

Maternal death due to non-traumatic spontaneous complete rupture of scarred uterus— a rare case report

Khetre R R^{1*}, Bansude M E², Dode C R³, Walwekar M M⁴

^{1,2}Assistant Professor, ³Professor & Head, Department of FMT, Government Medical College, Latur, Maharashtra, INDIA.

⁴Assistant Professor, Department of OBGY, Dr. S. C. Government Medical College, Nanded, Maharashtra, INDIA.

Email: radheyakhetre@yahoo.in

Abstract

Rupture of gravid uterus is a surgical emergency. Predisposing factors include a scarred uterus or multiparity. It is the most serious obstetric complication. If untreated its mortality approaches 100% for the mother and undelivered fetus. We present a rare case of maternal death due to non-traumatic spontaneous complete rupture of scarred uterus with previously successful vaginal birth after Caesarean (VABC) delivery. Maternal and perinatal outcomes are optimized by awareness of risk factors, recognition of clinical signs and symptoms, and prompt surgical intervention.

Keywords: maternal, death, spontaneous, rupture, scarred, uterus

*Address for Correspondence:

Dr. Khetre R R, Assistant Professor, Department of FMT, Government Medical College, Latur, Maharashtra, INDIA.

Email: radheyakhetre@yahoo.in

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INTRODUCTION

Uterine rupture is a potentially life-threatening to both mother and baby. It occurs when the integrity of the myometrial wall is compromised. This usually occurs during the last weeks of pregnancy, labour or delivery.¹ Rupture of uterus is defined as “Disruption in the continuity of the all uterine layers (endometrium, myometrium and serosa) any time beyond 28 weeks of pregnancy. In complete rupture, the fetus with or without the placenta usually escapes out of the uterus. The causes of rupture of the uterus are broadly divided into spontaneous and iatrogenic groups. Spontaneous rupture is further divided into rupture of intact uterus and rupture of scarred uterus. Iatrogenic group is further divided into traumatic and oxytocics. Previous Caesarean section and

multiparity are the important causes of spontaneous rupture of scarred and intact uterus respectively.²

CASE REPORT

A 21 years old pregnant female (G₃P₂L₂A₀) was brought to Sub-District Hospital, Nilanga, Maharashtra, India by her relatives. Medical officer examined the patient immediately, with chief complaints of severe pain in the abdomen with uterine contractions. No history of trauma and major illnesses. On general examination noticed pallor. Systemic examination was normal. On local examination noticed no bleeding or leaking present per vaginum. Obstetric history was G₁ = Lower segment Caesarean section delivery, G₂= Normal vaginal delivery and G₃ = present pregnancy. He started medical management. In spite of the treatment, patient was having severe pain in the abdomen and giddiness. Then patient was then immediately referred to the Government Medical College and Hospital, Latur, Maharashtra, India for further management. But, patient was brought dead on arrival to the hospital. Postmortem examination conducted. On external examination, undergarments were soaked with blood. Deceased was moderately built and averagely nourished. Features were pale. Abdominal girth was 103 cm. Signs of pregnancy were present. Old horizontal scar mark was present over infra-umbilical

region of abdomen of previous lower segment Caesarean section operation. No surface wound or injury was noticed except of intravenous puncture marks over dorsum of both hands (as a part of treatment). Blood was oozing through the vagina. On internal examination, abdominal cavity filled with clotted and fluid blood. Evidence of whole full term female fetus having double looped cord around neck, umbilical cord and part of placenta was expelled out through the ruptured uterus into

the abdominal cavity. All organs were pale. Uterus was having weight 740 grams, measurements 16 CM x 10 CM x 6 CM and ruptured horizontally at lower segment producing a rent on antero-lateral side of length 10.5 CM at previous lower segment Caesarean section site. Margins were blood infiltrated and reddish in appearance. After postmortem examination, opinion as to the cause of death was given as “Hemorrhage and shock due to rupture of gravid uterus.”



Figure 1



Figure 2

Legend

Figure 1: Showing non-traumatic complete rupture of uterus with whole full term fetus, umbilical cord and part of placenta expelled out into abdominal cavity

