



RESEARCH ARTICLE

STUDY OF CLINICAL PROFILE OF RUPTURE UTERUS AT TERTIARY CARE CENTRE

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ABSTRACT

Objective: To study the demographic risk factors, sites, types, clinical features, management of rupture uterus and to study the maternal & fetal outcome and to make a strategy for prevention of this catastrophe.

Method: This study was carried out in Jan 2008 to Jan 2009 at Mahila Chikitsalaya, SMS Medical College, Jaipur. 70 cases of rupture uterus were taken and analysed during 1 year. They were examined after proper history and informed consent, beyond 28 wks of gestation. Patients were dealt according to general condition, parity, presence or absence of sepsis. Maternal and fetal outcome in the form of morbidity and mortality was recorded.

Results: Out of 70 cases studied majority of patients (n = 38) had h/o previous LSCS with no prior vaginal delivery. Maximum number of cases were diagnosed during pregnancy 67.14% cases and out of 70 cases, 40% cases presented with fetal distress or IUFD followed by maternal tachycardia in 32.86% and scar tenderness in 30% cases. Maternal morbidity was mainly due to anaemia 51.43% followed by sepsis in 20% cases. Fetal morbidity and mortality is maximum in form of still birth 44.29%.

Conclusion: Rupture uterus is a most devastating catastrophe with high incidence and mortality. It is potentially preventable by early and prompt diagnosis, effective treatment and public education and awareness.

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INTRODUCTION

Amongst all the obstetric emergencies rupture uterus is one of the most devastating catastrophe encountered threatening the pregnant women and her fetus leading to high maternal and perinatal morbidity and mortality more so in developing countries. Incidence varies from 0.3/1000 to 7/1000 deliveries. An early diagnosis and prompt treatment of condition is the most important factor in the improvement of maternal & perinatal outcome. Although the incidence of rupture uterus due to obstructed labour, malpresentation and contracted pelvis & delivery by untrained personal which were main cause of rupture in India in the past has decreased but the overall incidence remain more or less the same because of injudicious use of oxytocin & rising trends of caesarean section nowadays.

Rupture Uterus

Rupture uterus is defined as the desolution in continuity of uterine wall any time beyond 28 wks of gestation.

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Etiology - Rupture of Scarred Uterus - Spontaneous or iatrogenic. lower segment scar rupture predominantly in patients with previous history of LSCS.

Incidences - 1-2% of lower segment scar rupture and 8-10 times more for classical one.

Female at risk are those with previous history caesarean, thinned out lower segment in obstructed labour, in presence of sepsis or in placenta previa, history of inverted 'T' shaped incision in previous caesarean, previous 2 or more caesarean, classical caesarean, hysterotomy, myomectomy, perforation of uterus due to D&C, MRP, repair of previous uterine rupture, uterine perforation by IUCD or concealed APH.

Rupture of Apparently Uninjured Uterus - It occurs during pregnancy or in early labour due to weakness of muscle fibers, malnutrition, fibrosis, cervical stricture due to cauterisation, amputation etc.

In Developing Countries - most common cause of rupture uterus is obstructed labour.

Iatrogenic - Injudicious use of oxytocin & prostaglandins in previous scarred uterus, unsuspected hydrocephalus, disproportion, grand multiparity, in difficult forceps, in breech through incompletely dilated cervix.

Types - Complete rupture : Serous coat involved

Incomplete rupture : Serous coat intact

Occult rupture: Rupture does not present with classical physical signs of rupture

Management

Includes: -

1. Resuscitation by O₂ inhalation, IV fluids, blood transfusion etc.
2. I.V. antibiotics
3. Laparotomy followed by decision depend on the site, type, general condition presence or absence of sepsis
 - Subtotal / total hysterectomy
 - Repair if family not completed
 - Repair and sterilization if family completed

Consequences of Rupture - Haemorrhage, shock, anaemia, prolapse of bowel, DIC, hypofibrinogenemia, amniotic fluid embolism, paralytic ileus, infection, renal failure, burst abdomen, endometritis etc.

Aims and Objectives

1. To study the demographic factors for rupture uterus.
2. To study the risk factors, sites & types, clinical presentation and management of rupture uterus.
3. To study the maternal and fetal outcome in terms of maternal and perinatal morbidity & mortality.
4. To develop the strategy for prevention of this entirely preventable catastrophe.

MATERIALS AND METHODS

The study was conducted in Jan 2008 to Jan 2009 at Mahila Chikitsalya, SMS Medical College & Hospital, Jaipur. 70 cases of rupture uterus during 1 year of period were taken and analysed. All cases suspected clinically and confirmed during surgery of rupture uterus (scarred and unscarred uterus) beyond 28 wks of gestation after written and informed consent, were included in the study.

