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Sumia Bari

*Enam Medical College & Hospital, Dhaka, sumia\_bari@hotmail.com*

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## **Case Report-Maternal Death due to Rupture of the Uterus**

Dr. Sumia Bari

Assistant Professor (Gynae &Obs), Enam Medical College & Hospital, Savar, Dhaka, Bangladesh  
Email: [sumia\\_bari@hotmail.com](mailto:sumia_bari@hotmail.com),

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### **ABSTRACT**

#### *Objective*

To present the case report of a woman who died during her third delivery due to the mismanagement of her labour. The woman had had one previous caesarean section and tried for vaginal delivery with injudicious use of oxytocin, leading to a rupturing of the uterus and death.

#### *Methods & Result*

During a maternal death audit it was found that a 28-years old woman (para 2) Meena (name changed to maintain anonymity) had died. Meena had one previous normal vaginal delivery and a second delivered by caesarean section. In her third pregnancy she did not take have any antenatal check-ups with a midwife or a doctor although she visited community health care providers up to 38 weeks of gestation. On the day her labour started she developed lower abdominal pain in the morning and was in established labour by the evening. The community health worker attended but refused to deliver at home and advised to take her in the hospital. However, her parent called a village doctor, who tried to conduct the delivery and augment labour with intravenous oxytocics. Meena died due to haemorrhage and shock following ruptured of the uterus. During the audit it was found that Meena's parents, the community health worker and the village doctor lacked awareness, whilst the health professionals lacked knowledge to manage such a pregnancy and were unwilling to take responsible for the disastrous outcome.

#### *Conclusion*

The key to successful management of such cases is proper antenatal check-ups, counseling and planned delivery at a hospital which can offer emergency obstetric care. Legislation and regulation should be implemented to prevent such malpractice by village doctors with poor knowledge. There is a need for protocols to manage such high-risk pregnancies by the local health care providers as well as training to help recognise problems early in community settings.

### **Keywords**

Community Health Care Workers (CHW), Vaginal Birth After Caesarean Section (VBAC), Bangladesh

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## **Introduction**

Disruption in the continuity of all the uterine layers (Endometrium, Myometrium, Perimetrium) anytime beyond 28 weeks of pregnancy is known as rupture of the uterus. Prevalence varies widely from 1 in 2000 to 1 in 200 deliveries.<sup>4</sup> Improved obstetric care has decrease rupture from obstructed labour but there has been an increase in the prevalence of scar rupture following the increased incidence of caesarean section over the past years. Women who had previous damage to the uterine walls following D&C (dilation & curettage), manual removal of placenta or previous caesarean birth are more prone to experience such kind of obstetrics complication in their subsequent pregnancy and time of delivery.<sup>1</sup>

## **Case history**

During a maternal death audit in a rural area, it was found that Mrs. Meena, a 28 year-old mother of two children died during her third pregnancy, at 38 weeks of gestation during her delivery. Her first baby was delivered at home in the presence of a local Dai and the second one was delivered by caesarean section in a facility after trying at home. She became pregnant within one and half years of her last confinement, a pregnancy which was unplanned. She went for occasional antenatal check-ups to her local community health care providers (CHW) and did not have any birth plan. Recently she separated from her husband and resided in her very poor maternal house.

On the day of her death, she had some dull aching pain in the lower abdomen in the early morning. She was taken to the CHW who appeared to have ignored her complaints. She developed labour pain at night which was severe in nature and gradually increased in intensity. At first, her parents called the CHW to attend to her, however, as she found some difficulty in conducting the labour, she advised them to take her to the health care facility. Due to financial constraints and to avoid a C-section, her parents did not agree.

By this time Meena's father called a local village doctor, who had been practising in that community for 25 years and had plenty of experience in conducting deliveries. He assured them that he could conduct the labour at home without any complications for the mother and baby. According to Meena's parents' observation, the village doctor injected her intravenous fluid mixed with medicine from an amber coloured ampule. After that Meena became exhausted and continued shouting due to severe lower abdominal pain. She entreated God to help her but never asked her parents to take her to the health care facility to give birth (we must of course be careful not to blame her!). After a while Meena said something was giving way in her abdomen and she became calm, quiet and lost her consciousness. At that time the village doctor expressed that her labour was happening in an abnormal way and she needed to be taken to the health care facility. However, he charged them up to this point of her management.

Finally, Meena's father arranged for an ambulance to take her to the health care facility with the help of the CHW. However, on getting into the ambulance, the driver examined her and declared that there was no pulse, respiration and that she was severely pale with huge abdominal distension

and vaginal bleeding, so there was no need to take her to the facility as she was already dead. This was the history of poor Meena, who for various reasons could not reach to the health care facility and died ultimately, leaving two orphan children.

