ORIGINAL ARTICLE

Uterine Rupture a Preventable Catastrophe

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ABSTRACT

A study was carried out on 40 cases of uterine rupture admitted at Lady Willingdon Hospital, Lahore from Jan 2007 to Dec 2007. The aim of study was to determine the frequency and causative factors of uterine rupture and to discuss its preventive aspects. During this period the occurrence of uterine rupture was 1.73/1000 deliveries. Rupture occurred more frequently in 24 cases (60%) that had caesarean section previously for cepalopelvic disproportion and /or failure to progress. Among these 24 cases, 18 patients had caesarean section at non-teaching hospital. All the patients were nonbooked with no previous care. Other risk factors in our study included instrumental delivery, multiparity, obstructed labour and previous uterine rupture.
Key words: Uterine rupture, caesarean section scar rupture

INTRODUCTION

Though uncommon in developed countries, uterine rupture is still among one of the major obstetrical emergency dealt in labour wards of the developing countries. The incidence and pattern of uterine rupture reflect the education and health standard of existing maternal health care system.

The incidence of rupture of gravid uterus is particularly high in developing countries because of inadequate public health education and health services, failure to seek medical advice either due to ignorance or poverty and poor obstetrical care in combination with intrinsic factors like contracted pelvis and high parity. The low incidence in developed countries is due to the fact that their basic health education and health services are excellent and they follow modern trends in obstetrical care.

Rupture may occur in a previously scarred uterus or in an intact uterus. The aim of this study was to determine and analyze the etiological factors and maternal and foetal outcome. Some of the results are compared with other studies. Recommendations to reduce the incidence of this problem are made.

PATIENTS AND METHODS

All cases of uterine rupture either admitted with or who developed the complaint in hospital were included in this study over a one year period from January 2007 to December 2007. The Lady Willingdon Hospital, Lahore is a tertiary care teaching hospital at the entrance of Lahore and major number of high risk and complicated cases are referred here. Forty patients with ruptured uterus were treated during the study period. A detailed history of these patients including that of present and past pregnancies, labour and medication used during it was taken. A complete general physical, systemic and obstetrical examination was carried out. The presence of relevant risk factors previous caesarean section scar rupture, multiparity, malpresentation, obstructed labour, injudicious use of oxytocin and difficult instrumental delivery was recorded on proforma.

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RESULTS

During the study period, there were 23120 deliveries in our hospital and 40 cases had a ruptured uterus so the frequency was 0.173% (1.73/1000 deliveries). Of these 40 cases, two patients developed uterine rupture in hospital while remaining was admitted in emergency.

Table 1: Age of patients

Age	n=	%age
15-20 yrs	3	7.5
21-25 yrs	15	37.5
26-30 yrs	9	22.5
31-35 yrs	9	22.5
36-40 yrs	4	10.0

Table 2: Parity

Parity	n=	%age
0	2	5
1-2	14	35
3-4	4	10
5-8	12	30
>8	8	20

The youngest patient was 19 years of age who was primiparous and presented with obstructed labour. Most of patients presented between 21-25 years of age. There were 2 primigravidas in this

study. The parity of maximum number of patients (14 patients) was Para 1-2 and out of these 14 cases, 12 patients had undergone caesarean section.

Majority of patients presented at gestational age >36 weeks while only two cases seen at gestational age between 28-32 weeks and two cases between gestational age 33-36 weeks. Among 40 cases, 24 cases had previous caesarean section. Among these, 4 cases had upper segment caesarean section and 20 cases had lower segment caesarean sestina. Eighteen cases had caesarean section at non-teaching institution while six cases had caesarean at teaching institution.

Table 3 shows aetiological factors for uterine rupture identified in study. In 24 cases, there was rupture of previous caesarean section scar and in 16 cases rupture occurred in an intact uterus. Obstructed labour was the leading cause of rupture in an intact uterus.

Table 3: Risk factors for uterine rupture

Risk factors	n=	%age
Lower segment C/S	20	50
Upper segment C/S	4	10
Instrumental Delivery	4	10
Multiparity	2	5
Obstructed labour	6	15
Previous uterine rupture	2	5
Others	2	5

Laparotomy was performed in all cases after treatment of shock and 1-10 pints of blood were transfused before, during and after operation. Repair of uterus was done in 36 cases while hysterectomy was performed in 4 cases.

