

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20151302>

Research Article

Unscarred uterine rupture: a retrospective study

Preety Aggarwal^{1*}, Nounenuo Terhase²

¹Department of Obstetrics and Gynaecology, Maharaja Agrasen Medical College, Agroha, Hisar, Haryana, India

²PHC, Mokukchung, Nagaland, India

Received: 03 October 2015

Revised: 07 October 2015

Accepted: 24 November 2015

*Correspondence:

Dr. Preety Aggarwal,

E-mail: ardentpreety@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: Uterine rupture is a catastrophic obstetrical emergency associated with significant fetomaternal morbidity and mortality. Many risk factors have been identified, as well as wide range of clinical presentations. The objective of the study was to analyse the incidence and predisposing factors of unscarred uterine rupture and to determine maternal and fetal outcome.

Methods: Retrospective analysis of unscarred uterine rupture cases was conducted at the Department of Obstetrics and Gynecology, RIMS, Imphal from June 2012 to June 2014.

Results: Our case series comprised of 13 cases with unscarred uterine rupture incidence of 0.057%. Out of these, 69.2% were unbooked cases. Majority of the cases were para 2-3. Most of the rupture (76.9%) occurred during 2nd stage of labour. The lower segment uterine rupture was the most common site of rupture (30.8%) Maternal and perinatal mortality were 30.8% and 53.8%, respectively. Sub-total hysterectomy done in 87.5% cases.

Conclusions: Rupture uterus is a high risk category of patients. An unscarred uterus can undergo rupture even without risk factors. The patients with mismanaged labour, grand multiparas and obstructed prolonged labour must be managed by proper trained personnel and in tertiary care centre in order to avoid the morbidity or mortality.

Keywords: Uterine rupture, Mortality, Hysterectomy

INTRODUCTION

Uterine rupture in pregnancy is a catastrophic complication associated with a high incidence of fetal and maternal morbidity.¹

Uterine rupture is a serious happening in a woman's life. It may not only endanger her life but may even affect her future fertility status as well.²

The key factor in the cause of rupture is whether uterus is scarred or not. The normal, unscarred uterus is least susceptible to rupture. Spontaneous rupture of an unscarred uterus during pregnancy is a rare occurrence, usually traumatic, and its incidence decreases with improvement in obstetric practice. However, its incidence remains high in developing countries.³

The most common risk factor for the uterine rupture is previous uterine surgery.⁴ Other major factors are obstructed labor, multiparity, use of uterotonic drugs, placenta percreta and rarely intrauterine manipulations such as internal podalic version and breech extraction.⁵ Most cases present with maternal tachycardia, signs of fetal distress, and bleeding per vagina.⁶

Several factors are known to increase the risk of uterine rupture, these include poor socioeconomic conditions, uncontrolled fertility, illiteracy, adolescent marriages and under developed and contracted pelvis.¹

Spontaneous uterine rupture is associated with highly variable and nonspecific maternal complaints and fetal status, requiring a high index of diagnostic suspicion.⁷

Maternal and perinatal outcomes are optimized by awareness of risk factors, recognition of clinical signs and symptoms, and prompt surgical intervention.⁸

Aims and objectives

The aims and objectives of the study were to analyse the incidence and predisposing factors of unscarred uterine rupture and to determine maternal and fetal outcome.

METHODS

Retrospective analysis of unscarred uterine rupture cases was conducted at the Department of Obstetrics and Gynecology, Regional Institute of Medical Sciences, Imphal. The case series analysis was done during the period June 2012 to June 2014. All the cases of uterine rupture without any previous scar or any other previous uterine operation were included. The age, parity, risk factors, causes of rupture, feto-maternal outcome were analyzed using descriptive statistics like mean, standard deviation and percentages. The data was analyzed using SPSS 16.

