RUPTURE OF UTERUS

by

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Introduction

Rupture of the uterus is a deadly complication of pregnancy and labour. It affects both the mother and the baby, simultaneously threatening their lives. The latter very rarely survive from fatal separation of the placenta. The present report is from the obstetric unit of the Government District Hospital, Murshidabad, West Bengal. The District has the population of about 18,00,000. The report covers the period from July 1958 to November 1960. The total number of confinements during the years of report was 7,804. Out of these, 39 cases were complicated with rupture of the uterus.

It is said, that primiparae, without any history of previous uterine operations or without any congenital abnormality of the uterus, are immune to uterine rupture. In this series, we had one primipara with rupture of the uterus, where the baby presented with hydrocephalic head.

It is expected that in a well-developed country the incidence of rupture of the uterus should be infrequent and not so frequent as noted in this paper. Most of our patients came from the village side and majority of them were admitted with delayed obstructed labour. The commonest uterine abnormality which was the cause of rupture of the uterus in this series was due to previous uterine operations. In 6 classical caesarean sections, and in one lower segment caesarean section were done in previous pregnancy.

In this paper an attempt has been made to classify rupture of the uterus with a new outlook, according to the type of segmental involvement, and treatment has been co-related accordingly.

Incidence

Total number of confinements ..	7,804
Total number of rupture of the uterus ..	39
Incidence of rupture:	4: 1000.

Average incidence of rupture of the uterus according to Morrison and Douglas (1945) is 1: 1489. Incidence of rupture of the uterus is apparently very high in our hospital series. But this hospital, being in the District headquarters, receives mostly complicated cases from all over the district and neighbouring districts. In uncomplicated cases home confinement is preferred by our people, particularly in the distant areas.

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If it were possible to get the total number of confinements from all over the districts, the incidence certainly would have been much less.

Clinical Features

A brief analysis of the cases studied is given in the following tables:

TABLE I

Relationship of Age, Parity and Period of Pregnancy with Rupture of Uterus

Age in years	No of cases	Parity	No.	Period of pregnancy	No.
18 to 23 years	12	1st para	1	32 weeks	2
24 to 29 years	6	2nd „	6	34 weeks	2
30 to 35 years	15	3rd „	8	36 weeks	1
36 to 41 years	6	5th „	9	Postmature by	
		6th „	1	one month	1
		7th „	1	Rest all	Term
		8th „	4		pregnancy
		9th „	5		
		10th „	2		
		13th „	2		

TABLE II

Past Obstetric History

Previous uterine operations		Vaginal delivery after interference	Labour prolonged	Easy labour
Classical caesarean section	Lower uterine segment caesarean section			
6	1	8	14	10
In 3 cases for antepartum haemorrhage, in rest 3 for obstructed labour	Lower segment caesarean section was done for antepartum haemorrhage	A. Forceps with dead baby in 2 cases. In one case first one classical caesarean section and 2nd one forceps. B. Craniotomy in 6 cases. In one 3rd gravida all the previous pregnancies ended in craniotomy. C. Internal podalic version with dead baby in one case.	In a case of 13th gravida all previous babies were still-born after prolonged labour	

TABLE III

Presenting Symptoms of Patients

Obstructed labour	Vaginal bleeding with or without obstruction	So-called silent rupture of the uterus (patients complained of vague abdominal pains)
37	7	2

TABLE IV

Foetal Presentations

Cephalic	Transverse lie with or without hand prolapse	Obstructed breech	Undetected
29 4 had hydrocephalic head	8	1	1

TABLE V

Types of Rupture according to Segments Involved

Transverse rupture through anterior wall of lower uterine segment	Transverse rupture through both anterior and posterior walls of lower uterine segment	Longitudinal rupture through one side, involving both the segments	Longitudinal rupture through both sides, involving both the segments	Rupture through previous caesarean section scar	Rental rupture through lower uterine segment
15	3	8	2	Classical caesarean section scar 6 Lower uterine segment caesarean section scar 1	2

* In four patients we could not operate, as such we could not decide the type of rupture but in one, where we examined the patient under anesthesia vaginally.

TABLE VI

Treatment

Total abdominal hysterectomy	Subtotal abdominal hysterectomy	Resuturing of the ruptured scar with ligation of tubes	Lower segment caesarean section (in cases of rental rupture)	Not operated
10	19	4	2	4

Analysis of the Causes of Death and Post-operative Complications

In this series of 39 cases we lost 13 patients, out of which 9 died in the post-operative period varying from 2 hours to 1½ months. In 4 patients we could not operate owing to the very poor general condition and all of them died within a few hours of admission, excepting one, where the patient died on the 5th day after admission. We could not transfuse blood in any of these cases before 48 hours from the time of

TABLE VII

Authors	Period	No. of deliveries	Rupture		Spontaneous				Traumatic	
			No.	Incidence	Due to caesarean section		Other causes		No.	Per cent
					No.	Per cent	No.	Per cent		
Sheldon	1918-34	47,554	26	1 : 1,829	5	19.2	4	15.3	17	65.4
Morrison and Douglas	1920-43	65,916	45	1 : 1,465	17	37.7	5	11.1	23	51.2
Delfs and Eastman	1920-45	53,574	53	1 : 1,010	10	18.8	17	32.1	26	49.1
Bill, Berney and Melody	1925-41	69,391	23	1 : 2,756	13	56.5	2	8.7	8	34.7
Own series	1959-60	7,804	39	4 : 1,000	7	17.9	32	82.05	Nil	Nil

either admission or operation because of lack of facility. Six patients out of 9 post-operative deaths died from shock within 1 to 6 hours. In one patient tetanus developed on the 4th post-operative day and she died on the 5th day, in spite of administration of heavy dose of Tetanus Antitoxin. Another death was on the 8th post-operative day. She complained of chest pain, suddenly collapsed and died within a few minutes. We made the clinical diagnosis of massive pulmonary embolisim, which could not however be confirmed by post-mortem examination. The last one in the series died after one and a half months. She had rectal prolapse and subsequently developed subphrenic abscess from which she died.

