

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20180452>

Original Research Article

Rupture uterus: a retrospective analytical study

Shetal S. Prajapati, Kamal D. Goswami, Kavita M. Dudharejia,
Avani N. Kannar, Prakash H. Parmar*

Department of Obstetrics and Gynecology, PDU Medical College, Rajkot, Gujarat, India

Received: 02 January 2018

Accepted: 01 February 2018

***Correspondence:**

Dr. Prakash H. Parmar,

E-mail: drparmarobgy@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Over 500,000 women die each year due to complications of pregnancy and childbirth, a number that has remained relatively unchanged since 1990, when the first global estimates of the burden of maternal mortality were developed (WHO 2005). Objective of present study was to find out risk factors, management, related complications and associated maternal morbidity and mortality with rupture uterus.

Methods: A retrospective analytical study was performed at Department of Obstetrics and Gynecology, PDU Medical College, Rajkot, Gujarat, India over a period of 3 years during 2014-2016. Evaluation of maternal age, parity, SE status, booking status, obstetric risk factors, duration of hospital stay, causes of rupture uterus, Management, intra-op and post-operative complications, maternal morbidity and mortality was done.

Results: Total 29 cases of rupture uterus were found during study period. Most of them belong to age group of 21-30 (77.17%), Primipara (41.3%), Lower socioeconomic status (86.2%) and unbooked (65.52%) cases. Most common cause of rupture uterus was prolonged obstructed labor (51.72%) while scarred uterus (41.73%), transverse lie (3.44%) and injudicious use of oxytocin (3.44%) were others. In 16 cases obstetric Hysterectomy (55.17%) was performed while in 13 cases repair (44.82%) was done. We have found 2 cases of maternal death (6.89%) while study period with rupture uterus.

Conclusions: Present retrospective analytical study has concluded that rupture uterus is a life threatening complication. Proper antenatal and intrapartum care, identification of high risk factors, promotion of skilled attendance at birth and institutional delivery are key factors in reduction and early diagnosis.

Keywords: Hysterectomy, Maternal morbidity and mortality, Obstructed labor, Rupture uterus

INTRODUCTION

Over 500,000 women die each year due to complications of pregnancy and childbirth, a number that has remained relatively unchanged since 1990, when the first global estimates of the burden of maternal mortality were developed (WHO 2005).¹

Uterine rupture is a catastrophic obstetric complication associated with high rates of fetal and maternal morbidity and mortality.² In India, it is responsible for 5%-10%

cases of all maternal deaths even now.³ Rupture Uterus can occur at any stage of gestation. Rate of rupture uterus is low in developed countries but while in developing countries like India it's a still one of the leading cause of maternal mortality. Uterine rupture is defined as a full-thickness separation of the uterine wall and the overlying serosa.⁴

Unscarred uterus is the least susceptible to rupture. Grand multiparity, neglected labor, malpresentation, breech extraction, and uterine instrumentation are all

predisposing factors for uterine rupture.⁵ Consequences of uterine rupture depend on the time between diagnosis of uterine rupture and delivery and can be divided to fetal and maternal. Fetal consequences are admission to neonatal intensive care unit, fetal hypoxia or anoxia, and neonatal death. Maternal consequences are hemorrhage, hypovolemic shock, bladder injury, need for hysterectomy, and a maternal death. On the other hand, morbidity and mortality following rupture of the uterus depend on the level of medical care.⁶

The present study was undertaken to evaluate the predisposing factors, clinical presentation, management, maternal outcome of rupture uterus at our hospital.

METHODS

A Retrospective Analytical Study was performed at Department of Obstetrics and Gynecology, PDU Medical College, Rajkot, India over a period of 3 years during Jan 2014 to Dec 2016. All patients with rupture uterus during study period time were included.

Detailed analysis was done of each case. Evaluation of Maternal age, Parity, SE status, booking status, obstetric risk factors, duration of hospital stay, Presentation, Management, intra-op and post-operative Findings, complications, maternal morbidity and mortality was done.

This is a retrospective analytical study that included data collection only. It does not pose any risk to the patients and does not pass any cost to the institute.

