

## Rupture uterus in primigravida: Morbidity and mortality

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### Abstract

**Objective:** This paper is aimed to present “Rupture of the uterus (RU) in primigravida “– unscarred cases which are supposed to be extremely rare.

**Material and method:** The charts of patients labelled as “Rupture Uterus” for the period 1985 – 2005 AD (2042 – 2061 BS), 20 years were taken out and analysed.

**Result:** There were 251 cases of rupture uterus during the study period giving the incidence of 0.09% i.e. 1:1100 among live births in a very busy tertiary maternity hospital of capital, Kathmandu of Nepal. There were 60% spontaneous, 29% scar dehiscence and 11% Iatrogenic/traumatic rupture and death due to RU was 7.9%(n=20). Fifteen cases (6%) were primigravid patients--six were young primi (age 19 and below) and 9 primigravid patients. Five cases were referred from the district hospitals. Ten cases were brought from very far off i.e. more than 50 KM from the city. One case presented at 34, one at 41 and all the others presented between 38 to 40 weeks of gestational age. Only three cases had attended ante-natal clinics. All were having labour pain for more than 48 hours at home. Findings of laparotomy: The lesions found were: ruptured bladder and complete lower segment (CLS) up to the cervix – 1, CLS & cervix –2, complete lower segment (CLS) 1, Complete upper segment (CUS) – 2, Complete upper & lower segment (CULS) – 6, (one had tear at posterior wall of the uterus and the other had tear up to posterior vaginal wall) and Incomplete lower segment (LS) 2. Blood grouping & Rh: six cases had O+, four had A+, four had AB+ and one had B positive. The blood transfusion given was 1 – 4 units. The treatment given was laparotomy and repair in 10; one had LUSCS, repair of bladder and cervical injury. One had repair and bilateral tubal-ligation, one had subtotal hysterectomy and another had hysterectomy & repair of posterior wall of vagina. Four cases were admitted in the state of shock among which 1 had irreversible shock and died before surgical intervention. Another died on the 3<sup>rd</sup> post-operative day due to convulsions and shock. Maternal mortality (MM) was 13% (2/15) in primips. All cases presented with intrauterine fetal death (IUFD) and had still births (one baby was hydrocephalic). The hospital stay varied from 3 – 170 days. Four cases had vesico-vaginal fistula (VVF)

**Conclusion:** Rupture of uterus in primigravida though rare, has been common in developing countries with low socio-economic status.

Nepal is a land locked developing country of Himalayas. Home delivery takes place in about 90% cases without skilled / medical assistance. The road-communications are difficult. But in recent years some improvements have been done. The maternal mortality and reproductive morbidity is very high.

The main aims of the present study were to investigate the incidence, age, the distance of the place from where they were brought, how they had presented, what were the lesions, surgical treatment, hospital stay and other morbidity and mortality of the rupture of the unscarred uterus of the primigravida.

### Materials and method

Hospital records of 20 years labelled as “Rupture of the uterus” were taken out and a detail study of the primigravidae was done and analysed.

### Result

There were 272245 deliveries between 1985 to 2005AD (2042 to 2005 BS) -- 20 years period. Average caesarean section rate was 11% in a very busy tertiary maternity hospital of capital, Kathmandu of Nepal. There were 251 cases of rupture uterus during the study period giving the incidence of 0.09% i.e. 1:1100 among live births. The maternal mortality (MM) due to RU was 7.9 % (n=20). There were 150 (69%) spontaneous, 74 (29%) scar dehiscence and 27 (11%) Iatrogenic/traumatic rupture (6 were with the scar)<sup>1</sup>.

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Fifteen cases (6%) were primigravid patients. Six were young primi (age 19 and below) and 9 primigravid patients. Five cases were referred from the district hospitals. Ten cases were brought from very far off i.e. more than 50 KM from the centre. The earliest was 34 and latest, 41 weeks and the others presented between 38 to 40 weeks of gestational period. Only three cases (5/15) had attended ante-natal clinics. All had labour pain for more than 48 hours at home. Five cases were taken to the nearby district hospital from their home and from there they were referred to the higher centre. One of them was kept at district hospital for more than 15 hours and after some intervention, she was referred to the central hospital. Four cases were admitted in the state of severe shock among which 1 had irreversible shock. On admission, five had cephalic presentation with obstructed labour and one of them had severe PET, 1 with Bicornuate uterus and hand prolapse, one with transverse lie and hand prolapse, one with breech. Another patient had breech and cord presentation. (This patient was enhanced the labour with Syntocinon drip.) Three of them had prolonged labour, out of which one had vaginal delivery with episiotomy and rupture of the uterus was detected after 5 hours. One had H/O fall at 38 weeks of pregnancy giving rise to abruptio placentae and RU. A case who was aged 37, gave H/O treated for sub fertility (including D&C done 18 months back) had fetus and the placenta in the abdominal cavity on admission. Findings of laparotomy: The lesions

