

ORIGINAL ARTICLE

INCIDENCE AND MANAGEMENT OF RUPTURE UTERUS IN OBSTRUCTED LABOUR

Yasmeen Khooharo, Jabeen Zubair Yousfani, Sara Haider Malik*, Aneela Amber, Numan Majeed, Nimra Haider Malik*, Hira Pervez**, Isra Majeed***, Naeem Majeed

Department of Gynaecology, Muhammad Medical College, Mirpurkhas, *Ayub Medical College Abbottabad, **Jinnah Postgraduate Medical Centre, Karachi, ***Continental Medical College, Lahore, Pakistan

Background: Obstructed labour with ruptured uterus is a serious obstetrical complication with a high incidence of maternal and foetal morbidity and mortality. This study was conducted to find out the incidence of uterine rupture particularly in the patients of obstructed labour (OL), foeto-maternal outcome of such patients, and its management. **Methods:** This two year descriptive study was conducted in the Department of Obstetrics and Gynaecology Unit-I, at Muhammad Medical College Hospital from 1st January 2007 to 31st December 2008, on 40 diagnosed cases of OL. Patients were admitted through Casualty or were admitted in ward. Patients with previous caesarean section and myomectomy were excluded. **Results:** Ruptured uterus was found in 8 out of 40 patients of obstructed labour, they were relatively elder and grand-multiparous. Mean age of the patients was 36.5 years, while parity ranged between 5 and 12. Only one (12.5%) patient was primigravida with mean gestational age of 39.15 weeks. Seven (87.5%) patients had abdominal pain and tenderness, 5 (62.5%) vaginal bleeding, and 2 (25%) had shock. All cases were immediately managed with fluid replacement, blood transfusion and surgery. Six (75%) cases were diagnosed as ruptured uterus on clinical features while 2 (25%) with incomplete rupture were diagnosed on caesarean section for obstructed labour. Foetal mortality rate was high (7, 87.5%); 5 (62.5%) were fresh stillbirth and 2 (12.5%) died in nursery. Only 1 (12.5%) baby survived. There was 1 maternal death due to puerperal sepsis. **Conclusion:** The incidence of rupture uterus in obstructed labour was 20%. Immediate intervention is important factor for successful management of uterine rupture.

Keywords: Obstructed labour, rupture uterus, hysterectomy, maternal mortality, foetal mortality

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INTRODUCTION

Each year, 210 million women become pregnant, of whom 20 million experience pregnancy related illness and 500,000 die as a result of complications of pregnancy or childbirth.¹ Obstructed labour (OL) remains an important cause of not only maternal death but also short- and long-term disability and it is one of the major causes of maternal mortality and morbidity in developing countries.^{2,3} The number of maternal deaths as a result of obstructed labour and/or rupture of the uterus varies between 4% and 70% of all maternal deaths, amounting to maternal rate as high as 410/100,000 live births.⁴ William Smellie was the first to have observed a rent in the uterus *in vivo*, although earlier reports of autopsy specimens are recorded in the literature.⁵ Uterine rupture is a life-threatening obstetrical emergency encountered infrequently in the emergency department where the diagnosis is often missed or delayed leading to maternal and foetal mortality and/or morbidity.⁶ Obstructed labour is the leading cause of uterine rupture worldwide.⁷ Spontaneous rupture of an intact uterus may be due to injudicious use of oxytocin, prostaglandins, Cephalopelvic disproportion, mal-presentation, multi-parity, difficult instrumental delivery, and obstetrical manipulations.⁸

Uterine rupture is one of the preventable obstetrical complications that carry grave risks to the mother as well as her baby. Even if women survive the future reproductive potential is reduced or lost forever.⁹

The incidence of uterine rupture has dropped significantly in the developed countries and most often encountered while attempting vaginal birth after caesarean section.¹⁰ Rupture of unscarred uterus is extremely rare, estimated as <1/10,000 to <1/1,000. The situation is gloomy in developing countries where this obstetrical complication is frequently faced with disastrous consequences.¹¹

The aim of this study was to assess the incidence of uterine rupture in obstructed labour, and outcome of such patients.

MATERIAL AND METHODS

This descriptive study was conducted in the Department of Obstetrics and Gynaecology, Muhammad Medical College Hospital Mirpurkhas, Pakistan from 1st January 2007 to 31st December 2008. All patients admitted through casualty and those who were already admitted in ward with labour pains were included in the study. Following clinical findings helped in the diagnosis of uterine rupture:

- Clinical signs of shock (systolic blood pressure <90 mmHg and pulse >110/min.¹²
- Abdominal pain and tenderness.
- Foetal heart rate abnormality and easy palpation of foetal parts through the abdominal wall the foetus is partially or completely extruded from the uterus
- Vaginal bleeding.
- Cessation of uterine contractions.

Immediate treatment with resuscitation of patient was started and caesarean section for obstructed labour/laparotomy was performed for ruptured uterus.¹³ Mode of treatment depended primarily on the clinical condition of the patient and type, site, and extent of uterine rupture as well as on the age and parity of the patient. Types of uterine rupture were labelled as incomplete or complete.¹⁴ Time duration since labour pains till arrival at hospital and surgery till total hospital stay was noted. Patients with previous caesarean section and myomectomy were excluded from this study.

All gathered information was collected in the preformed Performa after written consent from patients or her husband. Descriptive statistics were used to analyse the data.

