



CLINICAL STUDY OF UTERINE RUPTURE OF PREGNANCY IN SCARRED VERSUS UNSCARRED UTERUS.

Obstetrics & Gynaecology

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ABSTRACT

Uterine rupture is a serious life-threatening obstetric emergency which is preventable & timely diagnosis and management gives better outcome.

Aim and objective:- of this study is to determine incidence, etiology, management, maternal and fetal outcome so as to prevent it as far as possible.

Material and method:- A prospective observational study was conducted over a period of 2 years from January 2018 to December 2019 in a tertiary centre of North Bihar, India. Total of 51 cases were diagnosed to be rupture uterus clinically during this period.

Result:- A total of 18677 deliveries occurred during this period giving incidence of .27 % i.e 2.7 per 1000 deliveries. The most common factor was previous cesarean section, 60.78% and most of the cases were multiparous ≥ 3 . Most patients came with poor general condition, in a stage of shock, with palpable fetal parts and abdominal pain. Patients were resuscitated first and then laparotomy done followed by either repair, repair + sterilization or hysterectomy. There was a high incidence of maternal and perinatal morbidity and mortality.

Conclusion:- Universal antenatal care in specially previous cesarean cases with mandatory hospital delivery with skilled birth attendant can improve maternal and perinatal outcome.

KEYWORDS

INTRODUCTION :-

Uterine rupture is one of the most dangerous obstetric situation carrying an increased risk of maternal and perinatal morbidity and mortality, which is associated with poorly managed labor and also a factor for many medico legal cases for practicing obstetrician and gynecologist.

There is a wide variation in incidence between developed and developing countries. In developing countries the incidence is high due to socio-economic factors, cultural practices, lack of access to antenatal and intranatal care, prolonged and obstructed labor.

In recent decades incidence of caesarean section has increased due to liberalization of indication of caesarean section even in developing countries. This contributes more to rupture uterus in developing countries which is also more prevalent in developed countries.

Rupture of unscarred uterus may be traumatic or spontaneous. Traumatic factors includes abdominal trauma, early and injudicious use of oxytocin or prostaglandins, internal podalic version, assisted breech delivery, and instrumental delivery. Spontaneous rupture is usually observed in cephalo pelvic disproportion malpresentation and delivery of grossly anomalous foetus. The prevalence was found to be significantly higher in underdeveloped countries of Asia and Africa in comparison to high income countries. In developed countries the prevalence of uterine rupture with previous cesarean section is around 1% & without previous cesarean section it is around .1 %. For less and least developed countries uterine rupture is more prevalent and a serious problem.

In developing countries maternal mortality ranges between 1% and 13% and perinatal mortality between 74% and 92%. Previous cesarean section is the main risk factor for uterine rupture.

The sign and symptoms of uterine rupture depends upon site and extent of uterine defect. Patient presents with sudden severe abdominal pain, features of hypovolemic shock, maternal tachycardia, hematuria, tender distended abdomen, abnormal uterine contour, cessation of uterine contraction, easily palpable fetal parts, & absent fetal heart sound. Maternal consequences of uterine rupture depends upon the time between diagnosis and surgical management.

Fetal consequences are admission to NICU due to fetal hypoxia or anoxia and neonatal death or intrauterine fetal death.

Once diagnosed management must include supportive therapy for mother until surgical intervention can arrest life threatening hemorrhage.

Delivery of fetus within 10 to 30 minutes of uterine rupture can protect it from fatal sequences.

During laparotomy after delivery of fetus type of surgical treatment of mother depends on

- mother's general condition
- type of uterine rupture
- extent of uterine rupture
- Amount of hemorrhage
- mother's desire for future childbearing.

Repair with or without bilateral tubal ligation is done in young and stable patient. Repeat CS is done at 36 weeks of pregnancy in next pregnancy in this group of patients. Hysterectomy is considered treatment of choice for patients of intractable hemorrhage or if rupture sites are multiple.

Objective of this study is to determine the incidence, etiology, management, maternal fetal outcome and recommended strategy for its prevention at primary, secondary, and tertiary level during antepartum or intrapartum period so as to reduce the incidence of maternal and fetal morbidity and mortality.

MATERIAL AND METHOD :-

A prospective observational study was conducted over a period of 2 years from January 2018 to December 2019 at Sri Krishna medical college and hospital, Muzaffarpur, Bihar. Total of 51 cases who were diagnosed with rupture were included in the study. During this period 18677 deliveries occurred. Detailed history regarding maternal age, parity, gestational age of fetus, booked or unbooked status, residential address, etiological factors like previous cesarean section, inter delivery interval was taken in account.

Information regarding induction or augmentation of labour, instrumentation or intra uterine manipulation intervention done at primary health centre was taken from the accompanying medical attendant or with the help of referral slip.

Emergency investigation as hemoglobin, blood grouping & cross matching, viral markers, bleeding time and clotting time were done.

Emergency laparotomy after pre-operative resuscitation done. Hysterectomy or repair of rupture site was done depending on the condition of the patient, parity, presence or absence of infection. Depending on the blood loss blood transfusions were given during intraoperative for postoperative period.

Follow-up of cases done till discharge and then for further for 3 months.

OBSERVATIONS AND RESULTS

A total of 18677 deliveries were conducted and 51 cases of uterine rupture managed during the 2 year study period.