found were:- rupture bladder and complete lower segment (CLS) up to the cervix – 1, CLS & cervix -2 ( one of them had syntocinon drip to enhance the labour.), complete lower segment (CLS) 1, Complete upper segment (CUS) – 2, Complete upper & lower segment (CULS)– 6, (one had tear at posterior wall of the uterus), (1 had tear up to posterior vaginal wall) and Incomplete lower segment (LS) 2. The surgical treatment given was laparotomy and repair in 10; one had LSCS, repair of bladder and cervical injury. One had repair and bilateral tubal ligation, one had subtotal hysterectomy and another had hysterectomy & repair of posterior wall of vagina All cases presented with intrauterine fetal death (IUFD) and had still birth (one baby was hydrocephalic) (Table 1). Blood grouping & Rh: six cases had O, four had A, four had AB and one had B positive. All were Rh positive. The blood transfusion given was 1 – 4 units depending upon the condition. Hospital stay: One case stayed in the hospital for 170 days as she developed severe bedsore and had to have repeated skin grafting, another stayed 49 days for wound gaping other 12 cases were discharged between 8 to 18 days. Four cases developed vesico-vaginal fistula (VVF), though only one case had bladder involved and had repair during the LUSCS. One of them was brought in moribund condition, resuscitation failed and died before surgical intervention. Another one who also had PET, died on the 3<sup>rd</sup> post-operative day due to Eclampsia and irreversible shock.

**Table 1:**

S. No.	Name	Age	Particulars	Lesions and treatment
1	SK	20	Obstructed labour (OL) Caput ++, LP 7days.	complete upper & lower segment (CULS) Laparotomy & repair (L&R),wound gaping, V.V.F.
2	GPM	17	Prolonged second stage of labour ND & episiotomy, RU detected after 5 hours	Incomplete lower segment L&R.
3	SB	19	Transverse lie, Hand prolapse for 2 days OL	Incomplete lower segment ,L&R Skin grafting, V.V.F.
4	CS	19	prolonged labour & PET in shock OL hydrocephalus foetus	Complete upper segment (CUS), Died 3rd POD due to convulsions
5	AS	37	Foetus & placenta in the abdominal cavity in shock case was treated for subfertility, had D&C 18 months back.	CUS, L&R.
6	MM	17	Prolonged second of labour	Complete lower segment (CLS), L+R
7	SKM	18	Breech & cord presentation Syntocinon	CULS. Subtotal hysterectomy 3 hours after delivery.
8	PMR	24	Obstructed labour Brought in very poor condition, irreversible shock due to haemorrhage, DIC referred from district Hospital	Died before intervention. Case was kept for 15 hours in District hospital
9	ST	25	Prolonged labour Referred from district hospital in shock.	LSCS, ruptured bladder & cervix repaired, resuture of wound, V.V.F.
10	MMB	19	Abruptio placentae (APH). H/O fall at 38 weeks	CULS, L&R, BTL.
11	MP	21	Obstructed labour Referred from district hospital	CULS, Posterior wall of uterus, L&R, V.V.F.
12	TDA	24	Obstructed labour, breech presentation Referred from district hospital	CULS, L&R.
13	BMT	22	Prolonged labour Referred from district hospital, Syntocinon.	CLS up to cervix, L&R & repair of cervix.
14	MT	21	Hand prolapse Bicornuate uterus	CLS & cervix, L&R & repair of cervix.
15	DMT	32	Obstructed labour in shock	CULS, TAH, repair of post wall of vagina,

