



A Study of Rupture Uterus At A Tertiary Centre

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ABSTRACT

Objectives: In this study, we saw the incidence, site & type of Rupture uterus in, by the intended mode of delivery and investigate & quantify the predisposing and risk factors, assess Maternal and Perinatal outcome, and determine its treatment modalities.

Material & Method: Study included all patients of Rupture uterus diagnosed during vaginal delivery or by Caesarean section with gestational age of more than 28 weeks in Dept of OBGY, Aurangabad from October 2013 to October 2015

Results: The incidence was 0.13%. Scarred uterus contributed to 66% cases with 2% Maternal mortality and 72% Perinatal mortality. In 70% cases, uterus could be saved.

Conclusion: Rupture uterus seriously complicates pregnancy. It has high Maternal morbidity and Perinatal mortality. Previous scarred uterus needs vigilance and proper selection for vaginal birth after caesarean section. Exploratory laparotomy and Uterus conserving surgery remains the gold standard for management.

KEYWORDS : Rupture uterus, previous Caesarean section. Maternal mortality, Perinatal mortality.

Introduction: A rare but serious complication of pregnancy is Rupture uterus. The incidence in developed and developing countries varies from 0.3 to 0.7 per 1000. It contributes to 5% to 10% cases of Maternal mortality and 80-95% of Perinatal mortality. Causes include Grandmultiparity, injudicious use of Oxytocin, previous Caesarean section, Obstructed labor, Multi foetal gestation, Congenital anomalies of uterus, foetal macrosomia. A common cause of Rupture uterus is Scarred uterus. They may be due to previous Classical caesarean section, previous 1 or 2 Lower segment Caesarean section, previous Hysterotomy scar, previous Myomectomy scar etc. Rupture uterus may occur in unscarred uterus also. Rupture may be spontaneous or traumatic. Traumatic includes blunt trauma, injudicious use of Oxytocin and Prostaglandins, instrumental delivery. Spontaneous rupture may be seen in Grand multipara.

Aims and Objectives: To assess the Maternal and Perinatal outcome in rupture uterus and to determine the various treatment modalities in rupture uterus. Also to find its incidence & know the site and type of rupture and to identify the predisposing and risk factors for it.

Material and methods: This prospective observational study was conducted at Dept. of Obstetrics and Gynecology ,Govt. Medical College, Aurangabad, Maharashtra, India from October 2013 to October 2015. Cases included were 1) All pregnant women registered and unregistered, at more than 28 weeks gestational age, diagnosed with Complete Rupture uterus attending casualty, labor room and diagnosed on operation table during Caesarean section. 2) All patients with complete scar rupture with gestational age more than 28 weeks, previous scar due to 1 or 2 caesarean sections, Hysterotomy or Myomectomy. Excluded were Cases with direct uterine trauma, scar dehiscence, cases with gestational age less than 28 weeks and those not willing to participate in this study.

Results: Rupture uterus constituted 0.13 % of all deliveries in said period. Of 37500 deliveries in 2 years, 50 had Rupture uterus. Out of

741 cases kept for vaginal delivery after caesarean section. 24 had Rupture uterus making 3.23%. 94% of women were between 20-34 years of age. Surprisingly, 10% of patients were Primiparas, Grand multiparas (more than 4) were 8% and 82% between para 2 to para 4. As expected majority (74%) were unbooked. In 62%, birth weights were between 2.5 to 3.5 kg and 28 % weighed more than 3.5kg.

Amongst the previous scars, none had Rupture uterus in antenatal period. In labour, 90.90% had Rupture uterus in previous 1 LSCS while 9.09 % had in previous 2 LSCS. No case of previous Classical Caesarean section or Hysterotomy or Myomectomy or Dilatation and curettage were found. In etiology, 66 % had previous 1 or 2 LSCS, 10% Rupture uterus had prolonged or Obstructed labour, 10% had Transverse lie and Grandmulti parous were 8.10%.

69.70% women had Rupture Uterus when the inter pregnancy interval in previous caesarean section (last delivery to conception period) was more than 24 months, 21.21% had with interval of 18-24 months and 9.09% had when it was 12-18 months.