- Detailed history of regarding age, parity, socio-economic status, period of amenorrhoea, duration of labour pain, leaking or bleeding PV, cessation of labour pain, loss of fetal movement.
- History of drugs administration, instrumentation and manipulation.
- History of handling by dai or skill personnel.
- In case of presentation after delivery history of handling, duration of labour, type of delivery, PPH etc.
- Previous obstetric history, h/o gravida, parity, abortion, ectopic pregnancy.

- Mode of delivery and period of gestation.
- History of previous surgery like MRP, myomectomy, cervical amputation or cauterisation, cornual resection for ectopic etc.

After examination and resuscitation cases were dealt according to parity and general condition of patients, type of rupture, presence or absence of sepsis, desire for future pregnancy (hysterectomy, repair or repair with sterilisation). Maternal outcome was recorded in terms of number of cases, requirement of blood transfusion, post-operative complication, duration of hospital stay and fetal outcome in terms of perinatal morbidity and mortality.

RESULTS

Majority of the patients (n = 38) had h/o previous LSCS without prior vaginal delivery, out of which 31 were previous one caesarean and 7 were previous 2 caesarean. 15 had both previous caesarean and normal vaginal delivery. Out of which 2 had previous two caesarean and 13 had previous one caesarean. 12 had only previous vaginal delivery. 1 patient each had previous hysterotomy, hysterotomy with previous caesarean section and previous classical section (Table-1). Most common cause found in our study was previous caesarean section 55 cases (78.57%). Among 55 cases, 45 were of previous one caesarean and 10 were of previous 2 caesarean section. 2 cases had h/o prior hysterotomy, one case had previous history of MRP and 1 had h/o of MTP. 12 cases had previous history of D&E. In the iatrogenic causes injudicious use of oxytocin accounts for 6 cases i.e. 8.57%, 5 cases had induction of labour by PGE₂ gel. 2 cases had induction of labour by tab Misoprostol. Out of 100 cases only 1 patient had h/o trauma (Table-2). Spontaneous rupture occurs in 20 patients, out of these 20 cases, 6 were grand multipara, 9 patients had some form of CPD like hydrocephalous in 1 patient and contracted pelvis in 8 patients. 5 patients had abnormal presentation in form of transverse lie with hand prolapse (1) and breech in 4 cases (Table-2). Majority of the cases i.e. 47 out of 70 cases (67.14%) presented during labour with rupture uterus. 9 (12.86%) cases occurred during pregnancy. 14 (20%) cases were diagnosed after delivery and majority of them were previous caesarean section (Table-3).

Majority of patients presented with clinical features of foetal distress or IUFD 28 cases i.e. 40% cases. 21 patients presented with scar tenderness accounting for 30% cases. 6 patients presented with shock. Silent rupture were presented in 15 cases. 10 patients had complain of loss of fetal movements. Abnormal uterine countour was present in 15 cases i.e. 21.43% cases. Gross hematuria was present in 4 cases only. 2 cases presented with obstructed labour. Superficial fetal pains felt in 9 cases i.e. 12.86% cases (Table-4). Out of all the cases diagnosed with rupture uterus 36 i.e. 51.43% cases had anaemia. 14 cases show features of sepsis. DIC was present in 6 cases. 6 cases were complicated by paralytic ileus and wound sepsis accounting for 8.57% cases. Maternal mortality accounting for 1 i.e. 1.43% cases. DOT occur in 1 patient, 6 patients were complicated by features of shock i.e. 8.57%, still birth occurs in 31 patients (Table-5).

Table 1. Previous Obstetric History (n = 70)

Mode of Delivery	No.	%
Vaginal Delivery	12	17.14
Previous LSCS	38	54.29
Previous Classical CS	1	1.43
Vaginal & Previous LSCS	15	21.42
Nullipara	2	2.66
Hysterotomy	1	1.43
Hystrectomy & Previous LSCS	1	1.43
Total	70	100.00

Table 2. Distribution of Cases According to Etiology

Etiology	No.	%
A) Spontaneous		
(i) Grand Multiparity	6	8.57
(ii) CPD		
a) Contractual Pelvis	8	11.43
b) Hydrocephalous	1	1.43
(iii) Abnormal Presentation		
a) Transverse lie with hand prolapse	1	1.43
b) Breech	4	5.71
B) Iatrogenic		
(i) Oxytocin misuse	6	8.57
(ii) PGE ₂ gel	5	7.14
(iii) Tab Misoprost	2	2.86
C) Traumatic	1	1.43
D) Scar Rupture		
(i) Previous 1 Cesarean	45	64.29
(ii) Previous 2 Cesarean	10	14.29
(iii) Hysterotomy	2	2.86
E) Previous h/o MTP	1	1.43
D&E	12	17.14
MRP	1	1.43

Table 3. Distribution of Cases According to Time of Diagnosis (n = 70)

