“Near Miss” Maternal Mortality: Second Trimester Uterine and Intestinal Rupture Following Blunt Trauma

Venant N1, Rulisa S1, Makuani R1 and Small M*2

Abstract

Background: Simultaneous, traumatic rupture of both the uterus and intestinal viscous is a rare, potentially catastrophic event.

Case: A 25 year old parturient at 19 weeks gestation sustained blunt abdominal trauma after falling from a ‘motorcycle taxi’. Her initial physical assessment was unremarkable. An ultrasound performed on hospital day 2 demonstrated hemoperitoneum and fetal demise, suggestive of uterine rupture. At laparotomy, uterine and rectosigmoid rupture were identified and repaired.

Conclusion: Trauma is the most common cause of nonobstetric maternal mortality. We present a rare case of maternal survival following a near fatal, surgical and obstetric emergency.

Keywords
Trauma; Mortality

Introduction

Trauma is a leading cause of deaths globally and the main killer of adolescents and young adults [1]. International disparities exist with, approximately 74% of road accident deaths occurring in developing countries [1-3]. Vulnerable groups include pedestrians, individuals traveling in informal mass transit vehicles and those in motorized and non-motorized two-wheeled vehicles. Although males are more likely to die in road accidents than females, motor vehicle accidents are the most significant contributor to trauma-related maternal mortality [4]. Overall, trauma complicates 6-8% of all pregnancies and is the leading cause of non-obstetric maternal death in pregnancy [5].

Traumatic uterine rupture is rare, occurring in less than 1% of victims [4]. Intestinal rupture following trauma in pregnancy is extremely rare [6]. Maternal mortality from both conditions approaches 10-20%, while fetal mortality from traumatic uterine rupture is nearly universal [6-8]. In a report of pregnancy–related road injuries in Nigeria, Ekele described falls from commercial motorcycles as the most common cause of road accident. In their series, injury resulted primarily in lacerations and long bone fractures. They reported no cases of traumatic uterine rupture [9].

“Near miss” maternal mortalities are incidents that would result in maternal death if not for substantial medical intervention or chance [10]. We present a rare case of simultaneous uterine and intestinal rupture following blunt abdominal trauma. Case

A previously healthy, 25 year-old, G1P0 at 19 weeks gestation sustained direct abdominal trauma after falling from a “motorcycle taxi” that collided with another vehicle. She was initially seen in a private hospital and appeared clinically stable. Abdominal ultrasound performed one day later, demonstrated an intrauterine fetal demise (IUFD) and fluid filled abdominal cavity. She was transferred to Kigali University Teaching Hospital (CHUK) for tertiary care management. On arrival, she was alert, oriented, and hemodynamically stable. Glasgow Coma Scale was 15. No external bruises, abdominal distension, tenderness or recto-vaginal bleeding were noted.

On repeat obstetric ultrasound, the uterus was noted to be empty and surrounded by fluid. She was immediately transferred to the operating room for exploratory laparotomy. Operative findings included: 3 liters of hemoperitoneum, a 5 cm, fundal uterine rupture, and fragmented fetal parts in the abdomen. Further inspection revealed a retroperitoneal hematoma and recto sigmoid rupture. The recto sigmoid rupture was repaired via end colostomy and the retroperitoneal hematoma was expectedly managed. The patient remained in the hospital for 1 month due to complications of endometritis and wound infection.

Conclusion

Traumatic uterine rupture typically occurs at the fundus and results from severe injury. Uterine rupture is a significant cause of maternal mortality in Sub-Saharan Africa where the incidence ranges from 1:1000 to 1:400 deliveries and is responsible for 5-18% of maternal deaths [9]. In contrast, regions with lower overall maternal mortality rate report rates of uterine rupture of 1: 4000-1: 6000 deliveries [9-11].

Primary uterine rupture is typically associated with obstructed labor, prior uterine scar (e.g. cesarean section), and use of prostaglandins for labor induction in the setting of a prior uterine scar. Symptoms may include pain, vaginal bleeding (although bleeding may be contained in the abdominal cavity) and maternal hemodynamic instability. If fetal monitoring is performed, the first clinical sign of uterine rupture may be fetal heart rate abnormalities [12].

Spontaneous intestinal rupture during pregnancy is known to occur in the context of intestinal endometriosis and connective tissue disorders like Ehlers Danlos syndrome [13]. The vascular subtype (Type IV) of this collagen vascular disease is particularly dangerous due to arterial and hollow organ ruptures [14]. During labor, uterine rupture, severe vaginal and perineal injury, postpartum hemorrhage and colon rupture have been reported [14,15]. Our patient did not have family history or personal history suggestive of a connective tissue disorder.

This patient’s injury represents a rare, pregnancy-associated complication and highlights a global public health issue. She experienced a delay in diagnosis due to her seeming clinical stability.
despite a catastrophic injury. The delay likely occurred due to misinterpretation of physiologic changes in pregnancy.

The pregnant patient may display normal vital signs following hemorrhage until more than 15-20% of blood volume is lost [4]. Performance of a limited abdominal ultrasound on the day of admission may have prompted earlier intervention and referral. In this case, the follow-up obstetric ultrasound was performed one day after admission. The immediate evaluation by general surgery and obstetrical services at the tertiary care institution resulted in appropriate treatment of this surgical and obstetric emergency.

Our patient survived a near fatal, traumatic, event. Road accidents involving motorbikes disproportionately cause death or severe maternal morbidity/‘near miss’ maternal mortality [9].

References


Author Affiliations
1 Kigali University Teaching Hospital, Kigali, Rwanda
2 Obstetrics & Gynecology and Medicine, Division of Maternal Fetal Medicine, Duke University School of Medicine, Durham, NC, USA

Submit your next manuscript and get advantages of SciTechnol submissions
- 50 Journals
- 21 Day rapid review process
- 1000 Editorial team
- 2 Million readers
- Publication immediately after acceptance
- Quality and quick editorial, review processing

Submit your next manuscript at www.scitechnol.com/submission