International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2020; 4(2): 90-93
Received: 15-01-2020
Accepted: 17-02-2020

Dr. Jaiprakash Sahu
Assistant Professor, GMC Ambikapur, GMC Ambikapur district Surguja Chhattisgarh, India

Dr. Somila Xess
Assistant Professor, GMC Ambikapur, GMC Ambikapur district Surguja Chhattisgarh, India

Corresponding Author:
Dr. Somila Xess
Assistant Professor, GMC Ambikapur, GMC Ambikapur District Surguja, Chhattisgarh, India

Prospective observational study of Fetomaternal outcome in case of ruptured uterus in tribal area of Chhattisgarh

Dr. Jaiprakash Sahu and Dr. Somila Xess

DOI: https://doi.org/10.33545/gynae.2020.v4.i2b.510

Abstract
Introduction: Uterine rupture is one of the major obstetric complication leading to grave sequelae in both mother and fetus. The major causes of uterine rupture in developing countries are obstetric and non-obstetrics such as multiparity, teenage pregnancy, socioeconomic status, previous caesarean section scar, unsupervised labor and unjustified use of uterotonic agent; previous caesarean section is the major risk factor for rupture of uterus.
Materials and Method: Prospective observational study was conducted over period of one year from January 2019 to December 2019 at department of Obstetrics and Gynecology unit of Government Medical College Hospital, Ambikapur, and Chhattisgarh. Total number of deliveries conducted during this period was 5107.All cases of ruptured uterus who were either admitted with or who developed this complication in this hospital, were included in the study.
Result: We have studied total 12 patients who presented with ruptured uterus over a time span of one year. Around 66.6% of patients belonged to 21- 30 years of age whereas 33.33% were between 31 to 40 years of age.75% were second Gravida while 25% were second or third Gravida. Around 83.33% presented with vaginal bleeding, palpable fetal parts and tachycardia while 66.6% had abdominal pain and tenderness. 66.6% had hypotension, out of which 16.66% had shock.50% presented with absent uterine contraction. Eight (66.66%) out of twelve women had a history of handling by a traditional birth attendant. Risks with one previous caesarean section were 8(66.7%) whereas previous two caesarean section were 2(16.7%). Unscarred uterine ruptures were 2(16.6%).25% underwent scar repair with tubal ligation while 50% had scar repair without tubal ligation. One woman had ruptured urinary bladder also and thus repair was done along with scar. One woman (8.3%) had subtotal hysterectomy and one (8.3%) subtotal hysterectomy with bladder repair. There was total abdominal hysterectomy in one patient.
Conclusion: Ruptured uterus is a preventable phenomenon, proper antenatal checkup and prompt actions are required to prevent major disaster.

Keywords: Rupture, caesarean section, obstructed labour

Introduction

Uterine rupture is one of the major obstetric complication lead to grave Sequelae in both mother and the fetus. The incidence in developed and developing countries varies from 1 in 250 to 1 in 5000 deliveries depending upon standard of obstetrics care and area of population [1]. The rate of uterine rupture is low in developed countries but higher in developing countries like India, and is a leading cause of maternal mortality. In India it is responsible for 5-10% causes of all maternal death [2]. Uterine rupture may be complete when full thickness of uterine wall and communicating peritoneal cavity is involved or incomplete when it is separated from peritoneal cavity by visceral peritoneum and fetus is inside uterine cavity [3]. The major causes of uterine rupture in developing countries are obstetric and non-obstetrics such as Multiparity, teenage pregnancy, socioeconomic status, previous caesarean section scar, unsupervised labor and unjustified use of uterotonic agent [4]. Previous caesarean section is the major risk factor for rupture of uterus. Incidence of scarred uterine rupture is rising due to increasing rate of caesarean section [5].

