A Clinical Study on socio-demographic background in Ruptured Uterus Cases

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Abstract

A study of 72 cases of uterine rupture out of total 5984 deliveries(including 3619 caesarean sections) over 1 year (from Sep. 2006 to Aug 2007) in the dept. of Obstetrics and Gynaecology, Mymensingh Medical College Hospital was reported. This gives an incidence of uterine rupture 1: 83. The results showed that, this was a common obstetric emergency & was a major cause of maternal & foetal deaths. Study showed that, 87.5% came from rural areas where facility was not available, 79% were of poor socio-economic condition .All rupture uterus cases (100%)was house wife.

Peak age was between 20-30 years (68%). Among all rupture cases, 72.22% cases were between gravida 2nd to 4th,and 19.44% cases were gravida 5th or above & only 8.33% cases were Primigravida, Most of the patients(56%) were illiterate. 46% of cases had no antenatal checkup during their pregnancies. 51.38% cases labour pain lasting>16 hours. Most of the mishandled cases (66.67%) were exposed to injudicious use of uterotonic drugs before admission. Most of the cases (38.9%) handled by untrained birth attendants.

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Key words : *Ruptured Uterus, socio-demographic background.*

Introduction

Rupture of gravid uterus remains one of the most disastrous catastrophes among all obstetrical emergencies. It is a major cause death in developing countries [1].

Obstetrical care in the western world is at its peak. But in the developing countries, it is still at the docks, especially in Bangladesh due to illiteracy, male dominant society and untrained birth attendants. Majority of population living in rural areas do not have an easy accessibility to a maternity and essential obstetric care. Therefore they may develop life-threatening complications of pregnancy and the fatality rate associated with conditions like ruptured uterus is quite high. This high frequency of its occurrence among our women is definitely due to neglected and ill managed pregnancies & labour.

Our illiterate & poor people especially those living in rural areas try to avail medical help during labour only when a woman fails to deliver after a long labour at home or when there is serious deterioration in her condition. Only then patient is transferred to the hospital to seek medical care. In some cases after reaching at the facility there is also delay in starting treatment at the facility due to absence of trained staff or shortage of medicine.

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People of remote areas have delay in seeking care mainly due to communication problem. Even people living close to hospital (within one or two kilometer) also had delay in seeking care poverty & fear of operation.
Uterine rupture is tearing of the uterine wall during pregnancy or delivery. A major factor of uterine rupture is obstructed labour. Other factors are contracted pelvis, multiparity use of uterotonic drugs to induce or augment labour, Placenta percreta & rarely intra uterine manipulations such as internal podalic version & breech extraction.
There are causes behind causes, which are multilayered, for the majority of cases of ruptured uterus. Grand multiparty in addition of being in poor general health, did not know about contraceptives to prevent pregnancy & had no access to family planning services due to illiteracy, poverty, taboos & living in remote rural areas. Thus it is a chain of events which are collectively responsible for rupture.

The prevalence of uterine rupture in woman with previous caesarean section is of considerable importance in calculating in long term risks associated with primary caesarean section.

Changing trends in aetiological factors of this condition have been demonstrated. Incidence of traumatic ruptures &unscarred uterine rupture found declining & that of scar rupture increasing gradually.

Now a day's frequency of occurrence of ruptured uterus varies widely in different places, depending on quality of health services in the region or country concerned.

Methods

This Descriptive type of cross –sectional study was conducted during the period between September2006 to August 2007.The aims of the study was to evaluate the socio-demographic background of ruptured uterus.
This study of 72 cases of uterine rupture was conducted in the Gynaecology &Obstetrics department of Mymensingh Medical College Hospital(M.M.C.H.) which is the largest referral hospital in greater Mymensingh region including Mymensingh, Netrakona , Tangail, Jamalpur & Sherpur districts in Bangladesh.
All cases of ruptured uterus whether booked or unbooked which were received &treated &did not die within 30 minutes of admission are included in this study.
Data was collected by preformed data collection sheet. Interview schedule consists of age, gravidity, socio-economic condition, occupation, distance of residence from hospital, duration of labour pain, labour attended by who before admission, and relation of uterotonic drugs with rupture. Analysis was done by Microsoft Excel Review of the literature on this subject is also undertaken & different series have been compared with present study.

