



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3726438>Available online at: <http://www.iajps.com>

Research Article

**CLINICAL PRESENTATION, PREDISPOSING FACTORS,
MANAGEMENT MODALITIES AND FETO-MATERNAL
OUTCOMES AMONG PATIENTS WITH UTERINE
RUPTURE**¹Dr Ahmad ur Rehman, ²Dr Abdul Basit, ³Dr Muhammad Usman Iqbal¹Mayo Hospital Lahore²Mayo Hospital Lahore³Holy Family Hospital Rawalpindi

Article Received: January 2020 Accepted: February 2020 Published: March 2020

Abstract:

Objective: This research work aimed to find out the prompting factors, various modes of presentation, modalities of management and feto-maternal outcomes in the patients with uterine rupture.

Methodology: In this research work, we carried out the retrospective analysis of sixty one gravid patients of uterine rupture from 2010 to 2019. SPSS V. 23 was in use for statistical analysis of collected information. Ethical committee of the institute gave the permission to conduct this research work. There was no need to take consent of the patients because it was a retrospective research work.

Results: The rate of prevalence of ruptured uteri measured as 0.1160%. Insistence for delivery through vagina after the CS (Cesarean Section) was the most common reason of the rupture of uterine among patients (31.10%). Most common coexistent pathology of obstetrics was ablatio placenta present in 4.90% patients. The most common symptom at the time of presentation was bleeding (44.30%). Most susceptible uterus part for rupture was the isthmus in 39.30% patients. There was very long duration of stay in the hospital, if there was long interval between surgical intervention and the incidence of rupture. The patients of older ages with high amount of previous pregnancies were present with long periods of stay in hospitals.

Conclusion: Hazardous risks are the outcomes of the gravid uterus's rupture. Deliveries in the hospitals, thorough vigilance during labor and regular antenatal care with timely referral to the well-equipped health care center may decrease the prevalence rate of this very complication.

Key Words: CS, uterine, rupture, complication, ethical, delivery, pregnancy, gravid, hazardous.

Corresponding author:

Dr. Ahmad ur Rehman,
Mayo Hospital Lahore

QR code



Please cite this article in press Ahmad ur Rehman et al., *Clinical Presentation, Predisposing Factors, Management Modalities And Feto-Maternal Outcomes Among Patients With Uterine Rupture*, Indo Am. J. P. Sci, 2020; 07(03).

INTRODUCTION:

UR is very severe and life taking complication which can lead to hysterectomy, heavy bleeding, shock as well as high rate of fetomaternal morbidity and mortality. Better antenatal care and labor management with advanced technologies can support in the reduction of the prevalence of the uterine rupture. But uterine rupture is still a very frequent occurring and catastrophe of severe nature among the patients of the countries which are under development [1-3]. Immediate abnormalities like rupture of uterine bladder, anemia or serious shock and complication for long term as foot drop, complete infertility or vesico-vaginal fistula may be the outcome because of uterine rupture [4, 5]. Previous CS, uterine abnormalities, tumors, multiparity, utilization of the oxytocin, placenta percreta and fetal abnormalities are the most important risk factors for uterine rupture [4]. There is variation in the incidence rate of uterine rupture between 1 out of 250 and 1 out of 5000 deliveries [3, 6].

Underlying factors for uterine rupture may include an adverse system of referrals, non-adherence to antenatal care and delay in obtaining the clinical care [5]. Lower socio-economic status, child births of having more than 3.50 kg weight, positivity of HIV infection and past history of CS are the other main risk factors for uterine rupture. Fetomaternal outcomes of uterine rupture depends upon the availability of the health care facilities in various regions. The main rationale of this research work was to review the reasons and risk factors of uterine rupture and investigate the presentation modes, associated complications, management modalities and fetomaternal outcomes.

METHODOLOGY:

We carried out this retrospective research work on gravid patients of uterine rupture having greater than 20 gestation week from 2010 to 2019 in the Obstetric Department of Jinnah Hospital, Lahore. We obtained the approval of ethical committee for the conduction of this research work. We assessed the patients in terms of their characteristics of demography like parity number, age of patients,

week of gestation, previous obstetric, presentation mode, utilization of uterine stimulant, labor course, rupture site & type, surgical treatment, duration of stay in hospital and fetomaternal outcome. We defined the uterine rupture either as defect of the full-thickness of uterine in addition with acute maternal bleeding that needs the surgical intervention. We termed the patients with incomplete uterine rupture who were present with uterine dehiscence or some other defects of partial nature.

