

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20150444>

Case Report

Uterine rupture a retrospective analysis of referral cases at a tertiary care centre in Kanpur city

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Received: 10 June 2015

Revised: 21 June 2015

Accepted: 10 July 2015

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ABSTRACT

Background: Uterine rupture a retrospective analysis of referral cases at a tertiary care centre in Kanpur city.

Method: Observational study was conducted on 40 patients admitted Upper India Sugar Exchange Maternity Hospital, Kanpur.

Result: Majority of patients presented with rupture uterus belongs to age group 30-35 years were multigravida came from rural setup and were unbooked among patients with lower segment rupture, 66.7% needed operative hysterectomy while 33% needed rent repair alone and were treated successfully.

Conclusion: Uterine rupture is a catastrophic complication associated with high fetal and maternal morbidity and mortality.

Keywords: Previous cesarean scar, Obstructed labour hysterectomy

INTRODUCTION

Uterine rupture in pregnancy is a rare and often catastrophic complication. It is associated with a high incidence of foetal and maternal morbidity. Several factors are known to increase the risk of uterine rupture, these include poor socio-economic conditions uncontrolled fertility, illiteracy and unsupervised labour and contracted pelvis. Uterine rupture during pregnancy is a rare occurrence whereas uterine scar dehiscence is more common and seldom results in major maternal or foetal complication. The rate of caesarean has risen from 5% in 1970 to 26% in 2003 despite improvement in obstetrical procedures such as external version, total breech extraction etc.

Incidence of rupture uterus is one in 1146 pregnancies i.e. 0.07%. The incidence of rupture remains high mainly due to the use of oxytocin drug by people not

qualified for its use. Several studies suggest that for adequately screened women with prior caesarean section in trial of labour is safer than elective repeat caesarean section in hospital environment, but due to lack of health education, ignorance or poverty, women in our country do not come for regular antenatal check up preferring home delivery by traditional birth attendant, instead of coming to hospital for trial of scar. They were brought to hospital after prolonged dysfunctional labour when traditional birth attendant failed to deliver them. This results in increased chances of rupture of previous caesarean scar. High maternal mortality and morbidity rate is a consequence of poor maternal care, inadequate socio-economic and environmental conditions poor accessibility to health service and poor nutritional habits. Contributing factors are also extremes of maternal age and too many births with in short intervals.

Early diagnosis of the condition and treatment results in better chances of maternal and fetal outcome.

The objective of the study was to identify the risk factors for uterine rupture in labour to report maternal and foetal outcome and to identify preventive measures.

METHODS

This was a retrospective study conducted on 40 patients referred with uterine rupture to UISEMH from 2009 to 2013.

The protocol followed for management of uterine rupture was immediate exploratory laparotomy with all pre-operative preparations, blood in hand and expert anaesthetists supervision to stabilize patient's vitals pre and per-operatively.

Most of the patients could be managed by Rent repair or hysterectomy as per the location of rupture.

RESULTS

Majority of patients presenting with rupture uterus belonged to age group 30 – 35 years (62.5%) were multigravida (95%), came from rural setup (85%) and were unbooked (95%).

Majority of deliveries complicating to uterine rupture took place at home (75%) delivered by dais.

Causes leading to uterine rupture in our study was mainly obstructed labour (60%), followed by previous LSCS (37.5%), H/o MTP in patients was a rare but important cause of uterine rupture in primigravida patient. Another important cause of rupture uterus was use of syntocinon at peripheries by dais. Most of the patients suffered due to delay in diagnosis (77.5%) at PHC and CHC delay in their transport, as a result two patients were brought dead.

At the time of admission majority presented with PPH (55%) and shock (45%).

The interventions done for management of rupture uterus was stabilizing the patients vitals and taking the patient for exploratory laparotomy. Per-operatively, majority of patient had lower segment rupture (90%). Followed by an equal proportion of those who had upper segment rupture (5%) alone or both upper and lower segment involved (5%). Among patient with lower segment rupture, 66.7% needed operative hysterectomy while 33% needed rent repair alone and were treated successfully.

Observation

Total no. of patients = 40

5 yrs - 2009 – 2013

Table 1: Demographic profile.

Parameters	No. of patients	Percentage of patients	
Age	20 – 25 Yrs	1	2.5
	25 – 30 yrs	2	5%
	30 – 35 yrs	25	62.5%
	35 – 40 yrs	12	30%
Parity	Primi	2 (H/o MTP)	5%
	Multi	38 G ₂ – 5 95% G ₃ -33	13.15% 86.84%
Socio-economic	Rural	34	85%
	Urban	06	15%
Admission	Booked	02	5%
	Unbooked	38	95%

Table 2: Deliveries complicating to uterine rupture.

