Original Article

Audit of Ruptured Uterus in Bolan Medical Complex Hospital Quetta

Audit of Ruptured Uterus

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ABSTRACT

Objective: To determine the frequency, cause, management and outcome of ruptured uterus in both units of Bolan Medical Complex Hospital in Baluchistan, Pakistan.

Study Design: Prospective study

Place and Duration of Study: This study was conducted at the Department of Gynecology and Obstetrics, Bolan Medical Complex Hospital, Quetta from 1st January to 31st December 2016.

Materials and Methods: It was done to describe the frequency, cause, treatment, complications and maternal and fetal morbidity and mortality associated with ruptured uterus. A structured questionnaire was used to collect information about each case from different persons and registers.

Results: During the study of one year a total of 68 cases of ruptured uterus and 12000 hospital deliveries were recorded for a ratio of 1:177. Causes of rupture were multiparity 29.4%, obstructed labour 14.7%, oxytocin induced 7.4% and uterine scar 47.7%. Most patients were multipara and rupture was complete in 88.2% of patients. Site of the rupture was in lower uterine segment in 50% and in right lateral segment in 17.7%. 14.7% of patients had associated urinary bladder injury. Total abdominal hysterectomy was performed in 17.6% of patients and repair was done in 82.4%. Vesico-vaginal fistula and wound infection were the rare postoperative complications. Maternal mortality rate was 11.8% and fetal mortality rate was 85.3%.

Conclusion: This study reveals that an integrated effort to prevent the causes of uterine rupture and ensure effective management to reduce maternal and perinatal morbidity and mortality is needed.

Key Words: Audit of Ruputer, Frequency, Cause, Management.

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INTRODUCTION

Uterine rupture is defined as a breach in the integrity of the myometrial wall with spillage of uterine contents into the peritoneal cavity[1]. Uterine rupture is one of the major obstetric complications of labour and contributes significantly to maternal and perinatal mortality and morbidity[2]. Worldwide about 0.34 to 0.5 million women die each year due to complications of pregnancy and child birth, mostly in developing countries[3]. The maternal mortality ratio in Pakistan is one of the highest in Asian countries 49/100,000 live births. Uterine rupture is also associated with short term maternal morbidities such as vesico-vaginal fistula, urinary bladder rupture, and anemia

And in the long term surgical intervention may cause sterility of the mother leading to psychological trauma, divorce and loss of economic support[4].

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In developed countries the majority of cases occur in women with previous cesarean section, while in developing countries, it usually results from prolonged obstructed labour with previous scar, grand multipara with advanced age etc[5]. Other factors that lead to this accident are poor antenatal care home deliveries by traditional birth attendents and others[6]. Unfortunately in developing countries like Pakistan factors like poverty, ignorance, quackery, illiteracy, traditional practices, high parity, lack of antenatal care, cephalo-pelvic disproportion and injudicious use of oxytocics contribute to a high incidence of uterine rupture. The objectives of this study are to determine the incidence, maternal complications and management modalities of ruptured uterus in pregnant Pakistani women.

MATERIALS AND METHODS

Bolan Medical Complex Hospital is one of the two tertiary care hospitals in Balochistan, Pakistan. A prospective observational study was conducted in both units of Gynecology and obstetrics Department of Bolan Medical Complex Hospital from 1st January to 31st December 2016. Total number of deliveries conducted during one year was 12000. All cases of ruptured uterus diagnosed on admission as well as those which occurred after admission to Bolan Medical Complex Hospital were included in the study. Diagnosis was made with the help of history and

clinical examination and finally confirmed on leucotomy. 68 patients with ruptured uterus were treated during the study period. These patients were analyzed with regard to age, parity, booking status, previous caesarean section and other risk factors , management options and feto-maternal outcome. Data was collected and percentages were calculated.

RESULTS

During the time period of one year from 1st January to 31st December 2016 68 cases of uterine rupture were registered out of 120000 deliveries. This represents the frequency of 0.56% or 1 in 117 deliveries. Age of the patients ranged from 18 to 50 years with the mean of 31 years. Table 1. Parity of patients ranged from 0-14 with the mean being 5. There were 3 multiparous cases (4.4%) which followed syntocinon use and myomectomy. The duration of labour for 30% cases of ruptured uterus was <36 hours and for 70% women it was upto 72 hours. Most cases were from rural areas 85% while 15% had antenatal care. 65 patients (95.4%) presented with signs of rupture at admission while 3 patients (4.4%) ruptured after admission in the hospital.