RESULTS

Our case series comprised of 13 unscarred uterine rupture cases. The total number deliveries during the study period were 22950 giving the unscarred uterine rupture incidence of 0.057%. The mean age of the studied sample was 32.31 years with a SD of 4.151 and an age range of 27-39 years. In our review, 9 (69.2%) cases were unbooked, most of them referred from peripheral health centers and 4 (30.8%) were booked cases (Table 1).

Mostly the patients were brought in collapsed and in shocked state on arrival at hospital. Term pregnancy was attained in 10 cases (76.9%) whereas 3 cases (23.1%) were preterm pregnancy. In our analysis, 8 cases were handled at hospital and 5 cases at home during the time of labor and the maximum duration of labor was around 20 hour seen in 1 case. Majority of cases were in second stage of labor (76.9%). In our series, most of the cases 6 (46.2%) were diagnosed and taken for laparotomy within 2 hours. Majority of the rupture were seen among Para 2 (46.2%), followed by Para 1 (30.8%), Para 5 (15.4%) and Para 3 (7.7%), respectively. The causes of uterine rupture was mismanaged labour, use of oxytocics, instrumental delivery, obstructed labour, use of prostaglandins etc (Table 2).

Most common presentation was shock followed by severe abdominal pain (Table 3).

The site of rupture involved is shown in the following figure (Figure 1). Most common is lateral lower segment (30.8%) followed by lateral upper segment and fundal.

There were 4 maternal deaths giving the maternal mortality as 30.8% in which 1 patient died within 30

minutes after laparotomy. The perinatal mortality was 53.8% attributable to uterine rupture. There were 4 cases in whom ICU admission was required and maximum stay in the ICU was 8 days. Sub-total hysterectomy was performed in 8 (66.7%) cases. In 1 patient, laparotomy and repair with tubal ligation was performed. The maximum hospital stay of the patients was found to be 8-10 days.

Table 1: Distribution of referred cases (n=13).

Referred Cases	Number	Percentage
No	7	53.8
Yes	6	46.2

Table 2: Causes of unscarred uterine rupture (n=13).

Causes	No. of Cases	Percentage
Mismanaged labor	4	30.8
Use of oxytocic's	3	23.1
Instrumental delivery	2	15.4
Obstructed labor	2	15.4
prostaglandin gel induction	1	7.7
Placenta percreta	1	7.7

Table 3: Signs and symptoms presented (n=13).

Signs	No. of cases	Percentage
Absent fetal heart rate	7	53.84
Loss of uterine contractility	6	46.15
Abdominal pain	8	61.53
Vaginal bleeding	6	46.15
Shock	9	69.23

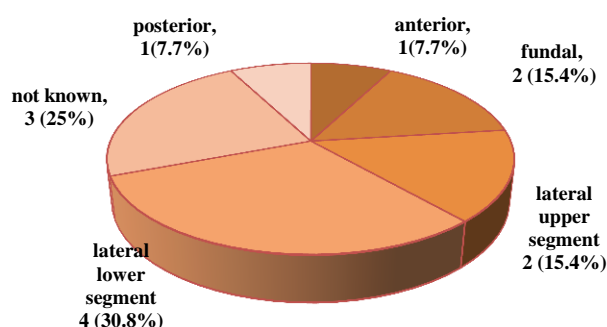


Figure 1: Site of rupture.

DISCUSSION

Uterine rupture during pregnancy is a rare occurrence that frequently results in life threatening maternal and fetal compromise. The incidence is reported as 0.012%.⁹

With ready access to obstetric care including caesarean section for obstructed labor, rupture of the unscarred uterus should be rare.⁵ If a gravid woman presents with

hypotension, abdominal pain and fetal distress and vaginal bleeding, rupture uterus should be considered.⁶

The frequency of uterine rupture in the present study was 0.057% in comparison to a study done by Ahmadi Set al¹⁰, who had a figure of 0.038%. Most of the women in this study were between the age group 27-39 years.