The diagnosis of Rupture uterus on clinical examination and investigations was done in 32 % cases while 68% were diagnosed directly on Operation table. Amongst all ruptures due to previous Caesarean section, 60.60% were preterm, 36.36 % were between 37 to 41 weeks and 3.03% were more than 41 weeks. The indication of previous LSCS was Cephalo-pelvic disproportion in labour in 18.18%, Deep transverse arrest in 18.18% and Oligohydramnios (not in labour) in 36.36%. The injury extended to cervix and Urinary bladder in 8% of cases, while Colporrhexis occurred in 2%. None had the Ureter and Bowel involved.

TABLE 1: ANALYSIS OF SYMPTOMS

SYMPTOM	NO. OF CASES	PERCENTAGE (%)
VAGINAL BLEEDING	21	42

SYMPTOM	NO. OF CASES	PERCENTAGE (%)
LOST UTERINE CONT	13	26
SEVERE ABDO PAIN	14	28
HAEMATURIA	04	08

On analyzing signs, 72% had abnormal foetal heart rate, 42% had scar tenderness and foetal distress.

The rupture in all lower uterine segment in all cases extended to upper part of anterior wall in 58% cases, posterior wall in 6%, broad ligament in 4%, Lateral wall in 18% and Urinary bladder in 8%. Post operative complications included Anemia in 60%, ARDS in 2% and DIC in 2%. The Maternal mortality was 2%(ARDS patient) and 72% had stillbirths.

Discussion: Rupture uterus is a life threatening Obstetric emergency with possibility of diagnosis being missed or delayed. The incidence of Rupture uterus ranges from 0.13% in our study to 0.67% in Naushaba Rizwan etal (3) and 0.71% in Nabila Hassan et al (2).

SU Mbamara et al (5) had 73.89%, Nausheen Aziz et al (9) had 91.77% and Our study had 73.92% women between 20 to 34 years of age group. Similarly, our findings also correlated in parity. Nausheen Aziz et al (9) n=61 had 82%, Nazma bano sheikh et al (7) n=50 had 50% while the present study had 82% cases of rupture uterus in para 2 to para 4.

Rural patients had more ruptures than urban. Seema Dwivedi et al (10) n=40 and Our study had 85% and 90 % cases respectively from Rural areas. The gestational age at which previous LSCS was done also decides the chances of Rupture uterus. Anthony C. Sciscione et al (1) n= 135 had 60% rupture Uterus before 37 weeks of Caesarean section in last pregnancy. Our study simulated to their findings.

We had 60.60 % at same gestational age LSCS. It is likely that the previous preterm labour was due to premature rupture of membranes. Subclinical intrauterine infection, specially products of inflammatory cytokines appears to play role in pathophysiology of wound healing. That leads to defective scar integrity.

Kathryn E. Fitzpatric et al (6) n= 137 had 52% women with Rupture uterus with inter pregnancy interval from previous LSCS of more than 24 months. Our study had 69.69% after 24 months of interval. However, the scar is said to be weak if inter pregnancy interval was less than 18 months.

Previously scarred uterus is the most common cause of Rupture uterus. This has been observed by many studies. Nabeela Hassan et al (2) n= 85 had 54.1%, Nazma bano sheikh et al (7) n=50 had 60%. Kathryn E. Fitzpatric et al (6) n= 137 had 65 %, Sandhya Devi et al (8) had 68.57%, Nausheen Aziz et al (9) had 71% while Our study had 66% respectively. Jeanne Marie Guise et al (11) described that in previously scarred uteri, to prevent 1 symptomatic rupture 370 elective LSCS have to be done. Though previous 2 LSCS patients were not given trial of labour, we had 6% ruptures in them. These 3 women were referred to us from other hospitals as cases of Rupture uterus. Nazma bano Sheikh et al (7) n=50 also had 6% cases in their study.

