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RESEARCH ARTICLE

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## DEATH AFTER TRAUMATIC UTERINE RUPTURE DURING PREGNANCY : A CASE REPORT AT THE TEACHING HOSPITAL OF ANGRE (ABIDJAN)

Koffi, S.V., Saki, T.C., Gbary-Lagaud, E., Kouakou-Kouraogo, R., Loba, O.P.J., Akobe, P., Houphouet-Mwandji B.C. and Adjoby, C.R

Obstetrics Gynecology Department of the Teaching Hospital of Angre (Abidjan)

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\*Corresponding author: Koffi, S.V.,

### ABSTRACT

Abdominal pelvic trauma is common during pregnancy. However, the occurrence of a uterine rupture during these traumas is a rare possibility but of extreme gravity, whose maternal-fetal prognosis will be conditioned by the speed of diagnosis, and management in a health structure with all the appropriate resources. We report in this observation a traumatic uterine rupture on a 32-week pregnancy of amenorrhea that resulted in the death of the gestant, in a context of delayed diagnosis and unavailability of emergency obstetric care.

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## INTRODUCTION

Uterine rupture is a serious obstetric complication, with high maternal-fetal morbidity and mortality, especially in the least medicalized countries, where it is one of the main causes of maternal mortality (Hofmeyr, 2005). Several direct and indirect factors increase the risk of uterine rupture, dominated by dystocia in underdeveloped countries, and caesarean scars in developed countries. However, although rare, uterine rupture during pregnancy can also occur during abdominal-pelvic trauma. These traumatic uterine ruptures account for about 10% of all cases of uterine ruptures (Malik, 2006). The etiologies of maternal trauma during pregnancy are almost similar to those of the general population (road accidents, domestic falls, physical assaults, firearms) (El-Kady, 2004 ; Tinker , 2010). However, pregnant women are more vulnerable to breaks caused by falls due to unstable walking resulting from pelvic ligament laxity and a change in the centre of gravity by the pregnant uterus. (Tinker, 2010; Biswas, 2004).

**Background :** This is a 21-year-old G2P0 patient, unemployed who was evacuated from a level I maternity hospital to the Teaching Hospital of Angre for in-utero transfer due to fetal heart rhythm

disturbances. The patient reportedly fell from her height with landing on the abdomen as she climbed the stairs at home. An obstetric ultrasound could not be performed in search of placental abruption. In front of a fetal bradycardia at 109 beats/min at the monitor, it was addressed to us. This is a patient whose pregnancy was not properly monitored, since she had not performed any assessment, despite her 4 prenatal consultations. She had no known medical-surgical history.

On his admission to the Teaching Hospital of Angre, about 4 hours after her fall at home, the examination revealed a state of hemodynamic shock with restlessness, profuse sweating, intense thirst, blood pressure and pulse were impregnable, the extremities cold, a frank cutaneous-mucous pallor, a sensitive abdomen with perception of the fetal parts under the skin, and absent heart sounds of the fetus. Faced with this clinical picture, it was concluded to uterine rupture with hemorrhagic shock, following a closed abdominal trauma on pregnancy of 32 weeks + 2 days. An indication of emergency laparotomy was made, pre-operative resuscitation was instituted, and blood products were prescribed, as well as an emergency hematologic check-up (CBC, Rhesus Blood Group, PT, TCA, Fibrinemia). The procedure began about 20 minutes after the patient was admitted. In peroperative, it was a complete fundic uterine rupture, with irregular margins, about 9cm long, reaching the fallopian tube, the round ligament and the right uterine pedicles

(figures 1 and 2). We noted a hemoperitoneum of 1200cc, where bathed an unmacerated dead fetus of 2500g. A subtotal hysterectomy of hemostasis was performed before the appearance of the lesions. The patient received only one transfusion of 450cc of erythrocyte concentrate intraoperatively. The course was marked by an instability of the hemodynamic status. The patient was unable to receive further transfusions due to unavailability of blood products. The patient's death followed, 2 hours after the intervention, in the resuscitation service.