There was one maternal death in this study depicting a mortality rate of 2.5%. Perinatal mortality was high i.e. 85%.

DISCUSSION

Rupture of pregnant uterus is a grave obstetrical complication associated with high maternal mortality and morbidity, perinatal mortality. The frequency of ruptured uterus in this study was 1.73/1000 deliveries. It is significantly lower than figures reported from Canada[1] and Nigeria[2] but higher than reported prevalence in Tunis[3] and West Africa[4]. This wide variation is due to divergent inherent characteristics of the obstetric population in different regions in quality and quantity of obstetric services around the world.

Most of the patients in this study presented between the ages of 21-25 years (37.5%). This is in contrast to a study done in Abbasi Shaheed Hospital Karachi[5] where uterine rupture had significant association with maternal age more than 35 years. In a study undertaken in Sagamu, Nigeria[6] 76.7% patients were >30years.

Multiparity is generally recognized as an important predisposing factor in the etiology of uterine rupture. In the present study, 35% patients were Para 1-2 where and 50% patients were Para 5 or above. A study has been reported from Swat[7]. 74% patients were Para 5 or above. In my study, increasing trend of uterine rupture in low parity group may be due to increase in caesarean section rate in primigravida. A similar study has also been reported by Neilson et all[8].

Rupture due to obstructed labour is more common in areas with poorly developed health facilities while scarred uterus is the main causative factor in places with an increasing caesarean section rate without careful monitoring in subsequent pregnancies. Rupture of the previous caesarean section scar was the most common aetiological factor identified in this series (60%). The study reported from Saudi Arabia[9], India[10] and Tunis[11] showed similar results. The rate of uterine rupture at the site of previous caesarean section was even high in Sagamu (Nigeria)[12] and Canada[1]. However, in contrast to these, study carried out in Swat[7] and study reported by Konje[14] in Nigeria showed obstructed labour as the most common aetiological factor.

In present study, scarred uterus was found to be the main causative factor for uterine rupture followed by obstructed labour. During the last two decades the caesarean section rate has doubled and tripled and single indication contributing the most to this increase was dystocia. Liberal use of caesarean section for dystocia must be checked in order to control the rising percentage of scarred obstetrical population and associated disasters particularly rupture. At private hospitals and clinics, the threshold for doing caesarean section is lower due to commercial reasons and extra caution. In small clinics and centers, most of the sections are done without legitimate indication by unskilled personnel resulting in various intra- and post-operative complications. This will keep on increasing the number of parturient with prior uterine scar making them more vulnerable to uterine rupture in subsequent pregnancies. The most important factor associated with uterine rupture detected in this study was lack of skilled monitoring during the process of labour.

Most of the ruptures in patients included in this study could have been avoided if a decision regarding their mode and time of delivery had been made by experienced personnel beforehand. This would have been possible if these patients had proper antenatal surveillance and were all convinced to have hospital delivery. Patients were generally

illiterate and belonged to a lower social class. Because of the attitude and traditional beliefs of this class, caesarean section is regarded as a reproductive failure. This militates against booking for hospital delivery in the subsequent pregnancy thus leaving the mother to the services of untrained and unskilled personnel. Women with two or more previous sections are more likely to seek medical care in subsequent pregnancies as compared to those with one caesarean section because of general belief that after two caesarean section, vaginal delivery becomes risky. TBAs usually refer the cases with two or more previous caesarean section for hospital booking while they do their level best to deliver the case with one prior caesarean section and thus end up with ruptured uterus. Most of the study patients came to the said hospital after being mismanaged not only by TBAs but also by nurses and doctors. On the basis of study findings, it is recommended that following steps should be taken to lower the incidence of uterine rupture.

1. The indication for primary caesarean section should be well justified so as to avoid unnecessary sections and thus rupture at previous caesarean section scar site.
2. At the time of discharge, the woman should be clearly informed about the nature of operation and importance of hospital delivery in subsequent pregnancies.
3. TBAs and all concerned health personnel must be warned about the risks in women with previous scar and advised to refer all patients with a previous caesarean section to appropriate hospitals.
4. In antenatal clinics, the mode and time of delivery in patients with scarred uterus should be planned well time around 36 weeks. The patients selected for the elective caesarean section must be dealt with at 38 weeks. The cases in whom trial is to be allowed, should have vigilant intrapartum care and monitoring in well- equipped hospital by experienced staff capable of dealing with all emergent complications.

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