It is needless to mention that majority of the foetuses die from fatal separation of placenta. In this series 6 babies were brought out alive, 4 in cases where the classical caesarean section scar gave way and 2 in cases of rental rupture of the uterus.

In the series of major post-operative complications 3 of the patients had burst abdomen just after the removal of stitches on the 8th to 10th post-operative day. The wounds were resutured. All of them survived but 2 of them have developed ventral hernia.

Discussion

Rupture of the uterus presents to the obstetrician with volleys of problems mainly regarding its diagnosis and management. Althcugh classical signs and symptoms of rupture of the uterus are described in the textbooks, it is very difficult at times, particularly, when patients come with prolonged obstructed labour. The outstanding feature, in these cases, is shock. The shock may be due to the effect of prolonged obstructed labour alone or may be due to the effect of prolonged labour in combination with the rupture of the uterus and haemorrhage. The question of loss of contour of the uterus is a very ominous sign when present along with two palpable masses, one being the extruded foetus, the other the contracted uterus. In this series unusual tenderness over the uterus was taken to be the 'sign qua non' in the diagnosis when the said classical sign was absent. In this paper influence of highest parity on rupture of the uterus has not been much emphasised. It is possibly owing to the less frequent confinement in the higher parity groups. The classification of uterine rupture is not easy. Classification into complete and incomplete varieties is not of much help. The etiological classification into spontaneous and traumatic ruptures is more of theoretical importance. It appears to me that the classification according to the segments involved is more logical from the treatment point of view. Whatever classification is accepted the armamentarium of diagnosis is same in all the varieties. It is not possible, however, to diagnose without laparotomy which type of rupture is involved in a particular case. The classification which has been proposed in this paper has a very important bearing in the treatment which I shall discuss later on. With these points in view the new type of classification is proposed:

A. *Longitudinal rupture might involve*

I. *Upper uterine segment only:—*
(a) In cases where classical caesarean section scar gives way.
(b) A solitary case was recorded in this series with so-called silent rupture of the uterus where there was no history of previous uterine operation. The rupture was longitudinal involving upper uterine segment only.

II. *Both segments:—*
As an aftermath of prolonged obstructed labour. It involves the lateral wall of either or both sides of both segments.

III. *In Lower uterine segment alone:—*
No case was recorded in this series.

B. *Transverse Rupture*

Always through stretched lower uterine segment. In the present series no case of transverse rupture was recorded in the upper uterine segment. It can be safely said that the upper uterine segment is immune to transverse rupture, besides cases of myomectomy, where I have no idea about the type of rupture, as there was no case in the present series.

C. *Rental Rupture*

This is really beginning of the end of uterine resistance against obstruction. There is no visible rupture but a haematoma is formed just below the peritoneum in the lower uterine segment. When the peritoneum is stripped a rent in the lower uterine segment is visible. Rental rupture was not recorded in the upper uterine segment in the present series as well.

In this paper maximum number of ruptures were through the lower uterine segment and were transverse (Table v). There was one case of so-called silent rupture where the rupture was longitudinal and involved the fundus and body of the uterus. The uterus was not assulted by previous operation. This is so far about the classification. The treatment of rupture of the uterus whenever it is diagnosed is laparotomy. There is practically no place for conservative treatment. The latter may be adopted where surgery cannot be undertaken owing to the very poor general condition of the patient leaving aside all hopes of her survival. Conservative treatment was adopted in the present series in one case but the patient died on the 5th day.

The *treatment* of rupture of the uterus is divided into

A. Hysterectomy | Total
| Subtotal
B. Suturing of the wound with ligation of tubes.
C. Lower segment caesarean section.

There is considerable indicision whether total or subtotal hysterectomy should be done in these cases.

There are authors who prefer total over sub-total, or subtotal over total hysterectomy. At least in this branch of surgery quickness, with all reasonable care, is of supreme importance. Where there is longitudinal rupture involving the lower uterine segment, the vault of vagina is invariably opened. Total abdominal hysterectomy is the only line of treatment in these cases. If one attempts to do the subtotal type, he has to repair the lower uterine segment along with the cervix and vaginal vault, which takes a long time. There is every possibility also to injure the vital structures and to leave behind a bleeding vessel. If the wound is transverse, it is through the lower uterine segment as I have mentioned already.

Here subtotal, supravaginal hysterectomy along the course of rupture is an easier approach. If one tries to remove the cervix here, he has to face great danger of multiple bleeding foci and also injury to the urinary bladder and rectum as the anatomy is distorted by huge haematoma formation.

In cases of rental rupture, lower uterine segment caesarean section is a safer approach. The incision should be made along the course of the rent. Whether the tubes should be ligated depends on the parity of the patient. If rupture is through the previous classical caesarean section scar, repair of the wound along with the ligation of the tubes is preferable in younger groups of patients. If the patient is over 40 years of age, quick subtotal hysterectomy should be the choice depending on the general condition of the patient. It is worth while to mention in this connection that the haemorrhage and shock is much less in the scar rupture of classical caesarean section.

Summary

1. 39 cases of rupture of the uterus have been presented in this paper.
2. New type of classification along the course of rupture has been discussed.
3. The treatment has been corelated according to the new type of classification.

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