

Rupture Uterus in Pregnancy and Labour in Al-Yarmouk Teaching Hospital

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Abstract:

Background: Uterine rupture in pregnancy is a rare and often catastrophic complication with high incidence of fetal and maternal morbidity and mortality. Several factors are known to increase the risk of uterine rupture, but even in high sub groups the overall incidence of rupture uterus is low

Objective: This study aimed to identify the frequency of rupture uterus, predisposing factors for the rupture uterus and to determine maternal and fetal outcome.

Patients & Method: A retrospective review of the records from January 2004 till January 2009. Frequency, predisposing factors associated with rupture uterus and complications were determined.

Result: Total number of deliveries was 41714. There were 40 cases of rupture uterus, given a rate of 96/100000 deliveries. Stimulation of uterus by oxytocic drug 40%, previous Cesareans section 40%, other predisposing factors were: grand-multiparity (7.5%), uterine abnormality (5%), abnormal fetal lie (5%) and fetal abnormality (2.5%).

Conclusion: Previous caesarean section and over stimulation of uterus with oxytocic drug are considered the most common causes for rupture uterus

Key word: Rupture uterus

Introduction:

Uterine rupture in pregnancy is a rare and often catastrophic complication with high incidence of fetal and maternal morbidity and mortality. Several factors are known to increase the risk of uterine rupture, but even in high sub groups the over all incidence of rupture uterus is low ^[1]. The vast majority of rupture occur in women who have uterine scar, other factors include spontaneous rupture of unscarred uterus with pathological (anomalies of uterus, multiparty) ^[2], macrocosmic fetus, history of prostaglandin use and failed trial of vaginal delivery ^[3].

Methods:

This retrospective study (record review) was carried out in Al-Yarmouk teaching hospital, extended from January 2004 till January 2009. Forty cases with uterine rupture were included in this study. Maternal age, parity, risk factors for rupture uterus (history of previous

caesarean section, stimulation of uterus with oxytocic drug, fetal abnormality, uterine abnormality, and abnormal fetal lie), site of rupture, and type of surgery performed, operative complications and maternal and fetal mortality were recorded.

Results:

Total no. of birth in AL-Yarmouk teaching hospital from January 2004 to January 2009 were 41714 deliveries, 40 cases of rupture uterus were recorded giving a rupture uterus rate of (96/100000) deliveries.

Majority of patients with uterine rupture were aged between 30-39 (60%) and (32.5 %) were aged between 20-29 and (7.5 %) were aged between 40-49 years; as shown in **Table (1)**.

Majority of patients were multiparous (97.5%) and (2.5%) were nulliparous.

50% of patients had parity that ranged from 1-3 as shown in Table 2

Table 1: Age distribution of patients with rupture uterus

Age of patients	Patients	
	No.	%
20-29	13	23.5
30-39	24	60
40-49	3	3
Total	40	10

Table.2: Parity distribution of patients with rupture uterus

Parity	Patients	
	No.	%
Nulliparous	1	2.5
1-3	20	50
4-6	16	40
>6	3	7.5
Total	40	100

Twenty seven of patients with rupture uterus presented at term (≥ 37 weeks of gestation), of these (67.5%), (25%) were preterm, and (7.5%) were in the first trimester of pregnancy, as shown in **Table (3)**.

Twenty four of patients (60%) gave a history of vaginal delivery, (40%) had previous caesarean section and of these (75%) with previous one scar caesarean section, (25%) with repeated section. Predisposing factors leading to rupture uterus are summarized in **Table (4)**.

Table.3: Gestational age at time of rupture

Gestational age at time of rapture	Patients	
	No.	(%)
≥ 37 weeks of gestation	27	67.5
>24- <37 weeks of gestation	10	(25)
≤ 24 weeks of gestation	3	(7.5)
Total	40	100

Table 4: Predisposing factors to uterine rupture

Predisposing factors to rupture uterus	Patients	
	No.	(%)
Previous caesarean section	16	40
Injudicious use of oxytocic drug	16	40
Grand-multiparity	3	7.5
Abnormal fetal lie	2	5
Uterine abnormality	2	5
Fetal malformation	1	2.5
Total	40	100

No patients with multiple pregnancy or instrumental delivery.