Figure 2: Showing rupture of uterus

DISCUSSION

The peculiarity of this case is that maternal death due to non-traumatic spontaneous complete rupture of scarred uterus with previously successful vaginal birth after Caesarean (VBAC) delivery, which is rare. Rupture of a gravid uterus is a surgical emergency. Predisposing factors include a scarred uterus.³ Rupture of the uterus during pregnancy or labour is the most serious obstetric complication. If untreated its mortality approaches 100% for the mother and undelivered fetus. The symptoms and signs of rupture of the uterus due to separation of a Caesarean scar may vary greatly from usual picture. In an occasional instance the dictum “*Once a Caesarean. Always a Caesarean*” may be violated. The cardinal principles of good treatment are massive transfusion and immediate operation. Shock is no contraindication to operation.⁴ Scar rupture is the remote maternal post operative complication during future pregnancy.⁵ The incidence of intrapartum rupture of an unscarred uterus was 1 in 16,849 deliveries.⁶ An overall incidence of pregnancy related uterine rupture of 1 per 1,416 pregnancies (0.07%)⁷. The risk of lower segment scar rupture is low and even if it does occur, maternal death is much less and perinatal mortality is about 1 in 8. Management of pregnancy with prior Caesarean delivery is either vaginal or abdominal delivery. One of the benefit of successful vaginal birth after previous Caesarean (VBAC) delivery is less chance of uterine rupture in the future pregnancy than the pregnancy with previous

Caesarean section⁸. The effect of previous Caesarean delivery on the risk of uterine rupture has been studied extensively. In a meta-analysis, Mozurkewich and Hutton used pooled data from 11 studies and showed that the uterine rupture rate for women undergoing trial of labour after Caesarean (TOLAC) was 0.39% compared with 0.16% for patients undergoing elective repeat Caesarean delivery (Odds ratio OR, 2.10; 95% CI. 1.45-3.05). Hibbard *et al* examined the risk of uterine rupture in 1,324 women who underwent a TOLAC. They reported a significant difference in the risk of uterine rupture between women who achieved successful vaginal birth compared with women in whom attempted vaginal delivery failed (0.22% Vs 1.9%; OR, 8.9; 95% CI, 1.9-42). Several studies have shown a protective association of previous vaginal birth on uterine rupture risk in subsequent attempts at vaginal birth after previous Caesarean delivery. Zolep *et al* compared 1,021 women who underwent TOL after a single previous Caesarean delivery with 1 previous vaginal delivery with 2,762 women who underwent a TOL with no previous vaginal delivery. The uterine rupture rate was 0.2% versus 1.1% (p=.01). Among women with a single uterine scar, those with at least 1 previous vaginal delivery had one fifth the risk for uterine rupture compared with women without a previous vaginal delivery (OR, 0.2; 95% CI, 0.04-0.8). Caughey *et al* found that woman with a previous vaginal delivery were about one fourth as likely as patients without a previous vaginal delivery to have uterine

rupture (OR, 0.26; 95% CI, 0.08-0.88). Multiple studies suggest a protective advantage with regard to uterine rupture rate if a woman has had a prior successful VBAC attempt. Multiple potential explanations exist, but the 2 most obvious are that a successful prior VBAC assures that (1) the maternal pelvis is tested and that the bony pelvis is adequate to permit passage of the fetus and (2) the integrity of the uterine scar has been tested previously under the stress/strain conditions during labour and delivery that were adequate to result in vaginal delivery without prior uterine rupture. Mercer *et al* found that the rate of uterine rupture decreased after the first successful VBAC, but that there was no additional protective effect demonstrated thereafter: the uterine rupture rate was 0.87% with no prior VBACs, 0.45% for those with one successful prior VBAC, and 0.43% for those with 2 or more successful prior VBACs ($p=0.01$)⁹. The signs and symptoms of uterine rupture largely depend on the timing, site and extent of the uterine defect. Uterine rupture at the site of previous uterine scar is typically less violent and less dramatic than a spontaneous or traumatic rupture because of their relatively reduced vascularity. Because of the short time available to diagnose uterine rupture before the onset of irreversible physiologic damage to the fetus, time consuming diagnostic methods and sophisticated imaging modalities have only limited use. Therefore, uterine rupture is most appropriately diagnosed on the basis of standard signs and symptoms. The consequences of uterine rupture during pregnancy depend on the time that elapses from the rupture until the institution of definitive therapy. Several studies have shown that delivery of the fetus within 10-37 minutes of uterine rupture is necessary to prevent serious fetal morbidity and mortality. Once the diagnosis of uterine rupture is established, the immediate stabilization of the mother and the delivery of the fetus are imperative.⁹

CONCLUSION

Uterine rupture is a rare but often catastrophic obstetric complication. A single Caesarean scar increases the overall rupture rate to 0.5%, with the rate for women with 2 or more Caesarean scars increasing to 2%. Poor antenatal and intranatal care, poor provision of health service and low socio-economic standard are the main factors contributing to uterine rupture. An obstetrician should be careful in monitoring the progress of labour in women with pregnancy with previously successful vaginal birth after Caesarean (VBAC) delivery to avoid the occurrence of a rupture of uterus.

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