RUPTURE OF UTERUS—A REVIEW OF 124 CASES

by

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Rupture of the uterus is a grave obstetrical emergency. Unfortunately it is more likely to occur in the rural areas of developing countries where antenatal care is unheard of. Intranatal care is either not available or is given by the unskilled village midwife. Most patients reach the hospital in a moribund state made worse by poor transportation. From current medical statistics, rupture of uterus is shown to be a rare occurrence where good ante-natal and intra-natal care are insisted upon. Incidence varies greatly according to the centres or countries from where cases are reported.

Material

This study was carried out at the Government Maternity Hospital, Pondicherry (South India) which has 200 beds. It is the main referral centre for obstetrical emergencies within a radius of 40-50 km.

Case sheets of 124 cases of rupture uterus were reviewed from January 1971 through September, 1976.

Observations

Incidence: During the period of study there were 35,560 deliveries. There were 124 cases of uterine rupture, making a uterine rupture/delivery ratio of 1:286 deliveries.

Forty-two per cent of the patients were in the age group of 26-30 years.

Rupture in Relation to Parity

Table I shows the distribution of patients according to parity. Average parity was 3.5. In 55% of the patients parity was 3 or less, and 4 patients were nulliparous.

Rupture in Relation to Labour

Uterine rupture was recognised antepartum in 3 cases, postpartum in 2 cases and intrapartum in 119 cases.

In antepartum rupture, one had a classical caesarean scar; the second was an eighth gravida who had manual removal of placenta on two occasions; and

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Source of Study:

Case records of 124 patients of uterine Rupture from January, 1971 through September, 1976.

TABLE I
Distribution of Patients According to Parity

Parity	0	1	2	3	4	5	6	7	8
No. of Patients	4	21	15	29	21	16	8	7	3

Average Parity 3.5

the third had undergone instrumental evacuation for missed abortion.

The 2 cases of postpartum rupture were detected to be due to placenta percreta when manual removal was attempted for retained placenta.

Intrapartum rupture occurred in 119 cases. Associated cephalo-pelvic disproportion in 101 and malpresentation and malposition in 11. Of the 101 cases of cephalo-pelvic disproportion, 43 had contracted pelvis, 52 had big baby, and fetus was hydrocephalic in 6. Of the 11 cases of malpresentation and malposition the lie was transverse in 8, 2 were brow presentations, and 1 persistent mento-posterior.

Rupture in Relation to Previous Scar: Rupture of a previous scar occurred in 8 out of 124. One had a classical caesarean scar which ruptured antepartum, in the other 7 intrapartum rupture of lower segment scar occurred. Of these 3 ruptured while trial for vaginal delivery was in progress.

Rupture in Relation to Mismanagement: Of the 124 cases, 115 were admitted to the hospital with established rupture. In most of these cases there was history of use of violence like forceful fundal pressure and attempted forceps delivery and injudicious use of oxytocics. However, it was difficult to obtain the correct information as the patients were illiterate and the referred slips did not contain adequate information.

Treatment and Location of Rupture

All the cases were treated as acute surgical emergencies. Hysterectomy was performed in 91 (73%), subtotal in 58 and total in 33. The rent was repaired in 33 (26.5%), in 20 the tubes were also ligated. Salpingo-oophorectomy had to be resorted to in 3 cases to assure hemostasis. Associated bladder injury had to be repaired in 5 cases.

The location of the rupture was in the upper segment in 3 cases of antepartum and 2 cases of postpartum rupture. In the remaining 119 cases the rupture was located in the lower segment in 112; it was anterior with lateral extension in 46 and posterior in 7 cases.

Morbidity and Mortality

In 54 (45%) cases there were no complications and they were discharged from the hospital by the 12th postoperative day. Variable degree of wound infection was noted in 55 cases with burst abdomen in 4 of them. Urinary tract infection occurred in 45 cases and hydronephrosis in 2 cases. Adnexal masses developed in 11 cases.