Lateral uterine wall was the most common area for rupture in the current study (50%) and lower anterior (dehiscence scar of prior cesarean section) comes 2nd (35%), upper anterior (10%) and posterior rupture (5%), as shown in **Table 5**. Most of cases were managed by primary repair (60%), (17.5%) with bilateral tubal ligation (42.5%) without tubal ligation, accompanied haemostatic

technique such as bilateral uterine arteries ligation and internal iliac arteries ligation performed in (15%), the remainder underwent therapeutic subtotal hysterectomy (40%) as shown in **Table (6)**.

(67.5%) of patients required blood transfusion between 2-6 units of blood, intra and post operative complications of rupture uterus are shown in **Table (7)**

Table 5 .The site of rupture

The site of rupture	patients	
	No.	%
Lateral wall	20	20
Lower anterior wall	14	14
Upper anterior wall (fundal)	4	4
Posterior wall rupture	2	2
Total	40	100

Table 6; Type of surgery performed in patient with rupture uterus

Type of surgery	Patients	
	No.	(%)
Hysterectomy	16	40
Repair without bilateral tubal ligation	17	42.5
Repair with tubal ligation	7	17.5
Internal iliac or uterine artery ligation	6	15

Table 7: Intra and post operative complication

Type of complication	Patients	
	No.	(%)
Blood transfusion	27	67.5
Adnexial hemorrhage	13	32.5
Wound infection	6	15
Urinary tract infection	6	15
Bladder injury	3	7.5
Vesicovaginal fistula	3	7.5
Deep vein thrombosis	3	7.5

Maternal death rate was 2.5%, while fetal death was 100%.

Discussion: -

Rupture uterus is a serious complication potentially catastrophic event for both mother and fetus. Yeou –lih Wang et al between 1984-2003 reported prevalence of rupture uterus 1/6.0569^[3], (17.2%) reported by others^[4] F.O.Dare et al found 33 cases per 20078 deliveries with prevalence of 5.1/1000 deliveries^[5] Between 1990-2001, 136 cases of rupture uterus recorded per 71067 deliveries with incidence 1 in 523^[6]

Konje J C et al, Melesh R A et al reported rupture uterus range from 0.3 -7/1000 deliveries^[7-8] and Turner M J reported an incidence of <1/1000 deliveries^[9], the same incidence reported in our study 40/41714 (0.96/1000 deliveries).

In a study at general hospital in Zambia 44% of patients with rupture uterus were nulliparous and 33.3% of rupture uterus occur in teenager group^[4] while in the present study 60% of rupture uterus were in age group of 30-39 years, and 97.5% were nulliparous, this is in agreement with Yeou-lih Wang et al.

In Yeou-lih Wang et al study 48% of cases had previous cesarean section, while in our study 40% with history of cesarean section scar [2], a higher incidence was reported by others 75%, 96%^[4-10]

In this study, 67.5% were pregnant this is in agreement with Yeou-lih Wang et al findings^[2], 46% of labour were induced by F.O. Dare^[5], this is comparable with present study results 40%.

2.5% of patients with rupture uterus had abnormal fetus, while 6.3% were reported by others^[4].

When comparing our data of intraoperative findings, we observed similarities and differences. Similarities are that the hysterectomy rate is quite comparable with other studies 40%^[4], but higher when compared with percentage mentioned by Blanchette et al (17%) and lower when compared with Hibbard (60%)^[11,12]

With respect to the site of obstetric rupture a difference was observed: lateral wall rupture was the most common area of rupture in this study (50%) while anterior wall reported by others (52%)^[2].

The perinatal mortality rate was 100% which is significantly higher than other studies; this might be explained by facilities of Neonatal care unit.

Landon et al reported perinatal death rate of 2%^[13], 13.7% was reported by Smith et al^[14].

The over all morbidity was the same when compared with other studies:.