Parameters (Patients with rupture referred from)	No. of patients	Percentage of pts
Home (dai handled)	30	75%
PHC	04	5%
CHC	03	7.5%
Tertiary	03	7.5%

Table 3: Causes leading to uterine rupture.

Parameter	No. of patients	Percentage of patients
1. Obstructed labor	24	60%
a) Malpresentation & Malposition	12	50%
b) Contracted Pelvis	5	20.83%
c) Big Size baby	4	16.66%
d) Hydrocephalus	3	12.5%
2. Previous LSCS	15	37.5%
3. Cervical dystocia	1	2.5%
4. Misoprost use	2	5%
5. Syntocinon use at periphery	21	6%
Intramuscular	17	
In drip	04	
6. Prev. H/o MTP	02	

Table 4: Causes of delay in management.

Parameters	No. of patients	Percentage of pts
Delay in diagnosis	31	77.5%
Delay in Management at Primary and secondary health care centre	15	37.5
Delay in transportation	33	82.5

Table 5: Condition at time of admission.

Parameters	No. of patients	Percentage of pts
Stable vitals	7	17.5 Pain abdomen-85%
PPH	22	55%
Shock	18	45%
Low G.C.	15	37.5%
Brought dead	02	5%

Table 6: Per-operative findings and operative management.

Parameter s	No. of patient s	Operative Management	
		Hysterectom y	Reut repair
Upper Segment Rupture	2 (5%)	1	1
Lower segment rupture	36 (90%)	24 (66.67%)	12 (33.3%)
Upper and lower segment	2(5%)	2	0

Parameter

Blood Transfusion	40
< 3 units	21
> 3 units	19

Table 7: Outcome in terms of maternal mortality and morbidity and neonatal outcome.

Parameters	No. of patients	Percentage of pts
Uneventful	7	17.5
Sepsis in post op period	23	57.5
Burst abdomen	03	7.5%
Renal failure	02	5%
Vesico-vaginal fistula	02	5%
Deaths	02	5%
Dead born fetuses	36	90%
Neonatal survival	04	10%

DISCUSSION

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 fetal mortality and / or morbidity.

Our study was conducted in department of Obstetrics of GSVM Medical College, Kanpur for a period of 4 years

from January 2009 to December, 2013, total number of patients in this study were 40.

Table 1 shows the demographic profile of our patients. Most of our patients fell into the age group of 30 – 35 years (62.5%), and 35 – 40 years (30%). Most of the patients were multiparous with 86.84% patients with parity of 3. This is consequent with the findings of Sweeten KM et al¹. In a study by Isharq et al² 64.9% patients with rupture uterus had parity of 5 and above. In the same study it was concluded that women older than 35 and women having their 5th birth are at greatest risk for uterine rupture.

Table 1 also highlights that 85% patients belonged to rural area where there was poor outreach to antenatal services.

In a study conducted by UNICEF³ and Raczynski A et al⁴ it was conducted that rural reas have highest incidence of rupture uterus. In our study it was found that 95% of patients with rupture uterus were unbooked which again reflects the poor utilization of antenatal services. Our findings are consequent with the study conducted by Mulumba N⁵,

Table 2 shows the place of referral 75% of patients had history of dai handling 5% patients were referred from PHC 7.5% were those from tertiary health centre, most of which were being given trial of VBAC. In a study conducted by Mukasa et al⁶ it was found that if the distance of referral was more than 5 kms the odds ratio for uterine rupture were 10.86.

Table 3 shows the cases leading to uterine rupture. In our study 60% of patients with uterine rupture were of obstructed labour. The factor contributing to obstructed labour were malpresentation (50%), contracted pelvis (20.83%), big size baby (10.66%), and hydrocephalus (12.5%). In a study by Sameera et al⁷ on 34 patients it was found that obstructed labour was the leading cause of rupture is unscarred uterus (26.47%, 9/34), 3 cases was due to contracted pelvis, 2 due to transverse lie and 1 due to hydrocephalic baby. Ishraq et al² found obstructed labour as the cause of rupture uterus in 83.3% of their patients. Another study conducted by Deneke et al⁸ concluded that obstructed labour can cause upto 93% of uterine rupture.

37.5% of patients is our study had a previous cesarean scar Sameera et al¹ attributed 14.7% of ruptured uterus to previous LSCS scar Golan et al⁹ noted that among 126, seven-third deliveries, oxytocin was used in 26 of 61 cases (43%) that involved unscarred uterine rupture. However Plauche et al¹⁰ attributed only 1 of 23 unscarred uterine rupture (4%) to use of oxytocics. The latter matches our findings. We found that 5% cases of rupture were associated with misoprost while 6% were associated with syntocinon there at periphery. Our study also found that 2.5% cases were due to cervical dystocia while 2

patients had history of previous MTP Ishraq et al.² found history of curettage is 22.2% of uterine rupture.