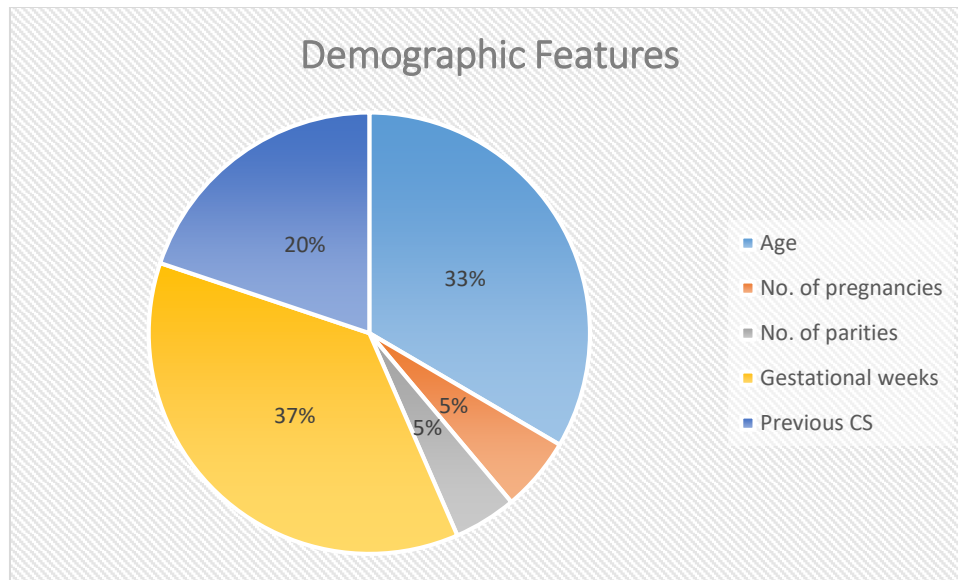
SPSS V.23 was in use for the statistical analysis of the collected information. We applied the parametric tests to the normal distribution data. We used Pearson Chi-square test for the comparison between independent groups. For the calculations of the correlation coefficients, we used the Kendall's tau b method. The expression of the data carried out in averages and standard deviations. P value of less than 0.050 was the significant one.

RESULTS:

A sum of total sixty one patients of uterine rupture comprising 93.40% (n: 57) patients of complete and 6.60% (n: 4) patients of incomplete UR were the participants of this research work in the duration of this research work. In the duration of this research work, there were total sixty thousand deliveries of which sixty one patients found with rupture of uterus with a rate of incidence 0.1160%. Total six patients gave delivery through vagina at their homes but referred to our institute because of heavy bleeding through vagina. Three among them were present with past history of CS. The detection of uterine rupture carried out in these patients in the duration of surgical intervention for intra-abdominal hemorrhage. Maternal characteristics of demography are present in Table-1. The average maternal age was thirty two years with a range from 20 to 45 years and average parity was 4.40 from 0 to 11. There was occurrence of CS in 44.30% (n: 27) patients and 55.70% (n: 34) patients gave birth through vagina.

Table-I: Demographic features of uterine rupture cases.