7.5% of patients with bladder injury were the same reported by Lydon –Rochelle et al^[15]. 67.5% of patient required blood transfusion, 44%, 29% was reported by others^[16-17] long term complication (vesicovaginal fistula) 7.5% same as reported by Mulumba Nkata^[4] F.O. Dare et al reported 4.5% maternal death rate^[5], while 2.5% maternal death reported in this study.

Rupture of unscarred uterus is still frequent in our country with high maternal morbidity and mortality and 100% prenatal mortality rate so we recommend trial of scar reserved for patient with proper assessment, well trained midwife facilities for quick transport to hospital, highly qualified and specialist surgeon should be present to deal with emergency cases.

References:

- 1-Gerard G Nahum, Krystle Quynh pham. Uterine rupture in pregnancy: overview-e-medicine Obstetrics-Gynaecology, Update: 2008; 15.
- 2-Yeou-Lih Wang, Tsung-Hsien Su, Robert Kauo-Kung Lee. Obstetric uterine rupture: A20 year clinical analysis, Taiwanese J obst. –gynaecol 2004; 143(3): 136-9.
- 3-Michael F. Mazzone, Jonathan Woolever. Uterine rupture in a patient with an unscarred uterus: A case Study, Wisconsin Medical Journal 2006; 105(5): 63-6.
- 4-Mulumba Nkata. Rupture of the uterus: a review of 32 cases in a General hospital in zambia, BMJ.com/archive/7040a2.htm. 6-12-2009
- 5-F.O.Dare, V.O.Dboro. A15-year analysis of uterine rupture, Int. J of obstet. and gynaecol. 2009; 79: 27-9.
- 6-J.D.Seffah. Ruptured uterus and the partograph, Int. J of gynaecol and obstet. 2003; 80: 169-170.
- 7-Konje JC, Odukoya OA, Ladipo OA. Ruptured uterus in Ibadan: a twelve –year review. Int. J gynaecol obstet. 1990; 32: 207-213.
- 8-Melesh RA, Kurdi AM, Algweiser AA. Intrapartum rupture of the uterus: 19 years experience. Int. J. gynocol obstet. 1999; 64: 311-2.

- 9-Shen-ChuanWei, Chih-ping Chen, uterine rupture due to traumatic assisted fundal pressure, Taiwanese J obstet. Gynecol.2006; 5(2): 170-2
- 10-Anneke Kwee, Michiel L. Bots, Gerard H.A. Visser et al. Uterine rupture and its complications in the Netherlands A prospective study .European Journal of obstet. & gynecology and reproductive biology2006;128: 257-61 .
- 11-Blachette M, Mc, Cabe J Vincent S.Is vaginal birth after cesarean safe? Experience at a community hospital. Am J Obstet Gynecol. 84-14787)184; 2001; discussion1484-7. [Medline].
- 12-Hibbard JU, Ismail MA, Wang Y. Failed vaginal birth after cesarean section: how risky is it? I. maternal morbidity. Am. J. obstet. gynaecol. 71-1365 :(7)184, 2001; discussion 1371-3 [midline].
- 13-Landon MB , Hauth JC, Leveno k J, Maternal and prenatal outcomes associated with trial of labor after a prior cesarean delivery N Engl J Med. 9-25811 (25)351;2004 16 [midline].
- 14-Smith GCS, Pell J P, Dobbie R. factores predisposing to perinatal death related to uterine rupture during attempted vaginal birth after cesarean section: retrospective cohort study.BMJ2004, 375:375-80.
- 15-Lydon-Rochelle M, Holt VL, Easterling TR, et al .Risk of uterine rupture during labor among women with a prior cesarean delivery .N Engl J Med. Jul .8-3 :(1)345;2001 5[midline].
- 16-Kieser K E, Basket t f. A10 year population-based study of uterine rupture obst. & gynecol, 2002; 100 (4): 53-794 [midline].
- 17-Leung AS, Leung Ek, Paul RH. Uterine rupture after previous cesarean delivery: maternal and fetal consequences'. Am J obstet. & gynecol. 50-945 :(4)169; 1993 [midline].

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