Majority of patients (69.2%) were unbooked, compared to a study done by Rashmi et al¹² figured as 80%. Majority of the rupture occurred in Para.² This was similar to the study done by Rizwan N et al.¹

Most of the rupture occurred in second stage of labor (76.9%) and 23.1% occurred before labor which was similar in frequency reported by Nahum G9 (86% and 14%, respectively).

The lower segment uterine rupture was the most common site of rupture in this study (30.8%) which was in contrast with the study done by Rizwan n et al¹ (80%).

Mismanaged labor, use of oxytocics, obstructed labor, instrumental delivery, prostaglandin gel induction and placenta percreta were found to be the most common risk factors which was similar to the findings of Miller DA et al.⁸

The increased risk of uterine rupture attributable to the use of oxytocin in multigravida with unscarred uteri is uncertain which was proposed by Nahum G.⁹ In our review, rupture following use of oxytocin was found among 3 cases (23.1%).

Maternal mortality was 30.8%. This was comparable with the study by Ahmadi et al¹⁰ in which it was 7.1%. Maternal death was seen within 30 minutes after laparotomy in 1 case which was similar to a case report of Dane B et al¹¹ in 2009. In this study perinatal mortality was 53.8% which was similar to the observation of Rashmi et al (78.66%).¹²

Sub-total hysterectomy was performed in 87.5% which was compared with the study done by Ahmadi S et al (32.1%).¹⁰ In our study, repair of the rupture uterine site was performed in 1 patient.

CONCLUSION

Unscarred uterine rupture is a relatively rare complication of the pregnancy. However, its incidence remains high in developing countries. Its occurrence is significantly associated with grand multiparity, advanced maternal

age, lack of antenatal care and prolonged neglected obstructed labor. The patients with mismanaged labor, grand multiparas and obstructed prolonged labor must be managed by proper trained personnel and in tertiary care center in order to avoid the morbidity or mortality.

Funding: No funding sources

Conflict of interest: None declared

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

REFERENCES

1. Rizwan N, Abbasi RM. Uterine rupture, frequency of cases and fetomaternal outcome. JPMA. 2011;61:322.
2. Akhtar Y. Ruptured uterus; an on-going tragedy of motherhood. Professional Med J. 2010; 17(2): 314-7.
3. Turner MJ. Uterine rupture. Best Pract Res Clin Obstet Gynaecol. 2012;16(1):69-79.
4. Walsh CA, Baxi LV. Rupture of the primigravid uterus: a review of the literature. Obstet Gynaecol Surv. 2007;62(5):327-34.
5. WHO systematic review of maternal mortality and morbidity: the prevalence of uterine rupture. BJOG. 2005;112:1221-8.
6. Mazzone ME, Woolever J. Uterine rupture in a patient with an unscarred uterus: a case study. WMJ. 2006;105(2):64-6.
7. Dow M, Wax JR, Pinette MG, Blackstone J, Cartin A. Am J perinatal. 2009;26(10):739-44.
8. Miller DA, Goodwin TM, Gherman RB, Paul RH. Intrapartum rupture of the unscarred uterus. 1997;89(5):671-3.
9. Nahum G. Uterine rupture in pregnancy. Medline. 2010;10.
10. Ahmadi S, Nour M, Bibi M. Uterine rupture of the unscarred uterus. About 28 cases. Gynecol Obstet Fertil. 2003;31(9):713-7.
11. Dane B, Dane C. Maternal death after uterine rupture in an unscarred uterus: a case report. J Emerg Med. 2009;37(4):393-5.
12. Rashmi, Radhakrishnan G, Vaid NB, Agarwal N. Rupture uterus- changing Indian scenario. J Indian Med Assoc. 2001;99(11):634-7.
13. Aboyeji AP, Ijaiya MD, yahaya UR. Ruptured uterus: a study of 100 consecutive cases in Ilorin, Nigeria. J Obstet Gynaecol Res. 2001;27(6):341-8.

Cite this article as: Aggarwal P, Terhase N. Unscarred uterine rupture: a retrospective study. Int J Reprod Contracept Obstet Gynecol 2015;4:1997-9.