TABLE 2: SITE OF INVOLVEMENT OF RUPTURE UTERUS

STUDY	BOTH SEG- MENTS(%)	UPPER SEG- MENT(%)	LOWER SEGMENT	SEGMENT
			ANT WALL (%)	POST WALL(%)
Naushabha Rizwan et al (3)	00	00	60	14
Ganesh Shinde et al (4)	09	06	76	20
Seema Dwivedi et al (10)	2.5	05	80	10
Present Study	08	08	92	08

In our study, Lower uterine segment had rupture in all cases. Its ante-rior wall was involved in 92 % cases and Posterior wall in 8%. In other studies also, Lower uterine segment was more commonly involved than Upper uterine segment.

TABLE 3: MODALITY OF TREATMENT IN RUPTURE UTERUS.

STUDY	SCAR REPAIR (%)	OBSTETRIC HYST"TO- MY (%)	INTERNAL ILIAC (%) ARTERY LIGATIO	URINARY BLADDER REPAIR (%)
Naushabha rizwan etal(3)	27	54	00	14
Ganesh Shinde et al (4)	35.14	64	57	13.5
Nausheen Aziz et al (9)	77	23	00	04
Seema Dwivedi et al (10)	33	67	00	00
Nazma bano sheikh (7)	72	28	00	10
Present Study (n= 50)	72	28	10	08

Scar repair and Obstetric Hysterectomies were major treatment mo-dalities used in all studies. Internal Iliac Artery Ligation was done in 57% by Ganesh Shinde et al (4). We had 10 % cases. Urinary bladder injury was found in all studies due to its close proximity to lower uter-ine segment which had maximum ruptures.

In our study, 62% received less than 3 units of blood transfusion while 38 % received more than 3 units, making everyone to receive blood. Similarly, Seema Dwivedi et al (10) gave 47.5% women more than 3 units. The site of Rupture and involvement of Uterine arteries decide the amount of haemoperitoneum. The women are also predisposed to other blood transfusion hazards like HIV, HbsAg, Syphilis, malaria, HCV infection etc.

Kathryn E. Fitzpatric et al (6) n= 137 had 76% patients with Abdom-inal pain. Sandhya Devi et al (8) has 47.14 % with lost uterine con-tractions while Our study had had 42 % with vaginal bleeding. Thus, the presenting symptoms vary in different studies. The commonest presenting sign was abnormal foetal heart rate . Kathryn E. Fitzpat-ric et al (6) n= 137 had 76%, SU Mbamara et al (5) had 72% and Our study had 72% respectively as chief presenting sign of Rupture uter-us.

Anemia was the most common co-morbidity. Sepsis with DIC, need of ventilator support and VVF were also seen. SU Mbamara et al (5) had 68 % Anemia with Haemorrhagic Shock, 8% DIC with Sepsis and 8% VVF. Ganesh Shinde et al (4) had 72% anemia and 52% required ventilatory support. Our study had 60% anemia with Haemorrhagic shock, 2% had Sepsis with DIC and 2% required Ventilatory support. The comorbidities were comparatively less in Our study.

Our study had 2% maternal deaths , 1 patient died of Sepsis with ARDS on day 7 of surgery. Ganesh Shinde et al (4), Seema Dwivedi et al (10), Nausheen Aziz et al (9) had 16.22 %, 11.43% and 08.19 % Ma-ternal deaths respectively. The Perinatal mortality remains very high in rupture uterus. Nazma bano Sheikh (7) had 96%, Seema Dwivedi et al (10) had 90 %, Nausheen Aziz et al (9) had 84 % perinatal deaths, Our study had 72 %. 18 babies (28%) were live born babies.

Conclusion: Rupture uterus remains a life endangering complica-tion. It has high maternal morbidity and perinatal mortality. A good Antenatal care, counseling about risk of Rupture and convincing the necessity to give follow up at 37 weeks, getting women indoor prior to onset of labour and delivering at well equipped hospital is neces-sary. Vigilance during labour, especially in vaginal birth after caesar-ean and thorough monitoring of foetal heart will detect earliest signs of impending rupture. Immediate and timely intervention can avoid problems. Think twice before first caesarean and don't hesitate in tak-ing for caesarean in a previous caesarean at the earliest indication. Ex-ploratory Laparotomy with uterus conservative surgeries is the gold standard treatment modality.

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