Results

Incidence: During the period of study there were 5984 deliveries including 3619 Caesarean Section in the maternity units of the department of Obstetrics & Gynecology of Mymensingh Medical College Hospital (M.M.C.H.).This gives an incidence of one uterine rupture for every 83 deliveries or 12 per 1000 deliveries.

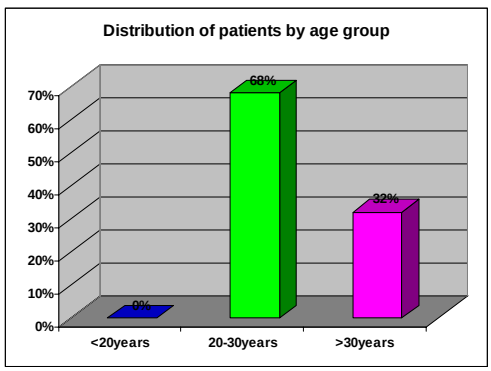


Figure 1: Showing distribution of patients by age group (n=72).

Occupation (n=72).

Regarding occupation, all rupture uterus cases (100%) were house wife.
Table-I shows the relation of uterine rupture to the patient's habitation (n=72).

Residence	No of cases	Percentage
Rural area	63	87.5%
Urban area	09	12.5%

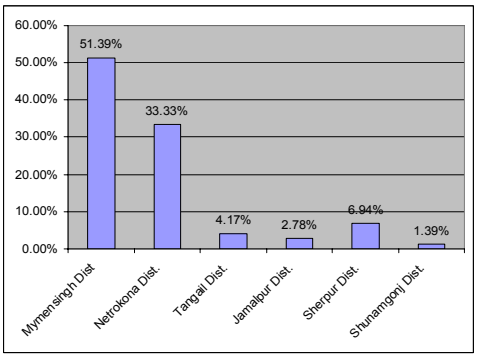


Figure-2 showing distribution of patients by different areas (n=72).

Table-II shows the relation of uterine rupture to the patient's residence distance from hospital(n=72).

Zilla	Upazilla	Distance from study place	No of cases	Percentage
Mymensingh	sadar	0 k.m.	9	12.5%
	Fulbaria	18 k.m.	3	4.16%
	Ishworganj	24 k.m	5	6.94%
	Gaffargoan	45k.m	1	1.38%
	Nandail	46k.m	1	1.38%
	Phulpur	30k.m	4	5.55%
	Valuka	40k.m	2	2.78%
	Gouripur	18k.m	6	8.33%
	Muktagachha	16 k.m	3	4.16%
	Trishal	20 k.m.	5	6.94%
	Dhobaora	45k.m	1	1.38%
	Haluaghat	50k.m	0	0%
Netrakona		37k.m	25	34.7%
Sherpur		69k.m	5	6.94%
Jamalpur		47k.m	2	2.78%
Tangail		92k.m	3	4.16%
Sunamgonj		395k.m	1	1.38%

(Data related to distance collected from Civil Surgeon Office, Mymensingh.)

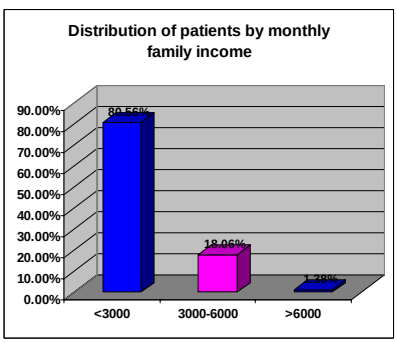


Figure-3 showing distribution of patients by monthly family income(n=72).

