

# Ruptured Uterus-An Ongoing Problem

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**Objective:** To determine frequency of ruptured uterus, its causes, site, post operative maternal morbidity and mortality and to suggest its preventive measures. **Design:** A prospective study. **Place and duration of study:** Jan.2004 to Dec.2005, Lady Aitchison Hospital Lahore. **Materials and methods:** This study was carried on 23 patients with rupture of uterus. **Results:** Total no of deliveries during this period were 7533. We received 23 patients with rupture of uterus. Out of these 17 were unbooked and only 6 were booked. Out of the booked patients 4 took trial of labour outside the hospital .Only 2 patients had uterine rupture in the hospital and that also was due to scar dehiscence. **Conclusion:** All labouring patients should be given due trial before embarking upon first c/s , moreover c/s should be done only for obstetric reasons &preferably by lower segment transverse incision under proper aseptic conditions by a competent surgeon. Patients should be counselled for early booking in next pregnancy and delivery should be conducted in the hospital.

**Key words:** Uterine rupture, previous scar, grandmultipara, morbidity and mortality.

Uterine rupture is defined as the complete separation of the wall of the pregnant uterus with or without expulsion of the foetus that endanger the life of mother and/or foetus.

The most common cause of uterine rupture in the developed countries is the previous c/s scar, multiparty and increasing rate of previous c/s in developing countries. Frequency of rupture with lower segment transverse incision is much less then the previous classical scar. The risk of rupture increases 4-10% if the previous scar has ruptured. Other risks are h/o myomectomy, operative delivery, trauma, high parity, use of oxtosics & obstructed labour<sup>1</sup>.

This study was carried out for a period of two year from Jan. 2004 to Dec. 2005 in Lady Aitchison hospital which is affiliated with King Edward Medical University, Lahore. Lady Aitchison Hospital is a tertiary care hospital. There are no non emergency days. Emergency is received from all adjacent areas especially nearby villages due to its affiliation with Mayo Hospital, Lahore. The aim of this study was to determine the frequency of ruptured uterus and its causes in our population & to see the maternal morbidity and mortality and to suggest the preventive measures which can be helpful in decreasing the morbidity & mortality associated with this grave situation.

## Materials and methods

This was a prospective study which was carried out for a period of two years i.e., from January 2004 to December 2005. Only patients with complete rupture of uterus were included in this study. A detailed history was taken. Patient's age, parity, booking status was enquired. Onset of labour whether induced or spontaneous, duration of labour, complications, interference by TBA, use of oxytosics or prostaglandins were noted. General physical exam. systemic, local examination & vaginal exam were carried out.

## Results

Table .1: Distribution according to booking status

Booking status	n	%
Booked	6	26.08%
Unbooked	17	73.91%

Table 2: Distribution according to age

Age in years	=n	%age
15-20	3	13.04
21-30	13	56.52
31-40	7	30.43
41-50	-	-

Table 3: Distribution according to parity

Parity	=n	%age
1-2	4	17.39
3-5	14	60.86
> 5	5	21.73

Table .4. Distribution according to previous history

Previous c/s	n	%
Previous c/s	13	56.52
Myomectomy scar	1	4.34
Multiparity	7	30.43
Myomectomy & c/s	2	8.69

Table 5: Distribution according to duration of labour

Duration of labour	n	%
Nil	3	13.04%
1-6 hrs.	5	21.74%
7-12 hrs	8	34.78%
13-24 hrs	5	21.73%
>24 hrs	2	8.69%

Table 6: Distribution according to duration of pregnancy

Duration of pregnancy	n	%
20-30 wks	-	-
31-34 wks	4	17.39%
35-38 wks	6	26.08%
39-40 wks	11	47.82%
>41 wks	2	8.69%

Table 7: Per operative findings

Operative finding	n	%
Scar dehiscence	14	60.86%
Fundal rupture of uterus	7	30.43%
Cervical tears associated with ruptured uterus	7	30.43%
Rupture of myomectomy scar	2	8.69%

Table 8: Outcome and management

Outcome and management	n	%
Repair of uterus	7	30.43%
Repair and BTL	8	34.78%
Caesarean hysterectomy	5	21.73%