NB: The arrows in red in the figures correspond to the area of the uterine rupture

Figures 1 and 2. Uterine rupture visualized intraoperatively

## DISCUSSION

Abdominal pelvic trauma affects approximately 6-7% of pregnancies, according to a study in the United States, and is the leading cause of

non-obstetric maternal death (Grossman, 2004). The causes and mechanisms of these injuries are essentially the same, although the proportion of cases attributed to each varies from site to site. In developed countries, road accidents are the main cause and account for up to 80% of trauma during pregnancy, followed by falls and assaults (Vivian-Taylor, 2012). In developing countries, on the other hand, physical aggression is the most common cause with 46% of cases, while road accidents and falls account for 30.2% and 14.3% of these injuries respectively (Njoku, 2013). However, very few studies are devoted to it. Domestic accidents are generally less serious, but the picture can be complicated when they occur with abdominal-pelvic trauma, so a direct impact on the distended uterus. This is the case in our observation, where it was a domestic fall in the stairs, with landing on the abdomen. The consequences are variable on the obstetrical side, which can threaten the life of the fetus, the mother, or both. This may be a threat of premature delivery, placental abruption, or more serious cases of uterine rupture as presented in our observation. Uterine rupture complicates 1.6% of abdominal pelvic injuries according to a study carried out in Nigeria (Njoku, 2013). This is a true obstetric emergency that must be diagnosed as soon as possible to allow for rapid management, because any delay could lead to the death of the mother. However, in the event of the mother's death, due to its accidental or fortuitous nature, it is not a maternal death. The diagnosis is usually easy, based on clinical examination, with signs of hemorrhagic shock, signs of hemoperitoneum, loss of uterine contours and palpation of the fetus under the skin. Ultrasound is invaluable, provided the operator is experienced. In this case, he can objectify the hemoperitoneum and the solution of uterine continuity. Delays in treatment can be the result of a delay in the consultation, but also a delay in the diagnosis. This was the case in our observation, where the patient consulted within a reasonable time (1 hour after her fall), but the diagnosis was made late (4 hours after the fall), so that she was admitted in a state of hemorrhagic shock.

The principles of managing a patient with a uterine rupture involve intensive resuscitation, the use of broad-spectrum antibiotics, emergency laparotomy and adequate post-operative care. Surgical options during laparotomy are repairing uterine lesions (hystero-graphy), or hemostasis hysterectomy which is the radical option. The choice of surgical procedure depends on the type and extent of the rupture, the patient's hemodynamic state, the future desire for motherhood, the availability of blood products and the surgeon's experience. The correct procedure in each individual case is the shortest and fastest procedure with the least blood loss and thus allows the patient to leave the operating table in the best conditions (Zia, 2012). Our patient underwent a hemostasis hysterectomy due to the severity of the lesions and the state of hemorrhagic shock. Indeed, the lesions were very severe with involvement of uterine pedicles, but especially the unavailability of blood products in our context. The fetal prognosis for traumatic uterine rupture is appalling, as fetal death is almost constant, unless immediate steps for delivery are taken (Zia, 2012). In our patient, fetal death was inevitable, as she was admitted late, in shock with the fetus and placenta expelled into the abdominal cavity. As for the maternal prognosis, it will also depend on the early management. Njoku, in a study in Nigeria on abdominal pelvic trauma during pregnancy, noted a single death, which was caused by a uterine rupture (Saving Mothers', 2011). Hence the exceptional nature of our observation. As in the Njoku series, the patient died as a result of her uterine rupture following the trauma, due to the delay of diagnosis, but also an insufficiency of blood products to allow a good post-operative resuscitation.

## CONCLUSION

Abdominal pelvic trauma during pregnancy is an important cause of morbidity and peri-natal and maternal mortality. Although rare, these accidents can be complicated by a uterine rupture which is extremely serious, and whose prognosis will depend on the early admission to an adequate health centre, but also, and above all, the early diagnosis and initiation of complete emergency obstetrical and neonatal care.

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