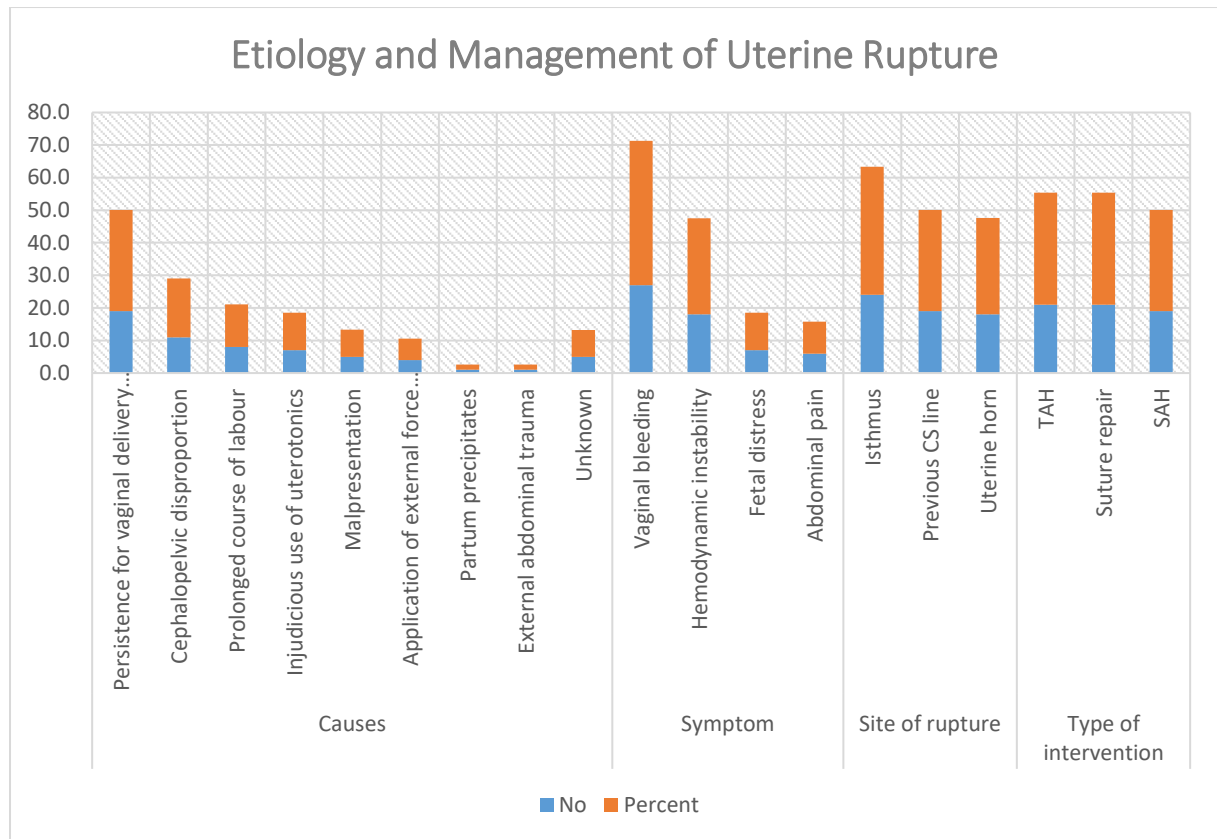
Features	Average	Range
Age	32.00	20 - 45
No. of pregnancies	5.20	1 - 12
No. of parities	4.40	0 - 11
Gestational weeks	35.10	20 - 40
Previous CS	19.00	31.10%



Most frequent obstetric pathologies in addition with uterine rupture, ablatio placenta available in 4.90, placenta Previa in 3.30% & uterine didelphys in 1.60% patients. Duration between onset of uterotonic infusion and pain of labor was 8.440 ± 4.120 hours. Total labor duration in the patients with prolonged labor was 29.150 ± 9.280 hours. Isthmus was the most common ruptured site. Total 31.10% (n: 19) patients were present with past history of cesarean section. We preferred the suture repair in 34.40% patients. We performed the hypogastric artery ligation in 29.50% (n: 18) patients. Details related to the procedures are present in Table-2.

Table-II: Details regarding the etiology and management of uterine rupture.