Table 9: Immediate maternal morbidity &amp; mortality

Anaemia	13	56.52%
Fever	6	26.08%
Wound infection	2	8.69%
UTI	-	-
Maternal death	2	8.69%

Table 10: Delayed maternal morbidity

Anaemia	39	69.8%
Psychological problems	11	19.6%

Table 11: Use of oxytocin

Oxytocin alone(>20 units)	12	52.17%
Prostaglandin alone	-	-
Oxytocin & prostaglandin	2	8.69%
None	9	39.13%

Twenty three patients were enrolled from the period Jan. 2004 to Dec. 2005 with ruptured uterus. There were females of mean age 15-45 yrs & there were 5 grand multiparas. Out of 23 six patients were booked & seventeen were unbooked.

According to previous history five patients had previous c/s, one with previous myomectomy, one with previous c/s & myomectomy, seven with no scar. The most frequent pre op finding was scar dehiscence, there was maternal mortality was 8.69%. Out of 23, 10 patients were with gestational age 31-38wks, 14 with 39-40 wks & 2 more than 41 wks. With regards to duration of labour, 3 patients had no labour pains, 5 had 1-6 hrs labour, 8 with 7-12 hrs labour, 5 with 13-24 hrs labour & 2 with more than 24hrs labour.

With regard to uterine stimulants 9 patients had i/v oxytocin alone used in a dose >20units, 2 had i/v oxytocin & prostaglandins & 12 patients had no medication at all.

The scar dehiscence was most common per op finding 60.86%. The common management option was repair of scar and bilateral tubal ligation, repair only or c/hysterectomy (which was done in 5 patients.). The most common post op complication was anaemia seen in 56.52% of patients, followed by fever and wound infection. Maternal mortality was 8.69%.

Patients were followed for long term symptoms of anaemia and any psychological problems. 71% of patients had one or other symptoms of anemia, easy fatigue ability, generalized aches and pains was most common one. Psychological problems were more common in patients with caesarean hysterectomy and in those who had repair and bilateral tubal ligation.

### Discussion

Uterine rupture is a fatal complication of labour preceded by many risk factors and leads to maternal and foetal morbidity and mortality<sup>2,3</sup>. By identifying the risk factors, timely diagnosis and therapeutic interventions can reduce the overwhelming complications. Patients related factors such as age, parity, booking status, duration of gestation, labour (spontaneous or induced) previous history of surgery (per op findings and surgical procedure) are useful

indications of a complicated post op recovery. Booking of the patients at an early gestation is a very important tool of preventing the complications of labour. Awareness and education of high risk patients reduces maternal and foetal morbidity and mortality.

Labour with previous scar is one of the important predisposing factors of uterine rupture in our study. Uterine rupture occurs more commonly in women receiving Oxytocin for augmentation of labour especially if oxytocin exceeds 20 units or if it is given as a stat dose. Undiluted oxytocin was found to be used in patients with rupture after a trial of labour by TBA's. Prostaglandins increases the frequency of uterine rupture when used in women for the preparation of induction of labour. Prostaglandins induces biochemical changes, similar to cervix, in the uterine scar favouring dissolution, predisposing the uterus to rupture at the scar of the lower segment as opposed to elsewhere<sup>4</sup>. The risk increases if there is no vaginal birth after a c/s<sup>5</sup>. Multiparity is shown to be an important risk factor where there is increased risk of tears extending into broad ligament and abdominal cavity.

The post op results depend upon per op findings. Complete rupture with massive blood loss is associated with increased incidence of mortality as compared to early presentation of patients with dehiscence only. In addition these patients are more prone to delayed problems and increased OPD attendance for pid, anaemia pelvic pain syndrome & minor or major psychological problems.

### Conclusion

Early booking of patients, identification of associated risk factors and one to one monitoring of patients in labour and a consistent protocol with strict criteria for intervention should be followed<sup>6</sup>. This will help to improve maternal and foetal outcome. Patients presenting with established complications of ruptured uterus should be taken seriously as an emergency with expert team, ICU facilities and multidisciplinary approach<sup>7</sup>.

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