Time of Presentation	No.	%
During Pregnancy	9	12.86
During Labour	47	67.14
After Delivery	14	20.00
Total	70	100.00

Table 4. Distribution of Cases According to Clinical Features at the Time of Presentation (n = 70)

Clinical Features	No.	%
Silent Rupture	15	21.43
Loss of Fetal Movement	10	22.86
APH (Antepartum Haemorrhage)	9	12.86
PPH (Postpartum Haemorrhage)	10	14.29
Foetal Distress / IUFD	28	40.00
Tachycardia	23	32.86
Scar Tenderness	21	30.000
Shock	6	8.57
Abnormal Uterine Contour	15	21.43
Superficial Fetal Parts	9	12.86
Hematuria	4	5.71
Obstructed Labour	2	2.86

Table 5. Distribution of Cases According to Maternal Morbidity and Mortality and Fetal Outcome

Complications	No.	%
Anaemia	36	51.43
Sepsis	14	20.00
Shock	6	8.57
DIC	6	8.57
Paralytic Ileus	6	8.57
Wound Sepsis	6	8.57
UTI	4	5.71
DOT	1	1.43
Maternal Mortality	1	1.43
Fetal Death	31	44.29

DISCUSSION

Rupture uterus still remain one of most important and dangerous complication in obstetrics. The etiology of rupture uterus is in fact changing on from spontaneous to rupture of previously scarred even in developing countries. The study was conducted to find out the etiological factor responsible for rupture uterus in order to prevent them as far as possible and to study its clinical presentation for early diagnosis and prompt treatment. In present study shows that maximum number of (54.24%) cases of rupture uterus occurred in women with previous caesarean section with no prior vaginal delivery. This is supported by the study of Lorie M Harper *et al.* (2008) women with prior vaginal delivery either before or after the previous caesarean section have high chances of successful VBAC and low risk of uterine rupture. In study by Salma Imran Kayani *et al.* (2005) also all the 5 cases of rupture uterus occurred in the women with no previous vaginal delivery. Hence, found that the induction of labour carries a relatively higher risk of uterine rupture or dehiscence in the women with previous caesarean section and no vaginal delivery. The most common etiological factor found in our study was previous caesarean scar rupture (78.57%). This is supported by the study of Keren Offir (2003), Kumari Ibha *et al.* (2003) and Suyajna D Joshi *et al.* (2005) who also found previous caesarean on the commonest cause of rupture. CPD was the commonest cause in series by Sunanda *et al.* (1997). In our study maximum number of uterine rupture cases were diagnosed in pregnancy 47 (67.14%) cases. However, it is well recognised fact that rupture of uterus may occur during pregnancy, during normal labour or following protracted and difficult labour. Rupture during pregnancy is an extremely rare occurrence in a uterus not previous scarred or injured. Our study shows that maximum no. of patients with uterine rupture presented with fetal distress or IUFD (40%) followed by maternal tachycardia (32.86%) and scar tenderness in 30% cases. Kumari *et al.* (2003) found that the most common presentation is vaginal bleeding in 52% cases. Silent rupture in a unscarred uterus may occur as reported by Chaun Yaw Chang *et al.* (2006). In present study majority of maternal morbidity was due to severe anaemia 51.43% followed by sepsis in 20% cases. In a study by Sunanda *et al.* (1997) 16 patients died due to rupture uterus out of 145 cases. Leading cause of death was hypovolemia and sepsis. In a study by Ibha Kumari *et al.* (2003) most common complication was anaemia found in 100% cases, maternal death occurred due to DIC postoperatively following hysterectomy. The present study shows that uterine rupture is highly disastrous to fetus in the form of still birth accounting in 44.29%. This is also supported by study of Suyajna *et al.* (2005) and various other authors.

Conclusion

From our study it is concluded that rupture uterus, a devastating catastrophe with a high incidence and mortality, is a potentially preventable complication.

A good antenatal, intranatal care, identification of high risk cases and education of the people about the supervised pregnancy and delivery will reduce the occurrence of uterine rupture.

Public education must be widened and women should be made aware of the importance of small family norm, available contraceptives choices, sterilization procedures, importance of regular antenatal check up and institutional deliveries. Transport facilities must also be improved. Untrained personnel play a major role in contributing to morbidity and mortality hence the training at the grass root level is necessary to identify the high risk cases and their early referral to the higher centre for management. Most important delay in diagnosis, is a preventable factor that can be corrected only by high index of suspicion. As nowadays the major cases of rupture uterus is the scar rupture the previous caesarean section, hence the incidence of primary caesarean section should be kept in check and there patients must have compulsory hospital delivery and close supervision in labour and intranatal care. Government has launched "Janani Suraksha Yojna" providing monetary help to the women who go for institutional deliveries, thereby increasing the rate of hospital deliveries and decreasing maternal mortality.

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