

# Obstetric Performance Following Previous Uterine Rupture: A Report of Three Cases

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## Abstract

Three cases are presented which highlight obstetric performance following previous uterine rupture. In two of the cases with previous fundal rupture, preterm recurrence of rupture occurred. The other patient with a previous lower segment rupture had an insidious scar dehiscence with no adverse maternal or perinatal outcome. These cases are reported to stimulate interest in additional research into the subsequent obstetric performance of patients with previous uterine rupture.

## Introduction

Rupture of the uterus remains a common obstetrical complication in underdeveloped countries and probably reflects the extent of access to obstetric care in these countries<sup>1</sup>. Until recently, available conventional treatment modalities for rupture uterus (hysterectomy, repair with sterilization) foreclosed to the possibility of subsequent pregnancy on the premise that such uteri are structurally unfit to either withhold the fetus to maturity or withstand the pressures of labour<sup>2,3</sup>. However, more and more obstetricians are preserving fertility<sup>4,5,6</sup> with the attendant risk of varying pregnancy outcomes. Literature review did not yield much on this new and expanding though risky management option, particularly in a developing country like Nigeria. These cases are reported to stimulate further reporting in this area.

## Case 1

A 28 year old para 2<sup>+0</sup> (none alive) Nursing Officer presented at the antenatal booking clinic at a gestational age of 17 weeks. She had no complaints. Her past obstetric history revealed two previous episodes of uterine rupture, managed at two different hospitals. The first rupture occurred four years earlier at a gestational age of 36 weeks following eight hours of spontaneous labour. At laparotomy, a fresh stillborn female infant was extracted and the uterine laceration was repaired. The fallopian tubes were not ligated. She was transfused 1.5 litres of blood and was discharged home on the 10<sup>th</sup> postoperative day.

She had a repeat uterine rupture in the following pregnancy at 35 weeks gestation. This was not preceded either by labour, trauma or manipulation. She had experienced sudden onset abdominal pain, dizziness and a sensation that 'something gave way'. Exploratory laparotomy revealed a dead fetus in the peritoneal cavity partially extruding from a fundal laceration. The laceration was repaired and the tubes were not ligated. She was transfused with 3 units of blood. The postoperative period was uneventful and

she was discharged on the 13<sup>th</sup> post operative day.

Her past gynaecological history revealed that she had a myomectomy performed one year before her first pregnancy. The indication was for huge uterine fibroids (18 weeks' size). The postoperative period was uneventful and she was discharged home on the 9<sup>th</sup> postoperative day.

On examination, she was of average build. Her vital signs were normal. The symphysio-fundal height was 19 centimetres. There were no tender areas in the abdomen. The patient was admitted for close monitoring till fetal viability could be assured. Her haematocrit was 35%, WBC 5200/cubic millimetre and platelet count 300,000/cubic millimetre of blood. The haemoglobin genotype was AA, and the Blood Group B Rhesus D negative. No anti-D antibody was detected in her serum. An ultrasound scan revealed no abnormalities. Placenta was fundal and the amniotic fluid adequate.

On the 14<sup>th</sup> day of admission, the patient had no complaints. Her vital signs were normal. The abdominal was soft. Fundal height was 21cm. Fetal movement was felt. About 3 hours later, attention was drawn to the patient who complained of severe abdominal pain, weakness, breathlessness and vaginal bleeding. On examination, she was pale and sweaty with cold extremities. The pulse rate was 140 per minute with small volume. The blood pressure was 80/40mm Hg. The abdomen was full and generally tender with guarding. A diagnosis of ruptured uterus was made. She was resuscitated and at exploratory laparotomy, the findings were 1.8 litres of haemoperitoneum, uterine fundal rupture about 3cm with placental tissue protruding. A female fetus of 300gms was found in the uterus. Estimated blood loss

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was 2.5 litres. The uterus was repaired and bilateral tubal ligation was performed. Management included transfusion with a total four units of whole, blood and infusion of six litres of crystalloids. Postoperative recovery was satisfactory and she was discharged home on the 9<sup>th</sup> day.