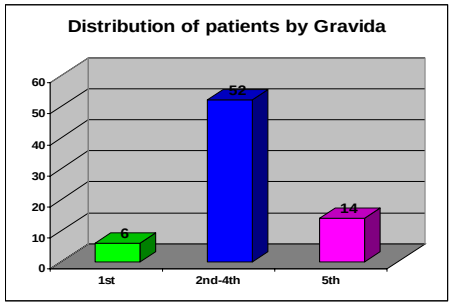


Figure-4 shows distribution of patients by education (n=72).

Figure-5 showing distribution of patients by gravida (n=72).

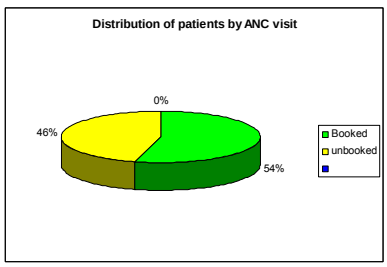


Figure-6 showing distribution of patients by Antenatal visit (n=72).

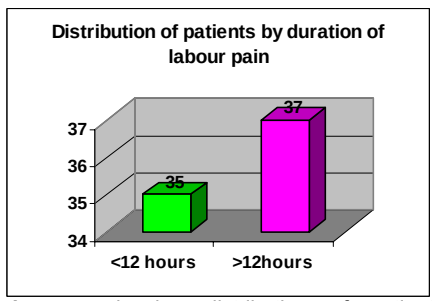
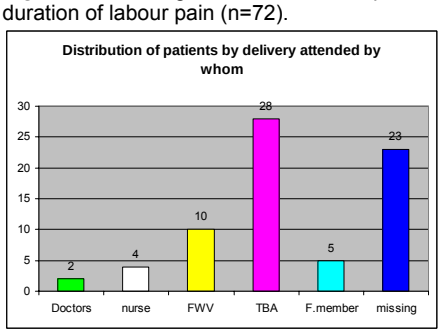


Figure-7 showing distribution of patients by duration of labour pain (n=72).



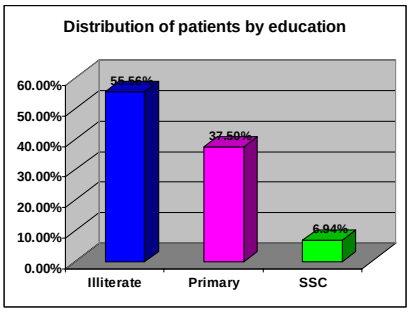


Figure-8 showing distribution of patients by delivery attended by whom before admission (n=72).

Table- III showing relation between different types of uterotonic drugs with rupture uterus (n=72).

Drug used	No of cases	Percentage
Oxytocin	42	58.33%
Misoprostol	1	1.38%
Undecided	5	6.95%
No drug used	24	33.33%

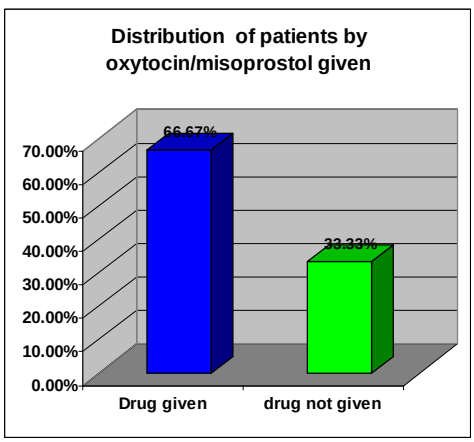


Figure-9: showing distribution of patients by oxytocin /misoprostol given (n=72).

Table- IV showing ratio of scarred and unscarred uterus (n=72).

variable	No. of cases	Percentage
scarred uterus	31	43%
unscarred uterus	41	57%

Discussion

During the period of study there were 5984 deliveries including 3619 Caesarean Section in the maternity units of the department of Obstetrics & Gynecology of Mymensingh Medical College Hospital (M.M.C.H.).This gives an incidence of one uterine rupture for every 83 deliveries or 12 per 1000 deliveries.