Pre-disposing factors were scared uterus in 32 patients (47,7%) multiparity with malposition and malpresentation in 20 patients (29.4%), injudicious use of oxytocin in 6 patients (7.4%) and obstructed labour in 10 patients (14.7%). Out of 68 patients 54 (79.4%) were referred cases being referred from peripheral areas of Balochistan including Kuchlaq, Saryab, Zhob, Pishin, Chaman, Khuzdar, Jacobabad , and Sibi while the rest of the patients ie 14 were local patients.

Out of the 32 patients with scarred uterus 20 patients had previous one and 10 patients had previous 2 and 2 patients had previous 3 caeserian sections. The patients with previous 3 LSCS had gone into preterm labour. Out of the 30 patients with previous 1 LSCS18 patients had taken trial of labour at home because of spontaneous onset of labour while 12 patients had received augmentation with syntocinon infusion by Trained Birth Attendants at different Maternity Homes.

At laporotomy rupture was complete in 80% while 20% had incomplete rupture. Urinary bladder was involved in 12% of the cases. About 60% of patients arrived in a state of shock and were given urgent resusitatory measures followed by surgery.

As concerns management, repair of uterus without tubal ligation was performed in 34 patients (50%) repair with bilateral tubal ligation was done in 17 patients (25%), uterine repair with urinary bladder repair was done in 5 patients (7.4%) . Hysterectomy was performed in 12 patients (17.6%). Table 3.

Almost all patients developed some sort of complication. Observed morbidities were 10 patients (14.7%) who remained in unconscious state for 6 hours after surgery, 12 (17.6%) patients had anemia, 14 patients (20.6%) had puerperal sepsis, 8 patients (11.8%) had wound infection, 6 patients (8.8%) had vesico-vaginal fistula. Many patients had more than one complication.

Table No. 1. Characteristics of Patients

Characteristics	Number	Percentage
Age in years		
21-30	22	32.4
31-40	35	51.5
41-50	11	16.2
Parity		
Primigravida	03	4.4
Multigravida	32	47.1
Grandmultipara	33	48.5
Booking status		
Booked	10	15
Un booked	58	85

Table No. 2. Risk Factors. N =68

Risk factor	Number	Percentage
Scarred uterus	30	47
Scarred uterus with spontaneous labour	20	29.4
Scarred uterus with augmentation with syntocin	12	17.6
Grand multiparty	20	29.4
augmentation with syntocin in unscarred uterus	06	7.4

Table No. 3. Surgical Management (N=50)

Surgical Procedure	Number	Percentage
Uterine repair	34	50
Uterine repair, bilateral tubal ligation	17	25
Uterine repair+blader repair	05	7.4
Hysterectomy	12	17.6

Table No. 4. Maternal & Perinatal outcome(N=68)

Outcome	Number	Percentage
Maternal morbidity		
shock	10	14.7
Anemia	12	17.6
Puerperal sepsis	14	20.6
Wound infection	8	11.8
Vesico vaginal fistula	6	8.9
Maternal mortality	8	11.8
Perinatal outcome		
Still birth	58	85.3
Early neonatal death	2	3
Alive	8	11.8
Perinatal Mortality	60	88.2

8 (11.8%) maternal deaths occurred due to ruptured uterus. Out of these 4 (5.9%) maternal deaths were due to irreversible shock, 4 (5.9%) patients died due to sepsis. Regarding fetal outcome 58 (85.3%) babies were still born and 10 (14.7%) babies were delivered alive but unfortunately 2 babies (3%) died on early neonatal period, with a total perinatal mortality of 88%.

DISCUSSION

Rupture of the gravid uterus is a grave obstetric complication associated with high maternal and perinatal mortality rates[7] the graveness of this complication arises from the fact that most females are young and hysterectomy of irreparable uterine rupture results in sterility for the rest of their lives.