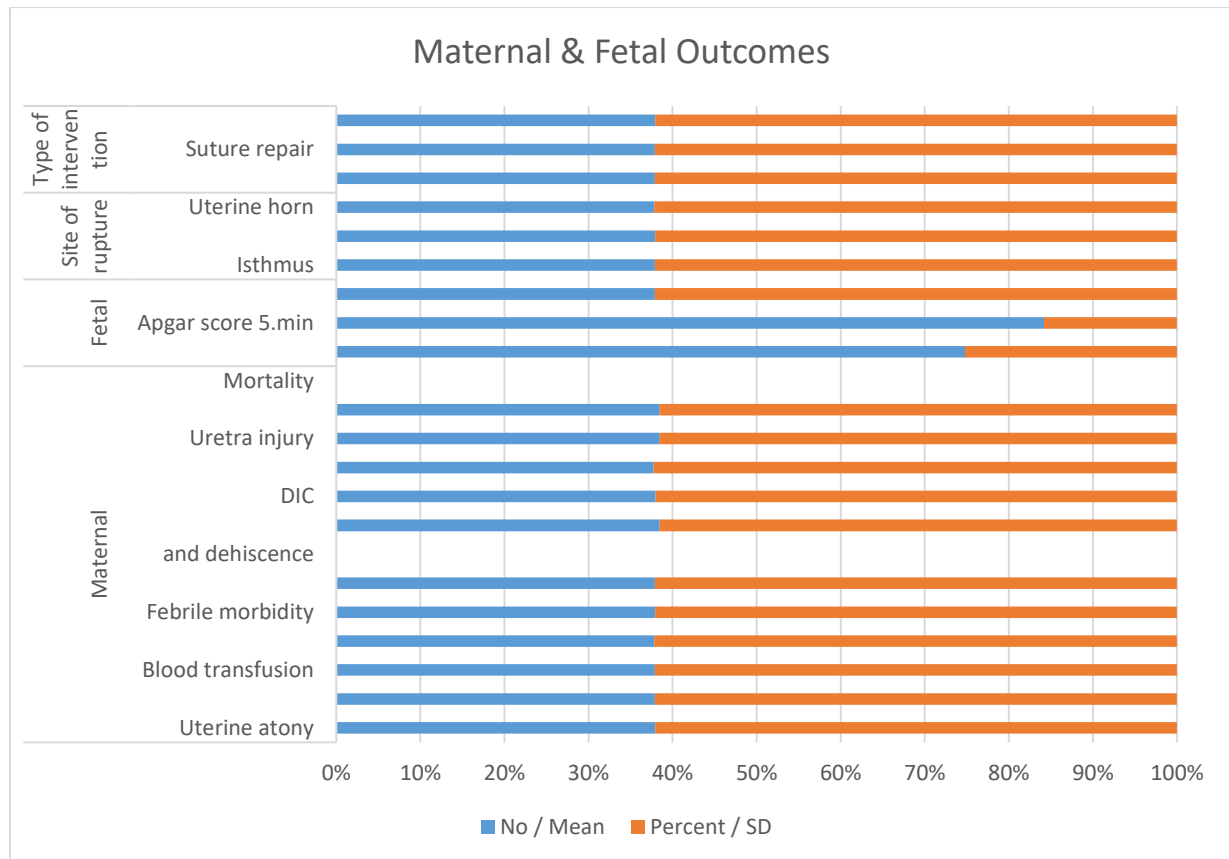
Details		No	Percent
Causes	Persistence for vaginal delivery after CS	19.0	31.10
	Cephalopelvic disproportion	11.0	18.00
	Prolonged course of labour	8.0	13.10
	Injudicious use of uterotonics	7.0	11.50
	Malpresentation	5.0	8.30
	Application of external force (Kristeller	4.0	6.60
	Partum precipitates	1.0	1.60
	External abdominal trauma	1.0	1.60
	Unknown	5.0	8.20
Symptom	Vaginal bleeding	27.0	44.30
	Hemodynamic instability	18.0	29.50
	Fetal distress	7.0	11.50
	Abdominal pain	6.0	9.80
Site of rupture	Isthmus	24.0	39.30
	Previous CS line	19.0	31.10
	Uterine horn	18.0	29.60
Type of intervention	TAH	21.0	34.40
	Suture repair	21.0	34.40
	SAH	19.0	31.10



The average time of surgery was 128.50 minutes with a range from 90 to 180 minutes. Mean hospital stay after surgical intervention was 8.40 days with a range from 4 to 27 days. We detected only 2 fetal abnormalities in this research work. There was need of blood transfusion for every patient. The rate of febrile morbidity was 18.0%. Total 22.90% (n: 14) patients encountered the injuries of urinary system. There was no mortality in this research study. Feto-maternal outcomes are present in Table-3.

Table-III: Maternal and fetal outcomes.

Outcomes		No / Mean	Percent / SD
Maternal	Uterine atony	19	31.1
	Vesicouterine rupture	8	13.1
	Blood transfusion	61	100
	Relaparataromy due to intra-abdominal	7	11.5
	Febrile morbidity	11	18
	Wound infection and dehiscence	5	8.2
	Acute renal failure	2	3.2
	DIC	6	9.8
	Ureter injury	4	6.6
	Urethra injury	1	1.6
	ARDS	1	1.6
	Mortality	0	0
	Fetal	Apgar score 1.min	5.22
Apgar score 5.min		7.56	1.42
Fetal birth weight (g)		2940.86	-
Mortality		25	41
Site of rupture	Isthmus	24	39.3
	Previous CS line	19	31.1
	Uterine horn	18	29.6
Type of intervention	TAH	21	34.4
	Suture repair	21	34.4
	SAH	19	31.1



Association analysis of different variables showed that age and amount of pregnancies were present with correlation with hospital stay after surgical intervention for uterine rupture. Delay between uterine rupture and operational intervention have association with total stay in hospital (Table-4).

Table-IV: Correlation analysis of variables correlated with the duration of hospitalization.