Table 4 highlights the causes of delay in management Majority patients (77.5%) suffered with delay in diagnosis. 37.5% patients were victims of delay in management in PHC and CHC. 82.5% had delay in transportation. The study by Ishraq et al' throws light at the delay in exact diagnosis. They concluded that abdominal examination has lowest diagnostic reliability. Reliability was increased by vaginal examination.

Table 5 focuses on the condition at the time of admission 17.5% had stable vitals and complained mainly of pain abdomen, 55% had post partum haemorrhage. Nearly 45% patients had shock 37.5% patients presented with low general condition. 5% of patients with rupture uterus were brought dead to the hospital. These again reflect the poor prognosis of these cases.

Table 6 reveals upper segment rupture in 5% (2/40) cases one patient was which managed by hysterectomy & other by rent repair managed by Majority of pts (90%) had lower segment rupture, two-third of which underwent hysterectomy & one third had rent repair 5% patients (2/40) had upper & lower segment rupture managed by hysterectomy. Classical cesarean delivery via vertical midline uterine incision is infrequently performed in modern era and currently amount for 0.5% of all births in US¹¹.

ACOG reports 4-9% rate of frank uterine rupture in women with classic cesarean delivery. In a study of 20095 women by Lydon Rochdille et al spontaneous uterine rupture rate in patients with single cesarean delivery scar who underwent schedule repeat cesarean section without of trial of labour was 0.16%²

In study by Olaglouji et al¹³ incidence of uterine rupture in previous lower segment scar was 2.4% in labour induced women. Ishraq et al² reported 45.7% patients had rent repair with tubal ligation, 14.3% had total hysterectomy in 5.7% had subtotal hysterectomy. Total rate of hysterectomy in our study was 65% Leung et al¹⁴ reported 19% patients were managed with hysterectomy. Blood availability and transfusion in uterine rupture is a life saving factor. In our study total of 40 unit blood was transfused with 21 patients requiring <3units and 19 patients required >3units. Ishraq et al² reported 57.1% patients required transfusion of 500 to 1000 ml of blood before and during operation.

Table 7 shows outcome in terms of maternal mortality and morbidity and neonatal outcome. In our study, 57.5% patients had sepsis in post operative period which is further precipitated by low haemoglobin status 7.5% patients had burst abdomen which is not shocking given the high rate of puerperal sepsis 5% patients each had renal failure and vesicovaginal fistula, maternal mortality was reported to be 5%. Maternal death as a consequence

of uterine rupture occurs at a rate of 0-1 % in modern developed nations, but mortality rates in developing countries are 5-10%¹⁵⁻¹⁶.

90% of fetal were dead born. Neonatal survival was only 10%. In studies reported before 1978 fetal mortality rate associated with uterine rupture was high. In a review of 33 studies by Schrinisky and Benson, 960 cases of uterine rupture resulted in 620 infant deaths, yielding a perinatal mortality rate of 65%". In 1993 Leung et al. reported that 6% perinatal deaths occurred in patients who had uterine rupture. Landon et al. reported a perinatal death rate from uterine rupture of 2% among 19 academic centers in US. These studies indicate that the incidence of perinatal death associated with uterine rupture is decreasing in modern era.

CONCLUSION

Uterine rupture is a catastrophic complication associated with high fetal and maternal morbidity and mortality.

Most of the patients who are referred to our hospital with uterine rupture are multigravida (95%) with poor socio-economic status where delivery is being conducted by dias at home (75% patients). The main factor limiting management is delay in diagnosis and transportation of the total 40 patients referred to our side, 38 lives were saved i.e. 95% . The main morbidity in post-operative period was sepsis (57.5%).

Delay in diagnosis and referral from periphery are the main factors limiting management at tertiary centre. To conclude, watchfulness of the health professional conducting labour and prompt referral in case of obstructed labor and patients with previous LSCS with possibility of rupture is the only way by which uterine rupture, which is an obstretical emergency, could be prevented and death more judiciously with better patient outcome.

The untrained dias conducting home deliveries and staff at PHC and CHC need to be adequately educated about the early diagnosis and resuscitation of the patients landing into uterine rupture. It is imperative that they can identify this obstetric emergency so that patient reaches tertiary centre well in advance. This will definitely reduce fetal and maternal mortality and morbidity.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Dwivedi S, Kumar A. Uterine rupture a retrospective analysis of referral cases at a tertiary care centre in Kanpur city. *Int J Reprod Contracept Obstet Gynecol* 2015;4:1148-52.