## Discussion

Rupture of the pregnant uterus is a catastrophic obstetric complication which in primigravids is supposed to be extremely rare. Fifteen cases (6%) of primigravida, nulliparous ruptured uterus have been presented here, giving an incidence of 1:18150 live birth, which definitely gives a message that nulliparous i.e. primigravida uterus is not immune to rupture. Due to illiteracy, poverty and socio- culture belief, early marriage is common in Nepal. The geographical diversities make the issues more difficult for free communications. Maternal mortality and morbidity have remained very high in the developing countries and one of its commonest causes is ruptured uterus, which in a primigravida is rather unusual. Chin et al <sup>2</sup> reports that uterine rupture is extremely rare in the absence of the commonly recognised risk factors. Walsh et al <sup>3</sup> have reported the rare occurrence of a spontaneous uterine rupture in a non-labouring primigravid with no known risk factors that the main risk factor is a scarred uterus, usually secondary to a previous caesarean delivery. Catanzarite V. et al <sup>4</sup> comment that intrapartum rupture of the unscarred uterus are usually associated with risk factors as grand multiparity, malpresentation, history of gestational trophoblastic disease, or instrumented delivery. They state that the rupture during first pregnancy is extremely rare. Kazandi M <sup>5</sup> reports a primigravida with rupture of gravid uterus due to placenta percreta, which is a serious complication of pregnancy. Abbi M and Misra R <sup>6</sup> have reported a case of 20 year-old – primigravida in whom clinical features resembled those of abruptio placentae. Wiswedel K<sup>7</sup> has reported that after induction with oxytocin because of premature rupture of the membranes, a caesarean section had to be performed owing to fetal distress and at laparotomy a fundal rupture of the uterus was found in a primigravida. Rupture of a primigravid uterus in the absence of obstetric trauma or congenital abnormality is rare but in the present study, one had H/O fall and another had the bicornuate uterus. An unusual case of uterine rupture in a primigravida, in which the left leg of the infant ruptured through the posterior fundal part of the uterus, is reported by Nel JT <sup>8</sup> in which there was no definitive predisposing cause but some of the clinical signs and symptoms resembled those of abruptio placentae. Milon et al <sup>9</sup> reported the rupture at term during labour of a non-scarred uterus under epidural anaesthesia in a 17-yr-old primigravida. He warned that this exceptional event may lead to catastrophic maternal and fetal consequences. Quakernack et al <sup>10</sup> reported that in 15% of the cases spontaneous rupture of the uterus occurs but in this study there was 69% spontaneous rupture<sup>1</sup>. They further added that the

maternal mortality (MM) ranges from 6-30% in cases of RU depending on the type of delivery. In the present series, MM for RU was 7.9 % (n=20) and in primips it was 13% (n=2)<sup>1</sup>. They have expressed the views that early hysterectomy is the method of choice to prevent serious complications of haemorrhage. In the present study 2 cases, though primipi, had hysterectomy for saving life. Jones DE and Mitler J. <sup>11</sup> have reported a case of a primigravid patient with spontaneous rupture of a bicornuate uterus associated with significant anaerobic infection and thinning of the myometrium at the site of the rupture was noted in the pathological specimen. In the present study there was a case of bicornuate uterus with hand prolapse who had settled with repair of the RU. Mishra SK et al <sup>12</sup> reports that although ruptured uterus is nowadays a rare obstetric emergency in Western countries, it is still alarmingly common in developing countries, where it remains a major cause of maternal mortality and morbidity. In their series there were 2 nulliparous women, of whom one was due to road traffic accident and the other had prolonged second stage of labour. In their series, most were unbooked cases with no antenatal care. Nearly all cases had started labouring at home in the care of relatives and in absence of skilled birth attendant. After prolonged labour, usually prolonged second stage, various interventions had often been attempted at home or in other health facilities before admission to the tertiary centre. It was exactly the same story of those 5 cases in the present study. Most were brought in shocked condition and required urgent resuscitation, laparotomy and blood transfusion, many required intensive care and ventilator support. In the present study all cases of RU were kept in the maternal intensive care unit (MICU) of maternity hospital. Hospital stay was prolonged in 4 cases, all had blood transfusion, four developed VVF and 2 of them lost their uterus and one reproductive carrier due to bilateral tubal - ligation. Two of the 15 cases lost their life at young age (19 and 24) due to the RU. Not a single baby could see this world!

## Comments

The Government of Nepal has been working on Safe –motherhood (SM) initiative since 1993 and has launched National SM Programme since 1997, has also developed SM 15 year plan in 2002. It also laid the goal as to reduce the maternal mortality (MM) to 250/100,000 live birth by 2017 AD, through” SM Plan of action 2002-2017”, Outputs of which will be expressed by increased equity and availability of quality health service, increased access to maternal and neonatal health services, improved legal and

social status of women .Recent report,(2006 in the press) of reducing MM is encouraging though due to the geographical diversities catering of services throughout the country in equal proportion is not that easy.

#### **Acknowledgement**

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