Correlations	r	p Value
Age vs Duration of hospitalization	0.2370	0.0120
Number of previous pregnancies vs Duration of hospitalization	0.0780	0.0190
Surgical delay vs Duration of hospitalization	0.2070	0.0290

DISCUSSION:

Gravid uterus rupture is very serious complication in the period of pregnancy with very high rate of morbidity as well as mortality. But the prevention from this complication is possible in majority of patients but the rate of incidence of fetomaternal morbidity and mortality are still very high [5, 7, 8]. There can be difference in the presentations modes of uterine rupture in scarred & unscarred uteri. UR of unscarred uterus has more dangerous fetomaternal in comparison with the scarred uterus [4, 5]. Hysterectomy was the major surgical intervention in the patients of uterine rupture. But in the patients where there is an issue of fertility preservation, preference is given to the suture repair. Improvement in the access to the health care sources and programs may support the prevention of high amount of morbidities and mortalities because of this complication. In the literature of this field, the rate of mortality can be as high as 13.50%, whereas

many research works from countries which are under development reported the low rates in their populations [1, 3, 5, and 7]. Most of the deaths occurs before the hospital admissions.

All the patients with previous history of CS should deliver in with full facilities for surgical interventions and transfusion of blood in emergency [8, 9]. Our country, Pakistan is a developing country, but very low rate of prevalence show the standard of obstetric care and hospitals. Some of the prompting factors of uterine rupture in the countries which are under development are age from 31 to 35, parity number of greater than 3, adverse antenatal care, grand multi-parity, prolonged labor, breech extraction, utilization of oxytocin and prostaglandins [5, 7-10]. In some of the circumstances where there is preference of suture repair for the preservation of the fertility, there is always a risk of recurring rupture [9-11, 12]. With

awareness, in time diagnosis, fast surgical intervention and neonatal care, there can be reduction in the maternal & perinatal morbidity as well as mortality [10-12].

CONCLUSION:

Uterine rupture is very important risk factor for the high rate of fetomaternal morbidity as well as mortality. There is high risk of this complication in females present with the hypovolemia. Timely diagnosis and fast recourse to laparotomy is vital for the safety of the fetus and for the prevention of other associated complications. Enhanced availability to antenatal care, referral system, awareness and relevant programs for females having pregnancy may help to prevent the incidence of uterine rupture.

REFERENCES:

1. Kadowa I. Ruptured uterus in rural Uganda: prevalence, predisposing factors and outcomes. *Singapore Med J.* 2010;51(1):35-38.
2. Nyengidiki TK, Allagoa DO. Rupture of the gravid uterus in a tertiary health facility in the Niger delta region of Nigeria: A 5-year review. *Niger Med J.* 2011;52(4):230-234.
3. Walsh CA, Baxi LV. Rupture of the primigravid uterus: a review of the literature. *Obstet Gynecol Surv.* 2007;62(5):327-334.
4. Ronel D, Wiznitzer A, Sergienko R, Zlotnik A, Sheiner E. Trends, risk factors and pregnancy outcome in women with uterine rupture. *Arch Gynecol Obstet.* 2012;285(2):317-321.
5. Spong CY, Landon MB, Gilbert S, Rouse DJ, Leveno KJ, Varner MW, et al. National Institute of Child Health and Human Development (NICHD) Maternal-Fetal Medicine Units (MFMU) Network: Risk of uterine rupture and adverse perinatal outcome at term after cesarean delivery. *Obstet Gynecol.* 2007;110(4):801-807.
6. Olagbuji BN, Okonofua F, Ande AB. Uterine rupture and risk factors for caesarean delivery following induced labour in women with one previous lower segment caesarean section. *J Matern Fetal Neonatal Med.* 2012;25(10):1970-1974.
7. Sun HD, Su WH, Chang WH, Wen L, Huang BS, Wang PH. Rupture of a pregnant unscarred uterus in an early secondary trimester: a case report and brief review. *J Obstet Gynaecol Res.* 2012;38(2):442-445.
8. Fofie C, Baffoe P. A two-year review of uterine rupture in a regional hospital. *Ghana Med J.* 2010;44(3):98-102.
9. Chuni N. Analysis of uterine rupture in a tertiary center in Eastern Nepal: lessons for obstetric care. *J Obstet Gynaecol Res.* 2006;32(6):574-579.
10. Ozdemir I, Yucel N, Yucel O. Rupture of the pregnant uterus: a 9-year review. *Arch Gynecol Obstet.* 2005;272(3):229-231.
11. Al Sakka M, Hamsho A, Khan L. Rupture of the pregnant uterus—a 21-year review. *Int J Gynaecol Obstet.* 1998;63(2):105-108.
12. Ofir K, Sheiner E, Levy A, Katz M, Mazor M. Uterine rupture: risk factors and pregnancy outcome. *Am J Obstet Gynecol.* 2003;189(4):1042-1046.