In developing countries like India where literacy, poverty, lack of antenatal care, poor transport facilities, unfavorable geographical area and inadequate equipment /staffing combine to magnify the problem [6]. Women in our country do not come for regular antenatal checkup preferring home delivery by traditional birth attendant, instead of coming to the hospital for trial of scar

and grand multiparity prolonged and obstructed labor set up [7]. Maternal outcome mainly depends on the integrity of previous scar, cause and site of rupture, x rupture and management rupture and management or prompt referral [8]. Uterine rupture occurs during labor or delivery and very rare during pregnancy [9]. Maternal manifestation are variable, these includes constant abdominal pain and sign of intra-abdominal hemorrhage like maternal tachycardia, hypotension ranging from subtle to severe (hypovolemic shock),cessation of uterine contraction, loss of the fetal presenting part, uterine tenderness and change in uterine shape [10].

Material and Method

Prospective observational study was conducted over period of one year from January 2019 to December 2019 at department of Obstetrics and Gynecology unit of Government Medical College Hospital, Ambikapur, and Chhattisgarh. Total number of deliveries conducted during this period was 5107. All cases of ruptured uterus who were either admitted with or who developed this complication in this hospital, were included in the study. Patient having ruptured uterus due to congenital anomalies or direct trauma on uterus were excluded from study. Detail history of patient's age, address, parity, education, socioeconomic status, antenatal checkup, previous cesarean section or other surgery on uterus was taken. Diagnosis was made on history and examination and confirmed by laparotomy. Surgical procedure depend on general condition of patient, parity, desire for future child bearing, site and extent of rupture. Surgical management comprises repair of uterus without tubal ligation, repair with tubal ligation or hysterectomy. If urinary bladder involved, repair done along with above procedure. All patients were followed up until their discharge from hospital. Data was analyzed and statistical analysis done.

Observation and Results

Our hospital been located in the tribal area of Chhattisgarh, most of the cases were referred to our centre from the periphery. Few cases were also there who travelled through two to three centres to reach us hence delayed referral was also one of the reasons for patients presenting with ruptured uterus. We have studied total 12 patients who presented with ruptured uterus over a time span of one year out of which one had rupture in our institute, rest eleven were referred cases. Around 66.6% of patients belonged to 21-30 years of age whereas 33.33% were between 31 to 40 years of age. 75% were second gravida while 25% were second or third Gravida. All of the women included in our study were housewives belonging to lower socioeconomic status and were uneducated or had a primary education.

Unbooked cases were 75%, here comes the importance of antenatal checkup which might be lacking and is one of the major reasons of the patients presenting late in the hospital. Fetal outcomes were measured in terms of live or dead fetus and birth weight. Ten (83.3%) were dead and only 2(16.66%) were live. 66.66% had birth weight between 2.5 to 3.5kg. (Table no.1).

Table 1: Socio Demographic features and fetal outcome

Maternal age in year	Un scarred uterus n=2	Scarred uterus n=10	Total number n=12	Percentage %
21-30	1	7	8	66.66
31-40	1	3	4	33.33
>40	0	0	0	0
Parity				
0	0	0	0	0
1-2	1	8	9	75
3-4	1	2	3	25
5or >5	0	0	0	0
Occupation				
House wives	2	10	12	100
Working women	0	0	0	0
Antenatal status				
Booked	1	2	3	25
Un Booked	1	8	9	75
Fetal outcome				
Live birth	1	1	2	16.66
Dead fetus	1	9	10	83.3
Birth weight in kg				
<2.5	0	1	1	8.33
2.5-3.5	1	7	8	66.66
>3.5	1	2	3	25

Around 83.33% presented with vaginal bleeding, palpable fetal parts and tachycardia while 66.6% had abdominal pain and tenderness. 66.6% had hypotension, out of which 16.66% had shock.50% presented with absent uterine contraction. Eight (66.66%) out of twelve women had a history of handling by a traditional birth attendant. The clinical presentation of the women is described in table no.2.