The incidence of ruptured uterus in our study was 1:177 deliveries which co-relates with that reported by Sheikh B N et al 1:194[8] P C Ibekwe 1:188[9] but higher than that reported by Rabia Khurshid 1:467[10], Nyengidiki 1:258[11]. The incidence is low as compared to Qudsia Qazi 1:64[12] and Akaba G O et al 1:117[13]

The age group mainly affected by this obstetric catastrophe in the index study were less than 39 years 82% which is consistent with Elsadiq et al 81.8%([14].

Majority of ruptured uterus occurred in multiparas esp. parity group 2-4. This can be related to the fact that most of them had a scarred uterus[15]. On the contrary the study done by Nyengidiki T K et al gave a figure of 32.5% unscarred uteri that got ruptured[11] while in Ethiopia it revealed that 95 % of patients with ruptured uterus were grand multiparas with unscarred uteri[16].

About 85% of patients in our study were unbooked being referred from peripheral areas of Balochistan comparable to 92% of unbooked cases reported by Sheikh B N et al[9]. Most of the cases had been referred by traditional birth attendants or nurses who failed to refer the patients at an early stage of labour. This emphasizes the need for improvement in health monitoring system with utilization of antenatal risk scoring index and implementation of partograph as detective tool for deviation of labour from norm…..

The rupture of unscarred uterus had been well documented as common in developing countries (16). However in the index study ruptured uterus is more commonly seen in previously scarred uterus, as has been noted in other studies[17]. This may be attributed to lack of antenatal care, residence in rural areas far away from tertiary care hospitals and the tendency to seek unskilled intervention in the event of another pregnancy and the lack of transport facilities.

Our study showed that 29.4% cases of ruptured uterus were due to multiparity with malpresentation and malposition, while 16.2% cases were due cephalo-pelvic disproportion. Injudicious use of oxytocin was also noted to be contributory to rupture of gravid uterus in 10 patients.. This etiologic base was also brought into focus by various studies[12]. The long duration of obstructed labour was the cause of ruptured uterus in 14.7% cases. This observation was closer to the studies done in India[17] where 27% of uterine rupture cases were due to obstructed labour but in contrast to the study in Ethiopia and Nigeria where 88% of uterine rupture was due to obstructed labour[16].

In our study majority of ruptures were complete and occurred in the lower anterior segment of uterus 50% as had been observed in other studies due to previous caesarean scar being a week point. As for the management options after considering the parity esp. number of living children, extent of uterine damage and condition of tissues decision to perform repair of uterus or hysterectomy is made. In the index study 50% of patients had repair of uterus without ligation, 25% of patients had uterus repaired with bilateral tubal ligation, 7.4% of patients had uterine repair with urinary bladder repair and 17.6% patients had hysterectomy. This is comparable with the study done by Nirmala from India[17] and Datijjo L M from Nigeria[18] but in contrast to the study done by Amanuel Gessessew[16] and Qudsia Qazi[12] where majority 60-70% of patients had hysterectomy. Rate of urinary bladder injury in 7.4% of patients is much lower than the 18.5% reported by Gessessew from Ethiopia[16].

In our study 80% of patients had severe blood loss that necessitated blood transfusion. Comparable results were obtained from Nigeria[19] but others elsewhere reported far lower percentages[20]. The most common complications in our study were anemia 80%, shock 50% and puerperal sepsis 40%, vesico- vaginal fistula 10% and urinary tract infection 10% which were corroborated by similar findings in Ethiopia[16].

In the index study the perinatal mortality rate was 80% which is comparable to 83.3% reported by Chuni et al[21]. The maternal death rate was 14.7% which was comparable with that reported Amanuel Gessessew 11%[16] and Nirmala Duhan[17] but was higher than that reported by Naushaba 2%[15].

CONCLUSION

The high maternal and perinatal mortality and morbidity that follow uterine rupture needs a serious effort to prevent its causes. Good antenatal care prompt referral of obstructed labour, availability of transportation and effective family planning are essential factors to prevent uterine rupture and to decrease the maternal and perinatal morbidity and mortality associated with it.

Author's Contribution:

Concept & Design of Study:	Hanana Hameed and Iffat Jehan Usmani
Drafting:	Hanana Hameed and Iffat Jehan Usmani
Data Analysis:	Hanana Hameed and

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Revisiting Critically:	Hanana Hameed and Iffat Jehan Usmani
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