TWENTY YEARS STUDY OF RUPTURE OF UTERUS IN EDEN HOSPITAL

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INTRODUCTION

Rupture of the uterus is a serious complication encountered not infrequently in obstetric practice. It is a great hazard to the life of the mother and a greater one to the newborn.

METHODS & MATERIAL

Materials have been collected from Eden Hospital, Medical college, Calcutta during twenty years period of which the first ten years extend from 1949 to 1958 and the second ten years from 1977 to 1986. All the cases of rupture of uterus during these periods have been studies thoroughly and comparative study has been made regarding-

(1) Incidence of rupture of uterus

(2) Etiological factors and the changing trends

(3) Time of rupture-(During pregnancy and during labour)

(4) Modalities of treatment undertaken

(5) Any change in the profile of maternal mortality and fetal outcome from rupture of uterus during these two periods.

The incidence of rupture of uterus varies considerably at different times and in different parts of the world ranging from 1:100 to 1:11,000 deliveries.

In India different workers have reported different incidences-

Menon-(1962) from Madras 1 in 415 deliveries

Gogai-(1971) from Gauhati 1 in 456 deliveries

Devi & Reddy - (1975) from vizog 1 in 270 deliveries

Nirmala et al - (1983) from Tanjore 1 in 102 deliveries

Table No.1 shows the number of rupture of uterus cases and No. of deliveries in different years. The total number of rupture of

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uterus between 1949-1958 was 71 and during 1977-1986 it was 121 whereas total number of deliveries during these two period were 97,571 and 87,168 respectively.

Table No.2 shows the incidence of rupture in different years. The over-all incidence during first 10 years period was 1 in 1375 deliveries and during second 10 years it was 1 in 720 deliveries. So the incidence of rup-

TABLE 1

The Number of rupture of uterus and number of deliveries in different years

Year	Number of rupture	number of deliveries	Year	Number of rupture	Number of deliveries
1949	2	6,016	1977	8	8,772
1950	4	7,017	1978	10	8,708
1951	4	7,617	1979	8	10,710
1952	2	7,596	1980	9	8,348
1953	3	8,541	1981	13	8,503
1954	7	9,503	1982	17	8,570
1955	11	10,558	1983	18	8,548
1956	11	13,170	1984	15	8,384
1957	12	13,445	1985	8	8,416
1958	15	14,108	1986	15	8,169
Total	71	97,571	Total	121	87,168

Table 2

The incidence of rupture of uterus in different years

Year	Incidence rupture of uterus	Year	Incidence of rupture of uterus
1949	1: 3008	1977	1:1096
1950	1:1754	1978	1:870
1951	1:1904	1979	1:345
1952	1:3798	1980	1:927
1953	1:2847	1981	1:654
1954	1:1387	1982	1:492
1955	1:959	1983	1:474
1956	1:1188	1984	1:558
1957	1:1120	1985	1:1052
1958	1:940	1986	1:544
Overall	1:1375		1:720

ture of uterus has definitely increased in terms of number of deliveries.

ETILOGICAL FACTORS

According to Etiological factors the cases have been broadly grouped under 3 different headings.

GROUP 'A' Spontaneous rupture of previously injured uterus.

GROUP 'B' Spontaneous rupture of intact uterus

GROUP 'C' Traumatic

(a) Obstetrical

(b) Non-obstetrical

Under Group 'A' cases have been collected where scar of some previous operation or injury on a uterine wall, gave way during subsequent pregnancies or labour. Thus the ruptures were due to disruption of previous C.S. scar-classical or lower segment, scar of previous D/E operation, scar of manual removal of placenta and recently the scar of previous hysterotomy are included.

Table No. 3 Shows the cases of spontaneous reupture of previously injured uterus.

Under the heading of group 'B' cases gave been collected where rupture took place spontaneously during pregnancy and labour in intact uterus-causes are obstructed labour, grandmultiparity, pregnancy in congenitally malformed uterus, angular pregnancy and accidental haemorrhage.

Table No. 4 Shows the distributions of the cases under group 'B'.

Obstertical trauma has taken an important role in causation of rupture throughout the years.

Table No. 5 shows different Obstrauma for rupture of uterus. There is slight decrease in incidence of traumatic rupture during second 10 years period. In the present study one case of rupture uterus due to non obsttrauma has been collected where there was a history of fall.

Table 3
The precipitating factors of rupture in group 'A'

Spontaneous rupture of previously injured uterus	1949-58	1977-86
1. C.S. Scar		
Classical	9	3
Lower- segment	10	40
2. Scar of evacuation	2	5
3. Scar of previous manual removal	2	0
4. Hysterotomy Scar	0	1
Total	23	49
P.C.	32.4%	40.5%

Table 4

The precipitating factors rupture in group 'B'

Spontaneous rupture of intactuterus	1949-58	1977-86
1. Due to obstruction	14(19.8%)	40(40.5%)
Hydrocephalous	6	8
C.P.D.	4	19
Malpresentation (Transverse) lie, Breech, Brow, Face etc.	3	19
Impacted ovarian tumour	1	3
2. Grande-multipara	4	2
3. Maldevelopment of uterus	3	2
4. Angular pregnancy	1	-
5. Accidental haemorrhage	-	1
Total	22	54
P.C.	30.9%	44.6%