Table 2: Clinical Presentation

Clinical Presentation	Number	Percentage %(n=12)
Abdominal pain and tenderness	8	66.66
Cessation of uterine contraction	6	50
Vaginal bleeding	10	83.33
Pallor	9	75
Palpable fetal part	10	83.33
Hypotension	8	66.66

Tachycardia	10	83.33
Shock	2	16.66
Traditional birth attendant handling	8	66.66

The major risk factors for uterine rupture is discussed in table no.3, those with one previous caesarean section were 8(66.7%) whereas previous two caesarean section were 2(16.7%). Unscarred uterine rupture were 2(16.6%), out of which one had obstructed labour while the other had malpresentation.

Table 3: Risk factor for uterine rupture

Risk factor	Number	Percentage %
Previous one caesarean section	8	66.7
Previous two caesarean section	2	16.7
Unscarred uterus rupture	2	16.6
Obstructed labor	1	8.3
Malpresentation	1	8.3

Intraoperatively, it was noted 7 (58.3%), out of 12 had lower segment rupture in the scarred as well as unscarred uterus. One presented with upper segment rupture which may be due to inverted T or J inscion given in the previous caesarean section. There was left lateral wall rupture in one while one had posterior wall rupture. Combined type of rupture was seen in one of the woman. (Table 4)

Table 4: Site and Type of rupture seen intraoperatively

Site and type of rupture	Scarred n=10	Unscarred n= 2	Total n=12	
			No.	%
Lower segment	6	1	7	58.33
Upper segment	1	0	1	8.33
Inverted T shaped	1	0	1	8.33
Left lateral	1	0	1	8.33
Right lateral	0	0	0	0
Posterior wall	0	1	1	8.33
Combined	1	0	1	8.33

Table no. 5 shows the surgical management done .25% underwent scar repair with tubal ligation while 50% had scar repair without tubal ligation. One woman had ruptured urinary bladder also and thus repair was done along with scar. One woman (8.3%) had subtotal hysterectomy and one (8.3%) subtotal hysterectomy with bladder repair. There was total abdominal hysterectomy in one patient. Subtotal hysterectomy is considered as procedure of choice if lower uterine tract is not involved as it saves time and thus the blood loss.

Five patients were shifted to ICU and there was one mortality in our study which was due to massive blood loss and morbid presentation of the patient at the time of admission.

Table 5: Surgical management

Procedure	Scarred n=10	Unscarred n=2	Total	
			N= 12	%
Scar repair With tubal ligation	2	1	3	25
Without tubal ligation	6	0	6	50
With urinary bladder repair	1	0	1	8.33
Subtotal hysterectomy	1	0	1	8.33
Subtotal hysterectomy with bladder repair	1	0	1	8.33
Total abdominal hysterectomy	0	1	1	8.33

Discussion

Rupture of the gravid uterus is an unexpected, rare, and potentially life-threatening devastating complication. It still constitutes one of the most serious obstetrical emergencies [13]. Despite the advances of modern medicine, it continues to cause adverse fetal and maternal health consequences. The rupture uterus occurred more commonly in the age group between 20 and 30 years (66.66%) whereas in women of age more than 30 years there were 4 cases (33.33%) in our study. The age and parity distribution of patients with ruptured uterus in current study were similar to findings from other studies [14-17]. The maximum cases of rupture uterus occurred with Inter delivery interval of 18 to 36 months. A prolonged inter pregnancy interval may allow time for the previous cesarean delivery scar to reach its maximal tensile strength before the scar undergoes the mechanical stress and strain with a subsequent intrauterine pregnancy. Our study not only confirmed several important independent risk factors for uterine rupture, including previous cesarean section, multiparity, malpresentations, and labor dystocia; but also demonstrated that four major risk factors (history of prior uterine surgery, grand multiparity, obstructed labor, and fetal malpresentations) contributed to more than 90% cases of uterine rupture. The single risk factor (history of prior cesarean section) contributed to 66.7% cases of uterine rupture. Therefore, a great degree of caution should be taken while managing patients with previous uterine scar who are attempting trial of labor. Repeat cesarean delivery should be strongly considered in women with previous scarred uterus. In study conducted by Ibha K, Poonam G, Sehgal A *et al.* 49.1% uterine rupture occurred at the previous lower segment cesarean section (LSCS) scar and our observation is similar to that of others [18-19]. Hamilton *et al*., reported that with labor dystocia (i.e., cervical dilatation lower than the 10th percentile and arrest for more than 2h), cesarean delivery prevents more than 42.1% cases of uterine rupture [20].