Abbottbad's study of Pakistan showed incidence of rupture 1:100[.]

According to Adigrat's hospital study of Ethiopia showed incidence of 1:110 [´]Aboyeji A.P.,(1999) showed incidence of 1:210 in their study[].Comparing with other studies, present series indicates high incidence ruptured uterus in this tertiary level hospital which is the main referral institute in greater Mymensingh covering large area and large population.

Regarding residence, 87.5% cases came from rural areas & 12.5% were urban women. Majority of cases (33.33%) came from different remote areas of Mymensingh and Netrakona district. where either communication was not good or E.O.C. (Emmergency Obstetric Care) service is not available.As for example, Haluaghat, Nandail, Valuka,Gaforgaon all these Upazilla of Mymensingh have E.O.C. centre and their patient referral number were less and minimum or no rupture cases were reported. Regarding distance from study place, it was evident that, maximum patients came from different remote areas where facility was not available and communication was not good. This delay in arrival to health facility played an important role in their rupture.

Regarding occupation, all rupture uterus cases (100%) were house wife. No service holder or other profession found in this time period. This indicates that, socially they were neglected and they had no right in decision making.

Most of the cases were of a poor socio-economic status. 79% patients were poor. 14(19%) cases were from middle class families and only 1(02%) rich woman was recorded as victim in this series.

No or poor (1-3 antenatal visits) antenatal care was recorded to be a prominent features in all the cases in the series.

In one study it is shown that, age of the patients ranged from 18 to 40 years with a mean of 35 years. In my study, the peak incidence was found to be in the 20-30 years age group. The youngest patient was 22years & oldest patient was 40years of age.49 cases (68%) found in between 20-30 years[.] This study is consistent with other studies.

In previous studies in developing countries showed rupture occurs most commonly in grand multigravida (para4&above). In my study , among all rupture cases, 6 patients(8.33%) were Primigravida, 52 patients (72.22%) were between

gravida 2nd to 4th,and 14 patients (19.44%) were gravida 5th or above. So this studies consistent with other study. Grand multiparty in addition of being in poor general health, did not know about contraceptives to prevent pregnancy & had no access to family planning services due to illiteracy, poverty, taboos & living in remote rural areas.
Similar to other studies, in this series most of the patients (56%) were illiterate. Due to illiteracy, they did not know, where to go, when to go and how to go during their emergencies.
In present study, regarding antenatal checkup, 46% of cases had no antenatal checkup during their pregnancies.
Remaining 54% had some degree of antenatal care. Among them only 2.77% cases gave regular history of antenatal checkup. Remaining 51% cases gave of irregular medical checkup during their antenatal period. In another study of a tertiary level hospital showed, 90% cases with no antenatal checkup and remaining 10% with irregular antenatal checkup [6]. Thus my finding is consistent with other study.

Regarding, duration of labour pain,in this study, 49% experienced labour pain of <12 hours and 51.38% cases labour pain lasting>12 hours. Among this 49% cases 11% cases gave no history of labour pain and silently ruptured in ante partum, with no evidence of labour and 37% cases had duration <12 hours. In 17% cases labour pain persisted 17 to 23 hours. 28% cases duration of labour pain was 20 hours and 7% cases labour pain was >48 hours .The longest duration of labour recorded was 4 days & the shortest was a few hours (had previous c/s scar).This finding inconsistent with those from the developed countries, where a comparatively large number of rupture associated with previous uterine scar where rupture occurs silently or duration of labour pain was less .They had greatly eliminated rupture occurring during labour.
Regarding injudicious use of uterotonic drugs, in Ayub hospital's study of Pakistan showed that inappropriate injections of oxytocics in 32.35% cases. Ilorin ,Nigerian study showed oxytocin use was 23%.