RESULTS

This study is based upon 40 diagnosed patients of obstructed labour and to assess the proportion of rupture uterus and foeto-maternal outcome of such patients. Total 8 (20%) patients were found with rupture uterus. Majority of the cases were grand-multipara ranged between Para 5 and 12. Only 1 (12.5%) case was primigravida with incomplete uterine rupture in obstructed labour due to brow presentation. All patients were un-booked and referred. Majority of patients (62.5%) had labour pains for the last 17–24 hours, remaining 37.5% had labour pains for the last 9–16 hours. The high incidence of rupture uterus was seen in 34–40 years of age with mean age 36.5 years. The gestational age of our patients was 38–41 weeks with mean gestational age 39.15 weeks. Clinical presentation of the patients is tabulated as Table-1.

Two (25%) cases with incomplete uterine rupture were diagnosed on caesarean section, while 6 (75%) were diagnosed on clinical features. Six (75%) cases were found with complete uterine and 2 (25%) cases with incomplete rupture. The most common site for uterine rupture was anterior lower segment.

Majority (5, 62%) cases were managed with total or subtotal hysterectomy, while 2 (25%) cases were found with ruptured urinary bladder along with uterine rupture. Some patients had more than one complication during postoperative period among long-term complications (Table-3). Vesico-vaginal fistula was seen in 1 (12.5%) case. Average hospital stay was 12 days. A high foetal mortality rate (7, 87.5%) was observed in the patients with rupture uterus, 5 (62.5%)

were fresh stillbirth, and 3 (37.5%) babies were delivered alive. Only 1 (12.5%) baby survived while 2 (25%) babies died in the nursery. There was 1 (12.5%) maternal death due to puerperal sepsis on the 5th postoperative day (Table-4).

Table-1: Clinical presentation of patients with uterine rupture

Complications	No. of Patients
Palpable uterine contractions	2
Audible foetal heart sounds	3
Palpable foetal parts	6
Abdominal tenderness and pain	8
PV bleeding	6

Table-2: Surgical management of uterine rupture

Total hysterectomy	1
Subtotal hysterectomy	4
Repair done without ligation	1
Repair done with tubal ligation	2
Urinary bladder repair	2

Table-3: Postoperative complications in patients with rupture uterus

Anaemia	8
Puerperal pyrexia	5
UTI	5
Wound infection	4
Wound dehiscence	2
Postpartum haemorrhage	2
Vesico-vaginal fistula	1
Maternal death due to puerperal sepsis	1
Acute Renal Failure	1

Table-4: Maternal and foetal outcome

Foetal Death	7
Stillbirth	5
Neonatal death	2
Maternal death	1

DISCUSSION

Prolonged obstructed labour is no more a contributor of uterine rupture in the developed countries.^{15,16} However, it had alarming contribution (42.3%) to uterine rupture¹⁷, that is twice higher than our study. These high incidences in other studies were due to scarred uterus^{14,17} which were excluded in our study. This was seen in accordance with the reports from WHO,¹⁸ Ezechi⁹ and Chuni¹⁹.

A high incidence of uterine rupture was seen in grand multipara (Para 5–12).²⁰ In our study, 6 (75%) cases had >5 children; and only 1 (12.5%) case of uterine rupture was seen in primigravida with obstructed labour. Multi-parity has been considered a risk factor uterine rupture.^{14,17,20}

No single clinical parameter is available for the diagnosis of uterine rupture, in majority of cases it is diagnosed on the basis of clinical signs. Maternal tachycardia, abdominal pain and tenderness, foetal heart rate abnormalities, vaginal bleeding, and cessation of uterine contractions were the main clinical features, also observed in this and other studies.^{14,21} Anterior lower segment was the commonest site of rupture; combined upper and lower uterine segment was seen in 4 (50%)

cases. Twenty percent incidence was observed in another study.¹⁴ In majority of cases, i.e., 75%, the rupture was complete while in 25% it was incomplete, almost same finding was observed in other studies, i.e., 73.5% and 26.4% for complete and incomplete uterine rupture respectively.^{14,21} Urinary bladder rupture along with uterine rupture was seen in 2 (25%) cases in our study. Similar incidence was reported in other studies.^{17,22}

Many authors opted for hysterectomy followed by uterine repair with or without tubal ligation in surgical management of rupture uterus depending upon the patients' condition.^{14,17,22} A similar trend was also observed in our study. Immediate surgery and blood replacement plays major role in maternal survival.^{17,23} The most common postoperative complication was anaemia seen in all cases.^{14,17,23} Majority of the patients had urinary tract infection, which might be because of prolonged catheterisation or multiple vaginal examinations in aseptic condition.¹⁴ Among the postoperative conditions, vesico-vaginal fistula, secondary amenorrhea, and infertility were observed in our study like others.^{14,17,23} Loss of fertility is a catastrophic event in our country like many others.^{15,18,23} Complete uterine rupture is associated with foetal death.^{14,17} Prognosis is a lot better for mother compared to the foetus.^{14,17,23} Foetal outcome in our study was comparable to other studies.^{14,24}

CONCLUSION

Rupture uteri is a serious life-threatening complication of obstructed labour for both the mother and the foetus. Late arrival and treatment increase the maternal and foetal morbidity and mortality.

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Address for Correspondence:

Dr. Sara Haider Malik, H. No. 21/3 Ghazali Street, Jinnahabad, Abbottabad-22040, Pakistan. **Cell:** +92-321-5118584
Email: sarahaidermalik@gmail.com