is a more common and significant issue in less developed and less advanced countries (Table 2 and Fig. 2). Total range of 0.1–1%.[2]

Perinatal death varied from 74 to 92%, while maternal mortality was between 1 and 13% (Table 3 and Fig. 3).[2]

The most crucial elements in enhancing maternal and perinatal outcomes are an early diagnosis, fast treatment of the disease, and timely referral from the level of the gross root.[3] The purpose of this retrospective investigation was to assess and examine numerous elements of a uterine rupture (Fig. 4 and Table 4).

Table 1: Shows the incidence of uterine rupture by age

Age	*No. of patients*	*Percentage (%)*
20–25	18	31.50%
26–30	28	49.10%
31–35	10	17.54%
36 above	01	1.75%

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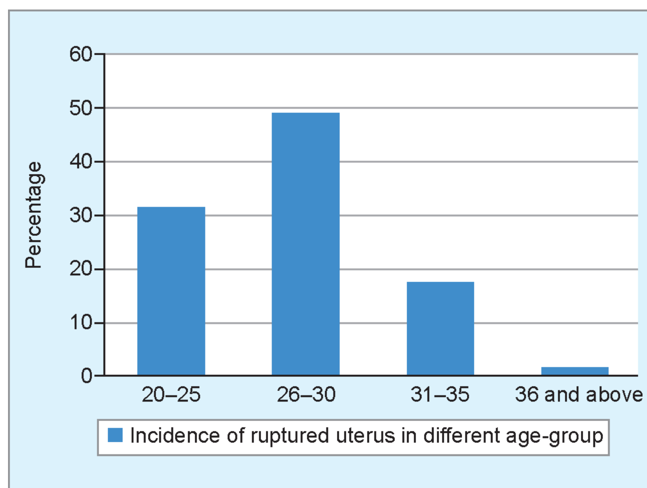

Fig. 1: Shows the incidence of uterine rupture by age

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Table 2: Ruptured uterus risk factors

Risk factors	*No. of patients*	*Percentage*
Previous LSCS	34	59.6
Multiparity	31	54.4
Obstructed labor	19	33.3
Use of labor-inducing agents (Oxytocics)	10	17.5

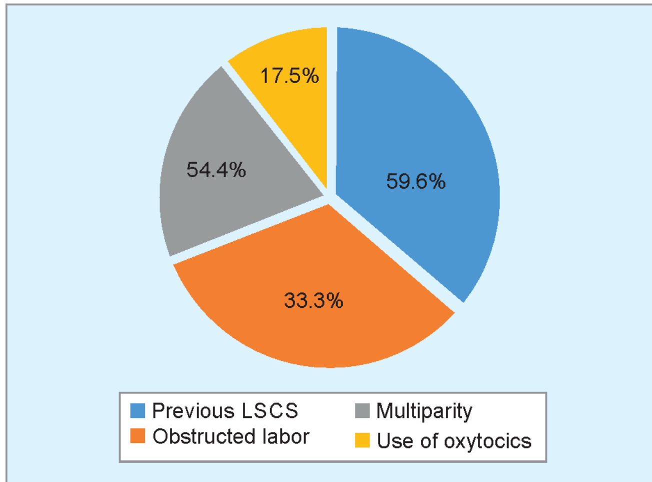

Fig. 2: Ruptured uterus risk factors

Table 3: Frequency of uterine rupture in the uterus with and without scars (unscarred)

Rupture in a scarred and unscarred uterus	*No. of patients*	*Percentage*
Scarred uterus	34	59.7
Unscarred uterus	23	40.3

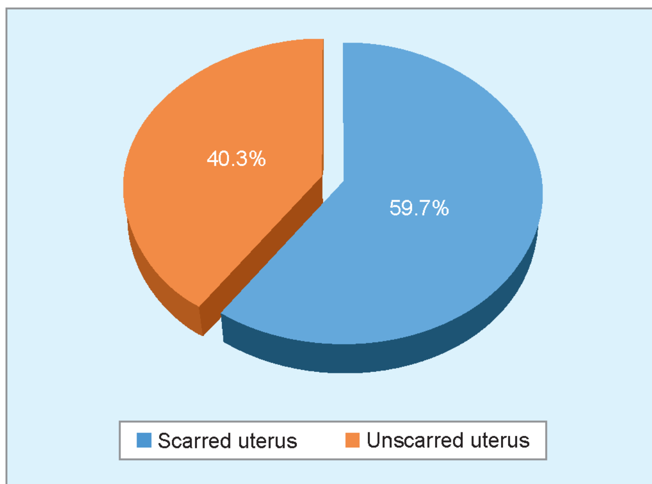

Fig. 3: Frequency of uterine rupture in the uterus with and without scars (unscarred)