In present series, most of the mishandled cases 66.67% were exposed to injudicious use of oxytocin, misoprostol, homeopathetic, or undecided drug before admission. Among them 58.3% cases were exposed to oxytocin, in 1 case(1.38%) per vaginal misoprostol was given for augmentation of labour after admission into Mymensingh Medical College Hospital.

Undecided drugs were used in 6.95% cases that include homeopathic and other harbal medicine. In most of the cases (68.05%) labour handled at home or other local facilities. Thus present situation is very much alarming. If proper measure not taken just this moment by strengthening and proper application of law situation will be worse.
Regarding Labour handling (before admission), most of the cases (38.9%) handled by untrained birth attendants. senior family members in 6.94%cases. FWV in 13.9%cases, nurse in 5.6%cases, qualified doctor in 2.8%cases.
Regarding etiology of rupture uterus cases, in one retrospective study in Adigrat, Ethiopia showed, majority cases of causes of rupture was C.P.D.(53.7%) malpresentation and malposition were responsible for 25.9% rupture. Instrumental deliveries & previous history of uterine scar rupture were associated incidents with uterine ruptures in3.7% & 11.2% respectively. Use of oxytocics & placenta percreta were the causes in 3.7% & 1.8% of cases respectively. In another study of Pakistan ,it was shown that, majority of rupture occurred in unscarred uterus, most common factor being obstructed labour (26.97%),Among the rest ,8.8%were due to secondary contracted pelvis(5.8%)due to spontaneous onset of labour with transverse lie ,5.8% due to direct trauma. In 5.8% cases, there found spontaneous rupture of rudimentary horn. In other 2.9% cases, rupture was due to hydrocephalic baby where no second obvious cause was found. Among scar ruptures, they found 14.7% rupture occurred in previous scar. In these, there were 40% cases of scar dehiscence during spontaneous labour & 40% were due to induction with oxytocics (among scar ruptures) &20% cases, there was silent scar dehiscence.

In present series, majority of rupture found in unscarred uterus, most common factor being obstructed labour in 41cases (57%). Remaining 31cases rupture found into previous scarred uterus. Previous history of D.&C. or M.R. was found in 4 cases (that includes both scarred and unscarred uterus) and more than one type of surgery like L.S.C.S. & M.R. in one case.

No case of previous myomectomy or hysterotomy found in this time period. 57% (41cases) of the ruptures in the series occurred in patient with unscarred uterus with a previously scarred & unscarred ratio of 1:2. This is a striking feature in contrast to the present day findings from the western countries where the ratio of scarred & unscarred uterus is about 1:1 Depending on the different reports of ruptured uterus. This indicates that, incidence of rupture from previous caesarean scar is gradually increasing in our country in relation to previous decades. It is alarming to us. On the other hand, spontaneous rupture is gradually declining due to better health services. Caesarean section has posed a great threat in this respect, in our country, but at the same time, it warns us about the very high incidence of

spontaneous ruptures from obstetric trauma in our woman [7].
From 31 Recorded Cases (43%) in previously scarred group & 41cases (57%) in the unscarred group with a scarred & unscarred ratio of 1:2.

For developed countries, the data available indicate that, the prevalence of uterine rupture for woman with previous Caesarean section is in the region of 1%, Where as for woman without caesarean section, based on one large report, it is extremely rare (<1 pre 10,000). Overall the rate was below 1 per 1000. Efforts to reduce morbidity & mortality from uterine rupture should be focused or reducing primary Caesarean section rates & optimizing care for women with previous Caesarean section The most frequent causes of obstructed labour, preceding the ruptures in the series, where 48cases (67 %)had history of injudicious use of oxytocin by untrained personal. Grand multiparity was the only apparent incriminating factor in 18.7% cases. Spontaneous rupture during pregnancy was a rare happening.7Most of our cases with previous caesarean section ruptured during labour & most of them were brought to the hospital after some sort of trial of labour outside with the hope of avoiding any operative delivery.