During the audit the CHW and the village doctor both blaming each other as the village doctor think that the CHW might have given her Prostaglandin (Misopristole) before he got there and the CHW said that the village doctor used Oxytocin in the saline which could have caused the rupture of uterus and death of the women. No one caught or punished for their mismanagement as there was no documentation and Meena's parent did not have a death certificate or filed a case against any one.

## Discussion

Rupture of the uterus is an important cause of maternal death during pregnancy and delivery. Uterine rupture can be broadly divided into spontaneous rupture, scar rupture, and iatrogenic rupture. Spontaneous ruptures occur in case of grand multiparae, multiple pregnancy, polyhydromnios, or due to obstructed labour. Scar rupture has increased significantly due to the liberal use of primary C-section. The incidence of lower segment scar rupture is about 1-2%, while that of classical is 5-10 times (express both as %).<sup>4</sup> Uterine scars resulting from operations on a non-pregnant uterus such as myomectomy, hardly ruptures.<sup>2</sup> Classical scars are likely to give way during later months as they are weak due to the (*only if placenta implants anteriorly*) implantation of the placenta over the scar and increased vascularity. If a lower segment scar ruptures, it usually occurs during labour.<sup>3</sup> Iatrogenic cause of rupture of uterus is a burning issue, as injudicious use of oxytocin or prostaglandins for the induction or augmentation of labour or abortion is increasing rapidly in parts of Bangladesh.

It is customary to distinguish between complete and incomplete rupture depending on whether the peritoneum coat is involved or not.<sup>4</sup> Rupture over the previous scar is almost always located at the site of the scar. The margins of a classical scar rupture are usually clean and look fibrosed. The rent over the lower segment may, however, extend to one or both sides and involve major branches of the uterine artery.

Diagnosis of the rupture of the uterus due to scar rupture can be made from the signs for example, dull abdominal pain over the scar area with slight vaginal bleeding, varying degree of tenderness on uterine palpation, and irregular or absent fetal heart sound (FHS) which is a late sign.<sup>4</sup> The features may not be always dramatic in nature, as in obstructed labour (silent rupture). When the rupture is complete, there is a sense of something giving way accompanied by acute abdominal pain and collapse. Clinically, the patient reveals features of exhaustion and shock. Abdominal examination reveals superficial fetal parts, absent FHS, absent uterine contour, two separate swellings, one from the contracted uterus and the other of fetal ovoid. Per vaginal findings will be recession of the presenting part with varying degrees of bleeding.

Preventive management requires proper assessment of the pregnant women with a history of a previous caesarean section. Formulation of a plan for delivery during antenatal check-ups and counselling is the priority. Furthermore, if vaginal birth is allowed after a Caesarean section (VBAC), the integrity of the scar should be reviewed from the history of previous C-section and the

underlying indication and assessment of the present pregnancy. Previous classical scar with placenta praevia makes the scar weak due to imperfect apposition as a result of quick emergency surgery and thrombosis of placental sinuses at that time and also leads to complications for further pregnancies.<sup>3</sup> Furthermore in prolonged or obstructed labour there is chance of infection which affects wound healing. The length of the gap between pregnancies (pregnancy spacing) is important as the wound needs to get enough time for sound *healing*. Preventive management also includes counselling during each antenatal visit considering the patient as high risk. Hospital delivery should be strongly advised if not made mandatory within a facility equipped to carry out laparotomy. The use of oxytocin or prostaglandins for induction or augmentation should be individualized as it increases the risk of rupture.

Prognosis of VBAC depends on the type of uterine wound. With previous classical section the wound is vulnerable to unpredictable rupture of the uterus. It may occur during pregnancy and labour raising the maternal mortality to the extent of 5% and perinatal mortality to 75%.<sup>4</sup> In lower segment scar rupture though maternal death is less but perinatal mortality is higher. In such cases immediate resuscitation should be carried out followed by laparotomy. Any of the three procedures may be adopted: repair of the rupture if the margin is clear; repair with sterilization if the family is complete; or hysterectomy to save the life of the mother.

## Conclusion

We can say that more awareness and appropriate training is needed among the CHWs regarding preventing maternal death due to uterine rupture as the consequences of VBAC. Family and support person must be well informed and counselled along with the women during antenatal check-up. As informal health care providers and the village doctors play a great role in the rural community in taking care of the pregnant mother and in conducting deliveries, they should get proper training on management of pregnancy and delivery on priority basis. Dissemination of necessary knowledge and creation of awareness among all the rural health care provider needs to increased. Government should have strict laws and legislation in their health policy and continuous monitoring should be implemented to avoid such kind of unusual maternal death due to rupture of the uterus.

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