Among the women in our study, the lack of any antenatal care is strikingly frequent-75%. However, this lack of antenatal care probably reflects the lack of access to obstetric care in general. It is the lack of access to emergency obstetric care, in particular emergency cesarean section and blood transfusion that is the problem in many developing countries.

In Ezechi *et al.* series [21] 50.8% were grand multipara and in Ibha *et al*. [19] series 32% were grand multipara. In our study, 75% were second gravida, this is contrary to the above mentioned studies. The risk of uterine rupture differs significantly depending on the type of the prior incision (low transverse, low vertical, classical, or unknown). The risk of rupture with a T-shaped or classical incision is much higher, and ranges from 4 to 9% [22]. In our study, 75% cases of rupture uterus were treated by suturing the tear similar to in studies of Revicky *et al.* [23]. Our case reports only 2 live births which required admission as they had rupture while in the hospital hence promptly treated, rest were dead.

Once the rupture uterus is diagnosed, prompt management is the essence. Our study reports one (8.3%) mortality while five of them required ICU management. All of them required blood transfusion. However there are other studies reporting maternal mortality rates ranging from 0 to 13% [24, 25]. The average duration of hospital stay was 10+2 days with 6 requiring catheterisation up to 14 days while 2 women in whom there was bladder rupture were catheterized for 21 days. This study confirms that institutional delay in the provision of treatment still contributes to morbidity and mortality. Reasons for these

delays include inadequate surgical facilities, unavailable blood supplies and financial reasons which were also reported with different studies [26, 27].

Conclusion

Prompt action and team work are the key to avoid major catastrophe. At the ground root level, patients must be encouraged to have proper antenatal checkup and adequate counseling for institutional deliveries. Also transportation facilities must be ensured for the timely management. Centres lacking Operative facilities or blood bank must immediately refer the patient once a diagnosis is established to cut short the travelling time and thus prevent the patient from deterioration.