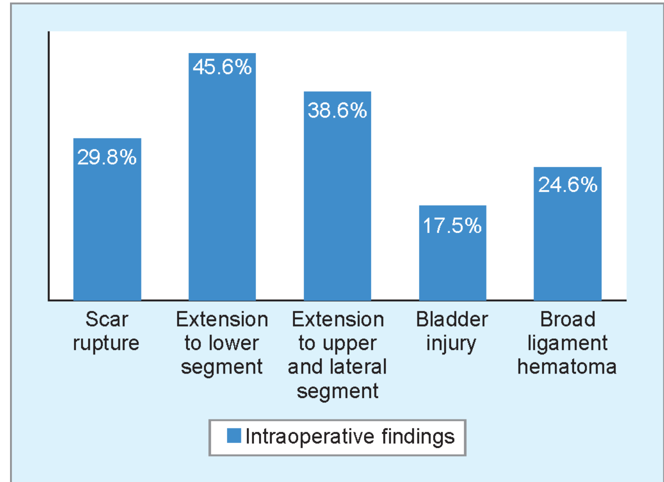

Fig. 4: Intraoperative finding during laparotomy

Table 4: Intraoperative finding during laparotomy

Intraoperative finding	*No. of patients*	*Percentage*
Scar rupture	17	29.8
Extension to lower segment	26	45.6
Extension to upper and lateral segment	22	38.6
Bladder injury	10	17.5
Broad ligament hematoma	14	24.6

Table 5: Surgical management in cases of ruptured uterus

Surgical management	*No. of patients*	*Percentage*
Repair with B/L tube ligation	11	19.3
Repair without B/L tube ligation	06	10.5
Subtotal hysterectomy	34	59.7
Total hysterectomy	06	10.5

Materials and Methods

Study design: This is a retrospective analysis conducted at a hospital.

Study place: Katihar Medical College, Katihar, Obstetrics and Gynaecology Department.

Study period: June 2021–May 2023.

Study population: A total of 18,521 antenatal admissions, of which 57 were admitted with a ruptured uterus.

- We examined the case sheets of the 57 cases of ruptured uterus that were treated at KMCH, Katihar between June 2021 and May 2023 (Table 5). A number of characteristics were recorded, including parity, clinical presentation, blood transfusion requirement, gestational age, age, surgical finding, type of surgical care, risk factors, and morbidity and mortality in the maternal and perinatal (Table 6).

Table 6: Maternal morbidity associated with ruptured uterus

Morbidity and mortality	*No. of patients*	*Percentage*
Shock	39	68.4
Blood transfusion	52	91.2
Anemia	54	94.7
Wound infection	08	14
Pyrexia	13	22.8

Results

Incidence Of the total 18,521 antenatal admissions during this period, 57 had ruptured the uterus giving an occurrence of 3.07/1000 deliveries (0.3%).

It is higher, at 1.69%, in developing nations like Nigeria, per a study by Ibrahim SM, Umar NI, et al. In wealthy nations, the occurrence is roughly 10 times lower. In Australia, it is 0.086%, according to research by Lynch JC, Pardy JP, et al.

Mortality

Two (3.5%) cases of maternal death and 51 (89.5%) cases of perinatal mortality were documented.

Discussion

A ruptured uterus is a treatable but possibly fatal illness that needs to be diagnosed and treated very soon. The occurrence of a ruptured uterus in the current investigation was 0.3%. Mahbuba and Alam (0.83%) and Alam et al. (1.14%) studies found a higher incidence.[4,5] As a tertiary referral center, the majority of cases that come to our hospital are already in a moribund state. Research carried out in developing countries also revealed that the occurrence of ruptured uterus was primarily determined by the low socioeconomic status of the population and inadequate health facilities in rural areas.

About 59.7% of the cases in this study with previously scarred uterus had ruptured uteruses. 40.3% of uterus that are not scarred. The same significant frequency of uterine rupture in the unscarred uterus was additionally observed in Saini VK et al. study. Most cases of untreated obstructed labor, which are common in rural areas, lead to uterine rupture in an unscarred uterus.[6] In 54.4% of the instances in the current study, multiparous women had a ruptured uterus. It was greater than the Malik HS research (42.7%).[7] The primary treatment methods included laparotomy and rapid resuscitation. Only 29.8% of the cases could be repaired, which is lesser than the 39.2% of cases in the investigation by Rathod S et al.[8] Perinatal mortality was recorded at 89.5%. Research by Rathod et al. found a similar outcome (90.5%). The current study's maternal death rate of 3.5% was comparable to Sahu L result of 2.76%.[8,9]

Conclusion

A major and possibly deadly consequence for both the mother and the unborn baby is uterine rupture. The occurrence of uterine rupture is extreme in underdeveloped nations, such as India, and it is significantly higher in unscarred uteruses than in developed nations. The occurrence of "rupture uterus" may be decreased with education and appropriate care, particularly for high-risk individuals who have had an earlier caesarean section. Early identification and management of protracted labor can also help to stop additional obstruction and rupture. Early referral and appropriate oxytocic usage are also crucial.[10]

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