Rupture of the Uterus in Full-Term Pregnancy

Pages with reference to book, From 172 To 173

Talat J. Hassan (Pakistan Medical Research Council, Research Centre, Jinnah Postgraduate Medical Centre, Karachi.)
Razia Korejo (Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi.)
Sadiqua N. Jafary (Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi.)

Abstract

Of 48,519 deliveries conducted at Jinnah Postgraduate Medical Centre (JPMC) over 7 years (January, 1986to December, 1992), 257 were of ruptured uterus, giving a rate of one in 189 deliveries. Main cause of rupture was obstructed labour. Maternal mortality was 3.9% and foetal mortality 88% in cases admitted with uterine rupture and 17.6% in rupture occurring within the hospital (JPMA 43: 172, 1993).

Introduction

Reported incidence of uterine rupture varies between 1 in 93 to 1 in 2,500 deliveries[1]. It is a serious obstetrical problem and carries a high maternal and foetal mortality especially in developing countries like Zambia[2], Uganda[3] and India[4]. In Pakistan the reported frequency from Peshawar[5] and Lahore[6] is 1 per 46 and 1 per 920 deliveries respectively. This study was undertaken to determine the contributing factors and its frequency in Karachi.

Patients and Methods

All pregnant females admitted to the department of obstetrics and gynaecology of Jinnah Postgraduate Medical Centre (JPMC) with ruptured uterus over a period of 7 years (January, 1986 to December, 1992) or those who developed this complication in the hospital during this period were studied. Of 264 cases, diagnosis was clinical in 7 cases (5 were brought dead and 2 died soon after admission) so they were excluded. Detailed history including obstetrical details of present pregnancy, labour, medication, obstetric examination by medical and paramedical personnel were recorded on a specially designed proforma in the remaining 257 cases. Complete physical and obstetrical examination and determination of patient's position on proforma were done at the time of admission. Mothers having no clinical sign of uterine rupture at the time of admission asked delivering within 6-8 hours and rupture appearing fresh on laparotomy were taken as those occurring within the hospital. Ruptures extending through uterine serosa or peritoneum at laparotomy were considered to be complete ruptures while those falling short of these were classified as incomplete.

Results

All cases of laparotomy proven ruptured uterus were admitted in emergency with onset of labour 10-28 hours before admission. Two hundred and twenty-three had ruptured uterus before and 34 after admission. Theft age and parity is shown in Table I.

Table I. Age and parity of mothers.

Parity	Nos.	Age in years Mean SD	Range	Percentage
0	10	23±5	(19-28)	3.9
1-4	167	28±7	(20-38)	64.9
5-8	66	35±6	(29-37)	25.7
9-12	14	37±4	(35-42)	5.5
Mean parity	5.2	Mean age: 29 years		

Most vulnerable (65%) were multiparous women in third decade of Me. Regarding position parforma 190 (74%) had crossed the active line and 62 (24%) had crossed alert line. Remaining 5 (2%) were admitted quite early in labour and had silent dehiscence of previous scar which was inverted 'T' shaped in one case. In the group that was admitted with the complication, rupture was complete in 195, incomplete in 28, lower segment rupture in 51 (23%), vertical in 68(30%) and combination of transverse and vertical in 104 (47%) cases. Bladder was involved in 19 (85%), urethra in 2 (0.9%) and ureter (one side) in 2 (0.9%). Broad ligament hematoma was present in 50(22%) cases. Ratio of scarred to unscarred uterus was 1:1.8 (Table II).

Table II. Uterine rupture: scarred vs unscarred uterus.

Rupture	Scarred uterus(S)	Unscarred uterus(U)	Ratio S:U	P. value
Group I (after admission)	16	18	1:1.1	-
Group II (prior to admission)	81	142	1:1.8	-
Group III (Total)	97	160	1:1.6	-
Maternal mortality in:				
Group I	0	0	-	
Group II	3	7		N.S.
Group III	3	7		N.S.
Foetal mortality in:				
Group I	2	4		N.S.
Group II	65	102		P<0.001
Group III	67	106		P<0.001

Post-admission ruptures were usually in lower segment, transverse in 20(59%) and vertical in 14(41%).