## Case 2

A 33 year old Para 0<sup>+2</sup> patient presented at a gestational age of 18 weeks for antenatal booking. She had no complaints. A review of her previous gynaecological history revealed that she had a myomectomy performed for infertility five years earlier. Two years after myomectomy, she had a spontaneous abortion at 18 weeks gestation. Abortion was incomplete and an evacuation of retained products of conception (ERPC) with blunt curettage was performed. There was no complication. The patient conceived again 2 years later. At 19 weeks' gestational age of this second pregnancy, she was admitted into the intensive care unit in a state of cardiovascular collapse. She was extremely pale and the abdomen was distended and tender. She was bleeding per vaginam. Exploratory laparotomy revealed haemoperitoneum 2.8 litres, free floating fetus in the peritoneal cavity and a transverse fundal rupture of the uterus. The rupture was repaired. The fallopian tubes were not ligated. Five units of blood with crystalloids were administered.

On examination, she was average sized, her vital signs were normal. The abdomen was enlarged and soft. The uterine size was compatible with her gestational age. Her PCV was 32%. Ultrasound scan estimate of the gestational age was also 18 weeks. No fetal malformations were noted and the placenta was posterior and corporeal.

The patient was offered admission because of her past history, which she refused. A decision to perform an elective caesarean section at 34 weeks was agreed with the patient. She thereafter defaulted from antenatal clinic only to return at 33 weeks gestation. She was immediately admitted. She had no complaints, her vital signs were normal and the uterine size was compatible with her gestational age. On the fourth day of admission, the patient complained of vague abdominal pain. Her vital signs were normal, but she had abdominal wall guarding. The fetal heart rate was 168 per minute. An ultrasound scan was not informative as it revealed normal findings.

A diagnosis of uterine rupture was entertained and she was immediately taken to the theatre for an emergency caesarean section. An incomplete fundal rupture with ecchymosis under the serosa extending to the left broad ligament was found. A live female infant with a birth weight of 2.1 kg was delivered through a lower segment incision. Apgar scores were 3 and 7 at 1 and 5

minutes after birth respectively. The fundal laceration was repaired and the uterine tubes ligated. Estimated blood loss was 700mls. She was not transfused. She made a quick recovery and was discharged with her baby on the 7<sup>th</sup> post operative day.

## Case 3

A 25 year old pregnant patient, Para 3<sup>+0</sup>, with two living children, was first seen at the clinic on 14<sup>th</sup> June 1996. She was unsure of her last menstrual period. Symphysio-fundal height measurement was 19 cm. Ultrasound dating confirmed 19 weeks' gestation. Past obstetric history revealed two previous caesarean sections for malpresentation at term in 1991 and 1993 respectively. Both infants were alive and well. Her third pregnancy was in 1995. This resulted in spontaneous uterine rupture at 37 weeks gestation. She was scheduled for an elective caesarean section at 38 weeks but went into spontaneous labour and the uterus ruptured before arrival at the hospital. She had an emergency laparotomy at which a rupture of the lower uterine segment caesarean section scar was found. The infant was partially extruded into the peritoneal cavity and dead. She recovered without incident after surgery.

The current antenatal course was uneventful until at 37 weeks gestation when, during elective caesarean section, the old scar was found to have undergone dehiscence again. A live male infant, with a birth-weight of 3 kg and Apgar scores of 6 and 8 at 1 and 5 minutes after birth respectively, was delivered. Estimated blood loss was 450mls. Postoperative packed cell volume was 32%. She was discharged home on the 6<sup>th</sup> postoperative day.

## Discussion

The causes of primary uterine rupture vary from region to region, reflecting the level of obstetric care. Spontaneous rupture of the unscarred uterus is a rare occurrence in the developed world<sup>1</sup>, while obstructed labour accounts for the majority of uterine rupture in the developing countries. Two of the three patients with previous uterine ruptures presented had previous myomectomy scars. Many authors place little premium on this factor as predisposing to uterine rupture in subsequent pregnancies<sup>2,9</sup>.

Time of repeat rupture of a pregnant uterus depends greatly on the site of the previous scar and placental insertion, which, could predispose to early rupture because of trophoblastic invasion of the scar<sup>4,5</sup>. Early ultrasound localization of the placenta vis-a-vis previous scar could thus be a useful prognostic factor. In the first two cases presented, ruptures occurred much earlier than at term when primary ruptures would

have been expected following classical caesarean section. The third case however conforms to findings by other authors<sup>5, 10</sup>, who found good future obstetric prognosis following previous rupture of lower segment caesarean section scars.

The sudden onset of symptoms, particularly when previous rupture occurred outside of the lower segment, recommends continuous in-patient

monitoring of these patients. While hysterectomy might not always be feasible nor desirable for both medical and socio-cultural reasons, repair of ruptured uterus with conservation of reproductive function puts a big strain both on the obstetrician and patient<sup>5</sup>. There is a need for prospective studies to help formulate clearer guidelines.

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