TABLE 5

The preciptating factors of rupture in group 'C'

Traumatic rupture	1949-58	1977-86
1. Non-obstertrical	1	-
2. Obstetrical	25	18
i) Use of pitocin extract or syntocinon	8	4
ii) Forceps	5	2
iii) Internal version	3	2
iv) Craniotomy	3	3
v) Manual removal of placenta	2	3
vi) Decapitation	1	2
vii) External version	1	-
viii) Excessive suprafundic pressure	1	-
ix) Shoulder systocia	1	-
x) Breech extractio	-	2
Total	26	18
Percentage distribution	36.7%	14.9%

TIME OF RUPTURE

Analysing the different literature it has been found that maximum no. of rupture occured during 36-40 wks. In the present study during both the periods maximum no. of rupture occured between 37-40 weeks. During early week there were rupture of rudimentary horn pregnancy, angular pregnancy, scar of D/E and hysterotomy and also non-obst traumatic rupture cases.

Maximum number of rupture of C.S. scar occured between 39-40 weeks.

Table No. 6 shows the time of rupture e.g. during pregnancy and during labour in these two periods of time.

Though classical scar ruptures more during pregnancy but the risk of rupture during pregnancy of transverse scar also remain to a lesser extent.

Cases have also been collected where at the time of elective C.S. of post C.S. pregnancy dehiscence of scar of Lower segment has been noted

TREATMENT

Table No.7 showing different treatment adopted.

Different surgical treatment adopted (1) Sub total hysterectomy (2) total hysterectomy (3) repair of scar with/without ligation

TABLE 6
The Time of Rupture

	1949-1958			1977-86	
Group	Durring Pregnancy	During Labour	Group	During pregnancy	During labour
A	10	13		15	34
B	4	18		3	51
C	3	23		1	17
Total	17	54		19	102
% Distribution	24%	76%		16%	84%

TABLE 7
Treatment done in different cases

	1949-1958		1977-1986	
Type of therapy	Number	P.C.	Number	P.C.
1. Subtotal hysterectomy	43	60.5%	69	57.1%
2. Total hysterectomy	7	9.8%	12	9.9%
3. Repair of scar with/without ligation	8	11.3%	38	31.4%
4. No treatment could be given	6	8.5%	-	-
5. Other: e.g. Vaginal repair/excision of rudimentaryhorn	7	9.8%	2	1.6%

(4) others e.g. vaginal repair, excision of rudimentary horn etc. Between 1949-58 subtotal hysterectomy was done is 60.5 per cent and total hysterectomy in 9.8 per cent cases. Repair of scar in 11.3 per cent cases. But during 2nd ten years period subtotal hysterectomy was done in 57 per cent and totall hysterectomy in 9.9 per cent and repair of scar was done in as many as 31.4 per cent cases-an appreciable increase. Vaginal repair of scar which was practised formerly, has been abandoned in recent years.

MATERNAL MORTALITY & FETAL SALVAGE

Maternal mortality from rupture of uterus is very high even at the present moment, all over the world.

Whitfield (1986) is of the opinion, that since 1955 there is no change in maternal mortality rate from rupture of uterus.

Table No. 8 shows maternal deaths from different cases of rupture throughout the year. During the first 10 years period 2.7 per cent of all maternal deaths was due to rupture uterus and 1.8 per cent during the 2nd 10 years period. Among the total rupture cases 29, 5 per cent and 14.8 per cent died. 93% patients were admitted from outside with rupture on average.

There is no change in M M R due to rupture. It remains static as 2/10,000 births since 1949. (Table 9 shows)

TABLE 8

Maternal mortality and fetal wastage due to rupture of uterus

Etiological factors	Number of maternal deaths (1949-1958)	Number of maternal deaths (1977-1986)
1. C.S. Scar		
Classical	2	1
Lower segment	1	1
2. Pitocin / Syntocinon	4	2
3. Internal version	2	1
4. Forceps	2	2
5. Craniotomy	1	2
6. Decapitation/External Version/shoulder dystocia	3 (1 in each)	Nil
7. Hydrocephalous	2	2
8. C.P.D.	1	3
9. Malpresentation	1	2
10. Congenital defects	1	1
11. Grand multopara	1	1
Total	21(29.5%)	18(14.8%)
Fetal wastage	85.9%	73.2%

TABLE 9

M.M. Rate due to Rupture uterus per 10,000 births in different years

Year	No. of deaths due to rupture	No. of total births	M.M./10,000 births
1949-58	21	97,571	2/10,000
1977-86	18	87,168	2/10,000

CONCLUSION

Total 192 cases of ruptured uterus have been studies during during twenty years period in Eden Hospital. The incidence has increased from 1 in 1375 deliveries between 1949-58 to 1 in 720 deliveries between 1977-86.

Maternal mortality among ruptured uterus cases has diminished from 29% to 14.8%. This mainly due to

- early diagnosis

- change in etiological factors (more incidence of scar ruptures.

- better blood transfusion, anaesthesia, antibiotics and chemotherapeutic drugs.

But there is no change in maternal mortality rate due to rupture uterus per 10,000 births since 1949.

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