Fourteen were complete ruptures, usually in cases with unscarred uterus (71%) and 20 incomplete ruptures, mostly dehiscence of previous scar (60%). They progressed well post-operatively with no major complications. One case had cardiac arrest during anaesthesia who was revived. Maternal complications and treatment in two groups are shown in Table III and IV respectively.

Table III. Complications of uterine rupture.

Uterine Rupture (257)	Complications					
	Pyrexia Nos. (%)	Septicaemia Nos. (%)	Cardial arrest No. (%)	PPH Nos. (%)	VVF Nos. (%)	Death No. (%)
After admission (39)	34 (87)	0	2 (5)	2 (5)	0	0
Prior admission (223)	223 (100)	5 (2.2)	7 (3)	11 (5)	4 (2)	10 (4.5)
	Overall maternal mortality: 3.9%					

PPH: Post-partum haemorrhage
VVF: Vesico vaginal fistula

Table IV. Treatment of rupture uterus.

Uterine rupture (257)	Treatment				
	Repair No. (%)	Repair+TL No. (%)	Hyst No. (%)	BSO No (%)	USO No. (%)
After admission (34)	10 (29)	19 (59)	5 (15)	1 (3)	4 (12)
Prior admission (223)	123 (55)	23 (10)	77 (35)	14 (6)	28 (13)

TU: Tubal ligation
Hyst: Hysterectomy
BSO: Bilateral salpingo-oophorectomy
USO: Unilateral salpingo-oophorectomy

Maternal mortality in those admitted with rupture was 4.5% and overall mortality 3.9%. Leading cause of uterine rupture in both groups was obstructed labour (64%) followed by syntocenon drip (Table V).

Table V. Causes of rupture uterus.

Causes	No. of patients (%)
1. Obstructed labour	164 (65)
Disproportion	
Cephalic presentation	
Vertex	115 (44.7)
Hydrocephalus	12 (4.7)
Anencephaly with meningocoele	1 (0.4)
Face	3 (1.1)
Brow	2 (0.8)
Impacted shoulder	4 (1.6)
Transverse lie	8 (3)
Breach presentation	
Breach	14 (5)
Hydrocephalus	5 (1.9)
2. Syntocinon	138 (53.7)
3. Wound dehiscence	97 (37.7)

Mean weight of babies was 3.5 kg (range 2.2-4.6 kg) and overall foetal mortality was 17.6%. It was higher in complete than in incomlete uterine rupture. Foetal mortality was significantly less ($P<0.001$) in post admission (17.6%) ruptures than in those admitted with this complication (74.8%).

Discussion

A significant difference is seen in foetal mortality among cases admitted with uterine rupture (74.8%) and those developing the complication within the hospital (16.7%). This is probably due to timely diagnosis and appropriate and aggressive management of the complication in cases admitted relatively early, i.e., before developing the complication which most likely was then inevitable. Remarkable difference is also seen in maternal mortality and morbidity in the two groups (Table III) showing that avaiability of expert medical facilities helps the patient at whatever stage it is sought. If it is made use of early in pregnancy a number of obstetrical comlication, including the one under discussion, may be avoided. A proper ante-natal care which includes careful obstetric history may suggest the presence or absence of CPD and equally careful systematic clinical pelvimetory will give the size and configuration of the pelvis which is very important for intelligent evaluation of CPD: the leading cause of obstructed labour in our cases. Sequelae of obstructed labour are many and varied, most dangerous of which is uterine rupture, which carries a high maternal and foetal mortality.

References

1. Masleh, R., Sabagh, T.O. Ruptured uterus still an obstetrical problem. Saudi Med. J., 1987;8:495-98.
2. Dearley, J.M. Maternal injuries and complications. Dewhursts text book of obstetric and gynaecology for postgraduate. Blackwell Scientific Publication, 1986;p.422.
3. Golan, A., Sandbunk, O. and Rubin, A. Rupture of pregnant uterus. Obstet. Gynaecol., 1980;50:549-54.
4. Rendle-Short, C.W. Rupture of gravid uterus in Uganda. Am.J.Obstet. Gynecol., 1960;79:1114-20.
5. Symone, M.E. Essential obstetrics and gynaecology, London, Churchill Livingstone, 1987,p.3.
6. Fatima, B. Review of uterine rupture in Sir Ganga Ram Hospital, Proceedings of first Pakistan Congress of Obstetric and gynae. November 1978, Lahore, pp 28-32.