RESULTS

During the study period, 22527 deliveries were noted, of which patients who had rupture uterus was 29. Of the 29 patients, the common age group was 21-30 years (77.17%) while ≤ 20 yrs-20.6% and >30 was 13.9%. Most of the patients were primigravida (41.3%) while multiparous and grand multipara were found 34.57% and 24.13% respectively. Most of the patients belong to lower socioeconomical group 25 cases (86.2%). There were 10(34.48%) booked cases while 19 (65.52%) unbooked cases.

On evaluation of predisposing Factors, we have evaluated that prolonged obstructed labor was the main cause of rupture uterus (15 cases-51.72%). Mismanaged second stage of labor was a one of the major contributory factor to it.

Rupture in scarred uterus was found in 12 cases – 41.37%. Amongst scarred uterus, only one patient was having previous myomectomy scar (3.44%) others were cases of Previous caesarean section (37.94%). Amongst Previous caesarean cases, 2 were having Previous 2 caesarean sections (6.89%) while 9 were having Previous One caesarean section (31.03%).

Out of 29 cases, in one case rupture was found with transverse lie (3.44%) while in one case injudicious use of oxytocin was found (3.44%). Out of 29 cases of rupture uterus, 16 had undergone obstetric Hysterectomy (55.17%) while in 13 cases repair was done (44.82%). Most common site of rupture was lateral wall of uterus while in cases with scarred uterus lower segment scar rupture was the site of rupture.

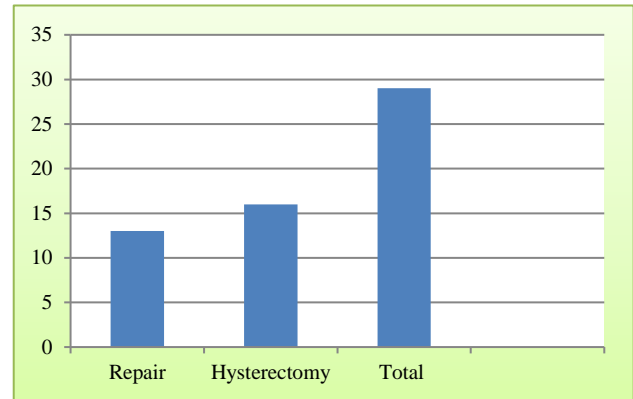


Table 1: Ruptures uterus.

10 cases were diagnosed as a rupture uterus at the time of admission in our institute (34.48%) while in rest 19 cases rupture was developed in institute (65.52%). Average Duration of hospital stay was 13 days. All women required blood transfusion.

Associated Bladder injury was found in 2 cases (6.89%) while 8 patients were having wound gap (27.58%). We have found 2 cases of maternal death (6.89%) while study period with rupture uterus.

DISCUSSION

Ruptured uterus still remains one of the serious obstetric complications. Lack of health information, illiteracy, poor antenatal care, poverty, home deliveries by traditional birth attendants and delay in referrals all contribute to uterine rupture.⁷ There are two types of uterine rupture, complete and incomplete, distinguished by whether or not the serous coat of the uterus is involved.⁸ In the former, the uterine content including fetus and, occasionally, placenta may be discharged into the peritoneal cavity; whereas in the latter, the serous coat is intact, and the fetus and the placenta are inside the uterine cavity.⁹

The complete variety is more dangerous of the two varieties.^{10,11} Rupture of uterus during labor is more threatening than that occurring in pregnancy, because shock is greater, and infection cannot be avoided.^{12,13} The damage to the uterus is sometimes beyond repair, and a hysterectomy is required. Uterine rupture is called as a disarray of the uterine muscle continuing to and including the uterine serosa or disarray of the uterine muscle with extension to the bladder or broad ligament. Uterine

dehiscence is defined as disruption of the uterine muscle with intact uterine serosa.¹⁴

In present study we noted that prolonged obstructed labor as a main cause of rupture uterus (15 cases-51.72%) while rupture in scarred uterus was found in 12 cases-41.37% which is comparable to Kidantou HL et al 38% and 33.6% respectively.¹⁵ Appropriate use of the partograph is an important tool for audit and monitoring progress of labour and a warning device to detect deviations from normal labour, preventing obstructed labour and thereby improving maternal and fetal outcome.¹⁶⁻¹⁸

The surgical management depended on general condition of the patients, parity, and desire for future fertility, type of rupture and site of rupture. The surgical management have options of either repair of uterus or hysterectomy. Out of 29 cases of rupture uterus 16 had undergone obstetric Hysterectomy (55.17%) while in 13 cases repair was done (44.82%) while in study by Ozdemir I et al found hysterectomy and repair in 70.6% and 29.4% respectively.¹⁹

CONCLUSION

In present retrospective analytical study, we have concluded that most common cause of rupture uterus was neglected prolonged second stage of labor followed by scarred uterus. Hence, we have recommended institutional labor for high risk cases with proper management of labor by experience staff with use of partograph.