Out of 51 cases 2 cases came to hospital in gasping condition and expired during initial resuscitation. 49 cases underwent laparotomy out of which 4 cases expired during post-operative period.

Thus incidence of uterine rupture was .27% ie .2.7 per 1000 delivery.

Out of 51 operated cases 31 had history of prior caesarean section and 20 were without prior caesarean section. 6 cases had antenatal checkup and 45 cases had no ANC papers.

Majority of the patients (68.63%) presented between the ages of 20-30 years and mean parity was 2, uterine rupture was more common (39.21%) while only 1.96% were nulliparous. Only 1 case >28 weeks with previous 2 caesarean section were found. 49.02% were in 37-40 wks gestation. Inter-delivery interval of >18-24 were more vulnerable to rupture uterus.

Total no of live birth were 11, 4 had neonatal death due to delivery in asphyxiated condition. 38 fetuses were stillborn. Out of 49 laparotomy caesarean hysterectomy was done in 25 cases. (sub total hysterectomy in 13 cases and total hysterectomy in 12 cases.) Repair was done in 13 cases and repair with sterilization in 11 cases. 6 mother out of 51 expired during study period.

Table 1 Incidence of rupture uterus with regard to demographic variables and clinical profile.

Sr. no	characteristics	no. of cases	percentage(%)
1.	Age in years		
	<20	1	1.96
	20-30	35	68.63
	>30	15	29.41
2	Antenatal care		
	booked	6	13.34
	Unbooked	45	88.24
3	Parity		
	0	1	1.96
	1	19	37.25
	2	20	39.22
	3	2	3.92
	4	4	7.84
	5	5	9.80
4	Gestational age		
	<28	1	1.96
	28-32	5	9.80
	33-36	20	39.22
	37-40	25	49.02
5	Inter delivery interval (months)		
	>18-24	26	50.98
	24-36	15	29.4
	>36	10	19.61
6	Previous section		
	With previous section	31	60.78
	Without previous section	20	39.22

Patients with previous caesarean section was > without section.

Table 2

Modes of presentation	No of cases	Percentage(%)
Signs of shock	39	76.47
Distorted uterine contour	37	72.55
Superficially palpable foetal parts	35	68.63
Absent FHS	30	58.82
Abdominal tenderness	27	52.94
Vaginal bleeding	13	25.49
Haematuria	8	15.69

Clinical feature were extremely variable and most of them presented with more than one feature. Maximum cases presented with signs of shock.

Table 3

Etiological factors	No. of cases	Percentage (%)
Caesarean scar rupture	31	60.78
Multiparity	30	58.82
Fetopelvic disproportion	21	41.18
Malpresentation	6	11.76
Oxytocin or other uterotonic	13	25.49

Some patients presented with more than one etiology.

Table 4

Surgery	No of cases	Percentage (%)
Repair with bilateral tube ligation	11	21.57
Repair without bilateral tube ligation	13	25.49
Subtotal hysterectomy	13	25.49
Total hysterectomy	12	23.52

Two maternal death occurred before operation due to poor general condition at the time of admission.

Table 5

Outcome	No. of cases	Percentage (%)
Live birth	7	13.73
Still birth and neonatal death	42	82.35
Still birth	38	74.51
Neonatal death	4	7.84

Maternal death rate is 11.67% whereas perinatal death rate is 82.35%.

DISCUSSION:-

Rupture uterus is a preventable but potentially life threatening condition which requires prompt diagnosis and treatment. Incidence of rupture uterus in present study was 2.7 per 1,000 delivery. This is due to increased number of referral from rural areas, mismanagement of high-risk patients at the time of labor by inexperienced local midwives due to socio-economic factors, cultural practices like home delivery, and difficult transportation from remote areas. Higher incidence has been studied by mahababu et al (0.83%) and Atamet al (1.14%).

In this study ruptured uterus was present in 60.78% of scarred uterus and 39.22% of unscarred uterus. Similar high incidence of rupture in unscarred uterus was noted in the study by saini VK et al. This is due to neglected obstructed labour frequently met in rural areas. 31 cases (60.78%) were multiparous ≥ 3 . It was higher than study by Malik HS et al (42.7%). Main modality of treatment is resuscitation and laparotomy. Repair was possible in 47.06% and rest 49.01% has to undergo hysterectomy and this is higher than study in Rathod Set al (39.2%). It was because many of these cases were referred from remote area and due to delay in arrival their condition deteriorated.

Perinatal mortality was still birth plus neonatal death that is 86.27%. Similar studies found in Rathod Set al (90.5%). Maternal mortality was 11.76% in the present study higher than Sahuet al (2.76%). Cause for high maternal mortality is arrival of cases in late moribund state of irreversible shock from remote areas.

CONCLUSION :-

Uterine rupture is associated with high maternal and perinatal morbidity and mortality. This study concluded that previous uterine scar due to caesarean section is the commonest cause of uterine rupture followed by a neglected prolonged labor in unscarred uterus.

This catastrophic event is preventable and can be prevented by universal antenatal care and mandatory hospital delivery of all previous caesarean cases in addition to training of midwives in rural areas for quick and early referral to tertiary centre with the well trained health workers may help to reduce the incidence of the rupture uterus.

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