This is therefore manifest that a good number of our women even with previous Caesarean section fail do not take the pain to follow the instructions given at the time of discharge after the primary caesarean section & they come to the hospital during their subsequent labour only when they failed to deliver or when serious deterioration of their condition occurs.

This finding is inconsistent with those from developed countries where there is significant decline has occurred in incidence of traumatic vaginal delivery with more than double increase in previous Caesarean section scar rupture.

This (Source increase of scar rupture is due to use of Caesarean section) in place of difficult vaginal delivery. Although better alternatives in terms of foetal outcome & decreased maternal morbidity.

Conclusion

This study will give us some clue regarding socio-demographic factor of this serious catastrophe of labour that may ultimately help the planners to make proper measure to minimize the incidence of ruptured uterus. Following measures can be taken:

- Traditional birth attendants should be properly trained so that they should be able to recognize the problem in time and they should not be allowed to use oxytocin or misoprostol without supervision of a trained doctor.
- Basic health units & rural health centers should be well equipped with trained personals & there services should be utilized properly according to established medical ethical guidelines.
- Contraception & family planning services should be made more effective to prevent unwanted pregnancies & grand multiparity.
- Roads & communication should be improved so that the people can reach earlier to a secondary or tertiary level health care centre in case of need [9].

Thus, in conclusion, majority of rupture uterus cases are preventable with good antenatal and intrapartum care and proper identification of high risk cases.Primary caesarean section should be judicious to reduce scar rupture to prevent rupture uterus.

References:

1 *Dechemey A H., Obstetric & Gynaecologic diagnosis and treatment, 10th edition, pp. 339-340.*

2. *Dhaifalah I., (2001) Spontaneous rupture of a previously scarred uterus.A case report & an overview of risk factors in Yemen Republic.-Dept.of Obs. & Gynae,Althawra hospital, Sana'a, Yemen Republic- Biomed papers145(2),pp.79-80*

3. *Khan S., Parveen Z., Begum S., Alam I.. Uterine rupture : A review of 34 cases at Ayub teaching hospital Abbottabad. Dept. of Obstetrics & Gynaecology, Ayub teaching hospital. Abottabad, Pakistan.*

4. *Amanael Gessessew, Mengiste M Melese- Adigrate Zonal hospital, P.O. Box 27, Adigrate town, Tigray, Ethiopia- Ruptured uterus: Eight year retrospective analysis of causes and management outcome in Adigrat Hospital, Tigray Region, Ethiopia- (Diseases prevention & control dept, Mekelle).*

5. *Aboyeji A.P., (2001) A study of 100 consecutive cases in Ilorin, Nigeria (University Ilorin teaching hospital Ilorin, Nigeria) journal –Obstet Gynaecol Res,code-Y0696 A,Vol.27,No6,pp. 341-348.*

6. *Khan F. T., -Clinical study on ruptured uterus in Obstetrics & Gynaecology Department of Rangpur Medical College Hospital – (B.C.P.S. Library 4627)*

7. *Nagarkatti. RS, Ambiye VR, Vaidya PRJ-Rupture uterus: Changing trends in etiology and management- Post grad Medicine- JPGM (Journal of Postgraduate medicine).year-1991/vol 37/issue-3/page 136-9.*

8. *Systematicreview of maternal mortality and morbidity : the prevalence of uterine rupture.- I.B.J.O.G : an international journal of Obstetrics & Gynaecology Sept. 2005. Vol. 112, PP 1221-1228)*

9. *Begum F., Chowdhury T.A., Bhuiyan A.B.,Bangladesh : Country situation of Maternal health Publication in (1st joint conference of RCOG & SAFOG)- pp.69-71.*

10. *Mukherjee J., Roy Chodhury NN., (1995) Rupture uterus- a clinical study of 70 cases J Obstet & Gynaecol India(45)pp. 85-9.*