Proper antenatal and intrapartum care, identification of high risk factors, reduction in primary caesarean section rates, Promotion of skilled attendance at birth, implications of BEmoc facilities, health education and awareness are key factors in reduction and early diagnosis.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- Jennifer B, Ndola P, Jill D, Martine H. proposal for the inclusion of misoprostol in the WHO model list of essential medicines; 17th Expert Committee on the Selection and Use of Essential Medicines Geneva. 2009;3-5.
- Walsh CA, Baxi LV. Rupture of the primigravid uterus: A review of literature. *Obstet Gynaecol Surv.* 2007;62:327-34.
- Bhaskar Rao K. Obstructed labor. In: *Obstetrics and Gynecology for Postgraduates, Vol 1. 1st edn, Ratnam SS, Bhasker Rao K, Arulkumaran S (Eds.). Madras: Orient Longman;1992:130-2.*
- Ofir K, Sheiner E, Levy A, Katz M, Mazor M. Uterine rupture: risk factors and pregnancy outcome. *Am J Obstet Gynecol.* 2003 Oct;189(4):1042-6.
- Gardeil F, Daly S, Turner MJ. Uterine rupture in pregnancy reviewed. *Eur J Obstet Gynecol Reprod Biol.* 1994;56:107-10.
- Smith GC, Pell JP, Pasupathy D, et al. Factors predisposing to perinatal death related to uterine rupture during attempted vaginal birth after caesarean section: retrospective cohort study. *BMJ.* 2004;329:375.
- Malik HS. Frequency, predisposing factors and fetomaternal outcome in uterine rupture. *J Coll Physicians Surg Pak.* 2006;16:472-5.
- Rana S. Obstetrics trauma. In: *Obstetrics and Perinatal Care for Developing Countries, 1st edn. Pakistan: SAF Publications;1998:1308-15.*
- Donald I. Maternal injuries. In: *Practical Obstetrics Problems, 5th edn. Hong Kong: PG Publishing (Pvt.) Ltd;1983:795-803.*
- Ames RPM. Rupture of uterus. *Am J Obstet Gynecol.* 1981;14:361-95.
- Miller DA, Diaz FG, Paul RH. Rupture of unscarred uterus. *Am J Obstet Gynecol.* 1996;174:345.
- Miller DA, Goodwin TM, Gherman RB, Paul RH. Intrapartum rupture of the unscarred uterus. *Obstet Gynecol.* 1997 May;89(5):671-3.
- Fedorkow DM, Nimrod CA, Taylor PJ. Rupture uterus in pregnancy: a Canadian hospital's experience. *CMAJ.* 1987;137(1):27-9.
- Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. *N Engl J Med.* 2004;351(25):2581-9.
- Kidantou HL, Mwampagatwa I, Van Roosmalen J. Uterine rupture: a retrospective analysis of causes, complications and management outcomes at Muhimbili National Hospital in Dares Salaam, Tanzania. *Tanzan J Health Res.* 2012 Jul;14(3):220-5.
- Lavender T, Hart A, Smyth RM. Effect of partograph use on outcomes of women in spontaneous labour at term. *Cochrane Database Syst Rev* 2008;8(4):CD005461.
- Lavender T, Lugina H, Smith H. The partograph: a life saving tool for African midwives. *Trop Doct.* 2007;37(3):191-2.
- Mathews M: The partograph for prevention of obstructed labour. *Clin Obstet Gynaecol.* 2009;52(2):256-69.
- Ozdemir I, Yucel N, Yucel O. Rupture of the pregnant uterus: a 9-year review. *Arch Gynecol Obstet.* 2005 Sep;272(3):229-31.

Cite this article as: Prajapati SS, Goswami KD, Dudharejia KM, Kannar AN, Parmar PH. Fetal Rupture uterus: a retrospective analytical study. *Int J Reprod Contracept Obstet Gynecol* 2018;7:845-7.