There were 15 (12%) maternal deaths, all of which followed spontaneous rupture. The cause of death was irreversible shock in 7 cases, septicaemia in 6 and pulmonary embolism in 2.

Foetal mortality rate was 97%.

Discussion

The incidence of rupture uterus in the reported publications from developing countries is much higher than in developed countries (Randle-Short 1960; Lavery 1955; Groen 1974 and Akasheh 1968).

The incidence in the present series of 1 rupture to 286 deliveries is lower than 1 to 167 reported from this hospital in 1963 (Prabhavathi and Mukherjee 1963). The decline is probably due to improvement in the available obstetrical care.

In several series from the developing countries the average parity of 4.6 to 5.6 has been reported (Menon 1962; Margulies and Crapanzano 1965 and Jacobs and Bhargava 1971). In the present study the average parity of the patients was 3.5 and 55% of cases had 3 or less deliveries. Four patients were nulliparous (Table I). It seems that causes other than multiparity may have important bearing on rupture of uterus (*vide infra*).

Spontaneous rupture of an intact uterus occurred in 87.8% of our cases. Similar observations have been made in several other reports (Groen 1974 and Akasheh 1968). Such ruptures are more catastrophic than the scar-rupture because of greater blood loss (Yussman and Maynes 1970). These patients are usually admitted with typical picture of severe hemorrhagic shock. In all the cases of intrapartum spontaneous rupture, the lower segment is involved often with lateral extension, and sometimes with injury/tear of the bladder. In cases with atypical location of the rupture in the upper segment, besides classical caesarean scar weakening of the myometrium following manual removal of placenta, instrumental evacuation, and placenta percreta, are responsible.

The uterine edges in spontaneous rupture are oedematous and necrosed and it is difficult to insert the stitches. Besides, the uterus continues to remain a source of infection. The mortality rate was 18% following rent repair and 9.8% following hysterectomy (Table II). Of the 6 deaths due to septicaemia, 5 followed rent repair.

TABLE II

Maternal Mortality in Relation to Type of Surgery

Surgery Performed	No. of cases	No. of deaths (%)	Septicaemia	Irreversible shock	Pulmonary embolism
Hysterectomy	91	9 (9.8%)	1	6	1
Rent Repair	33	6 (18%)	5	1	1

Hence hysterectomy is the treatment of choice in spontaneous rupture of uterus, as has also been observed by others (Prabhavathi and Mukherjee 1963; Mitra 1973; Lawson and Stewart 1967; Caggiano and Breen 1968 and Hellman and Pritchard 1973). Rent repair may be performed only in cases of scar rupture, or in cases where the condition of the patient is too poor to stand hysterectomy.

First a sub-total hysterectomy is performed to achieve hemostasis and if the patient's condition improves the cervix is also removed; as was possible in 33 out of 91 hysterectomies in this study. This approach was suggested by Gelle *et al* (1974).

Spontaneous rupture of uterus in patients with low parity, subjected to protracted labour due to non-recognition of the underlying causes, and to unskilled and forceful handling outside, account for the high incidence of this catastrophe. As more knowledgeable obstetrical care

is offered to a larger population, the maternal and foetal mortality due to rupture uterus will decline. A careful evaluation of any patient with prolonged labour, estimation of the foetal size recognition of malpresentation and malposition, and detection of congenital malformations like hydrocephalus go a long way in the prevention of a catastrophe like uterine rupture. An appreciable reduction in the incidence of this accident has been reported by Clairborne and Schelin (1968) and Brierton (1950).

Abstract

A clinical study of 124 cases of rupture of pregnant uterus in the Government Maternity Hospital, Pondicherry (South India) is presented and the findings compared with other reports. These cases occurred over a period of five years with an incidence of one rupture uterus in 286 deliveries. The cause of uterine rupture as in all the developing countries was largely the result of lack of proper antenatal and intra-natal care.

There was an overall maternal mortality rate of 12%. Hysterectomy either total or sub-total was the procedure of choice as also recorded in an earlier study from this hospital in 1963.

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