Acknowledgement: None

References

1. Ekta S, Chawre *et al*. Uterine rupture: A Retrospective analysis. International journal of biomedical and advance research. 2019; 10(4):e51-55.
2. Prajapati SS *et al*. Rupture uterus; A Retrospective analytical study. International Journal of Reproduction, Contraception, obstetrics and gynecology. 2018; 7(3):845-847.
3. Ezzat L *et al*. Reproductive study of cases of rupture uterus at tertiary care center in Egypt. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2018; 7(8)2993-2997.
4. Astatikie *et al*. Maternal and fetal outcomes of uterine rupture and factors associated with Maternal Death secondary to uterine rupture. BMC pregnancy and Child Birth. 2017; 17:117.
5. Singh M *et al*. Maternal and perinatal outcomes of rupture uterus at rural tertiary care institution; A Retrospective study. International Journal of Reproduction, Contraception, Obstetrics and gynecology. 2016; 5(7):2233-2238.
6. Guguloth Karuna *et al*. A Retrospective study of maternal and perinatal outcome in obstetrics emergencies at Government General Hospital Guntur. IOSR Journal of Dental and medical Sciences. 2016; 15(12):26-31.
7. Dwivedi S *et al*. Uterine rupture a retrospective analysis of referral cases at a tertiary care centre Kanpur city. International journal of Reproduction, Contraception, Obstetrics and Gynecolog. 2015; 4(4):1148-1152.
8. Amrita P *et al*. Study of Prevalence and Outcomes of Rupture Uterus in-A Tertiary Care centre of Muzaffarpur, Bihar: a three year Retrospective Study. Journal of Medical science And Research. 2019; 7(2):634-639.
9. Dr. Omololu Adegbola *et al*. Uterine Rupture at Lagos University Teaching Hospital. Journal of Clinical sciences. 2019; 157:13-23.
10. Habtamu *et al*. Maternal and Perinatal outcomes of uterine rupture patients among mothers who delivered at mijan amen general hospital, SNNPR, south west Ethiopia; a five year retrospective hospital based study. MOJ Women Health 2016; 2(1):13-23.
11. Naushaba Rizwan *et al*. Uterine rupture, frequency of cases and fetomaternal outcome. JPMA. 201; 61:322-324.
12. Partha Saradhi Reddy G *et al*. A Study of Rupture Uterus Maternal and Foetal Outcome. ISOR Journal of Dental and Medical sciences. 2016; 15(6):26-29.
13. Eden RD, Parker RT, Gall SA. Rupture of the pregnant uterus: A 53-year review. Obstet Gynecol. 1986; 68:671-4.
14. Igwegbe AO, Eleje GU, Udegbunam OI. Risk factors and perinatal outcome of uterine rupture in a low resource setting. Niger Med J. 2013; 54(6):415-419.
15. Aziz N, Yousfani S. Analysis of uterine rupture at university teaching hospital Pakistan. Pak J Med Sci. 2015; 31(4):920-924.
16. Mbamara SU, Obiechina N, Eleje GU. An analysis of uterine rupture at the Nnamdi Azikiwe University Teaching Hospital Nnewi, Southeast Nigeria. Niger J Clin Pract. 2012; 15(4):448-452.
17. Sahu M, K NH, Mandpe P. Case analysis of complete uterine rupture in a tertiary health care center. Int. J Reprod Contracept Obstet Gynecol. 2016; 5(12):4401-4404.
18. Ofir K, Sheiner E, Levy A. Uterine rupture: Risk factors and pregnancy outcome, Am J Obstet Gynecol. 2003; 189:1042-6.
19. Ibha K, Poonam G, Sehgal A. Rupture of the gravid uterus: Experience at an urban medical center in Northern India. J Obstet Gynecol India. 2003; 53:558-62.
20. Hamilton EF, Bujold E, McNamara H, Gauthier R, Platt RW. Dystocia among women with symptomatic uterine rupture. Am J Obstet Gynecol. 2001; 184:620-4.
21. Ezechi OC, Mabayoje P, Obiesie LO. Rupture uterus in South Western Nigeria: a reappraisal. Singapore Med J 2004; 45:113-6.
22. American College of Obstetricians and Gynecologists. ACOG Practice bulletin no. 115: Vaginal birth after previous cesarean delivery. Obstet Gynecol. 2010; 116:450-63.
23. Revicky V, Muralidhar A, Mukhopadhyay S, Mahmood T. A Case Series of Uterine Rupture: Lessons to be learned for Future Clinical Practice. J Obs Gynaecol of India. 2012; 62(6):665-673.
24. Aboyeji AP, Ijaiya MD, Yahaya UR. Ruptured uterus: A study of 100 consecutive cases in Ilorin, Nigeria. J Obstet Gynaecol Res. 2001; 27:341-8.
25. Van Der Merwe JV, Ombelet WU. Rupture of the uterus: A changing picture. Arch Gynecol. 1987; 240:159-71.
26. Ekele BA, Audu LR, Muyibi S. Uterine Rupture in Sokoto, Northern Nigeria-Are We Winning? Afr J Med Sci. 2000; 29:191-193.
27. Aboyeji AP. Ruptured uterus in Ilorin, Nigeria. A five year review. Nigerian Medical Practitioner. 1997; 33:5-8.