



■ Case Report

Spontaneous Mid-Term Uterine Rupture in a Woman with Previous Cornual Wedge Resection

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Abstract

condition. Although rare in the developed world, it remains a major cause of fetomaternal morbidity and mortality in the developing countries. The presented patient was a G2P0+1 woman on Highly active anti-retroviral therapy (HAART) with previous cornual wedge resection for cornual ectopic gestation who presented with lower abdominal pain and hypovolemic shock. Obstetric ultrasound done at presentation revealed features of uterine rupture. She had emergency exploratory laparotomy and repair of uterine rupture. Her post-operative period was uneventful and she was discharged on the 4th post-operative day. The clinical presentation of this rare case has demonstrated the significance of having a high index of suspicion for uterine rupture especially in women who have had a scarred uterus. Therefore, women who undergo cornual wedge resection should be counseled on the risk of uterine rupture in subsequent pregnancies and that these subsequent pregnancies should be booked in specialized centers with appropriate antenatal surveillance and care.

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Uterine rupture is a potentially
life-threatening fetomaternal

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Introduction

Rupture of the pregnant uterus is a rare event that is associated with severe complications that could result in a near miss or maternal

mortality as well as perinatal mortality. Ruptured uterus occurs when there is a disruption of the whole uterine muscle and the visceral peritoneum. It could occur due to blunt or sharp trauma, interventions that

suddenly increase intrauterine pressure or cause frequent or uncontrolled uterine contraction or during manipulation of pregnant uterus.^{1,2}

The incidence of uterine rupture is variable with a reported range of 0.3–1.7% for women with history of scarred uterus, and 0.03–0.08% in women with an unscarred uterus.³ Most uterine rupture occur in women with previous uterine surgical scar from classical caesarean section, history of uterine rupture, myomectomy with disruption of endometrium or uterine perforation.⁴ Other risk factors associated with uterine rupture include grandmultiparity in labour, injudicious use of oxytocics during labour, uterine anomalies, internal podalic version with breech extraction, external cephalic version, instrumentation like forceps application or vacuum extraction and unsupervised vaginal delivery.⁵

Spontaneous rupture of an unscarred uterus is rarely reported in the literature relative to those that resulted from trauma or obstetric events.⁶ Uterine rupture is considered spontaneous if it occurs without contractile activity of the myometrium and not due to direct or indirect trauma to the abdomen such as domestic violence, accidents, and uterine manipulation.^{2,5} Spontaneous rupture may rarely occur in unscarred uteri with uterine infection, adenomyosis, uterine or placental anomalies, sacculation of the entrapped retroverted uterus and cephalopelvic disproportion or as a manifestation of an underlying connective tissue disease.^{4,7–11} However, most cases of spontaneous uterine rupture are associated with a scarred uterus, usually due to prior caesarean section.^{12–14} Other predisposing factors include: previous dilatation and curettage, previous endometritis, previous pelvic radiotherapy, as well as previous uterine rupture.^{15–17}

This is a case report of spontaneous uterine rupture in a nulliparous woman with previous wedge resection of a cornual ectopic pregnancy at gestational age of 16weeks and 2 days.

Case Presentation

Mrs AT, a known HIV positive 39year old gravida 2 para 0 + 1 woman that booked for antenatal care. She presented to the

gynecological emergency unit, at a gestational age of 16weeks and 2 days, with complaints of lower abdominal pain and vomiting of 2 hours on the 31st of December, 2022.

The lower abdominal pain was sudden in onset, dull, aching, continuous, and initially localized to the suprapubic region but subsequently became generalized. The pain was rated with a score of 9/10 by the patient using the visual analog scale. There was no aggravating or relieving factor. The patient had two episodes of vomiting that contained recently ingested meals. There was associated generalized body weakness and progressive abdominal swelling.

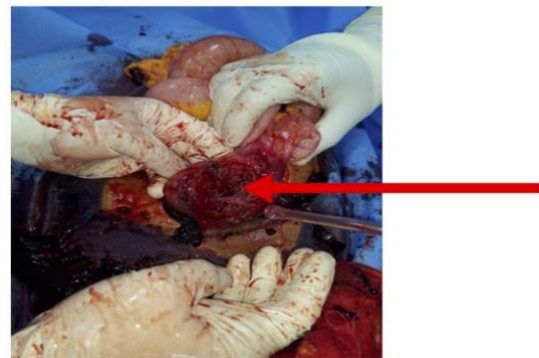


Figure 1: The right cornual rupture of uterus

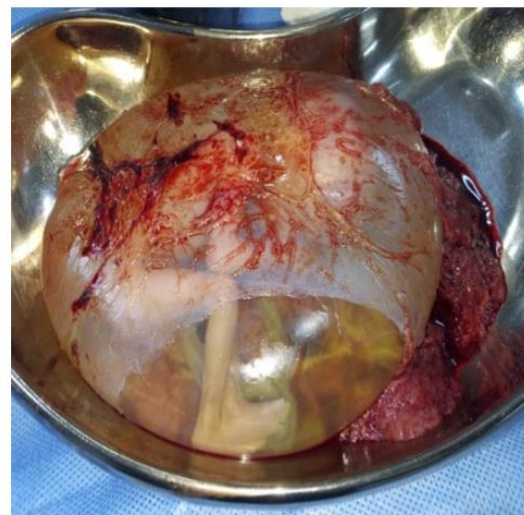


Figure 2: The abortus within the intact amniotic sac.

There was no history of abdominal trauma or history of fall or attempt at terminating her pregnancy. She had a pelvic ultrasound scan at gestational age of 6 weeks that confirmed intrauterine gestation and attended one

antenatal clinic visit after booking and had no complaint. She was diagnosed with HIV in 2015 and was regular on highly active antiretroviral drugs (Tenofovir, Lamivudine and Dolutegravir). Her latest viral load in February 2022 was 121copies/ml. There was past history of emergency laparotomy and right cornual wedge resection done on the 5th November, 2021, on account of ruptured right cornual ectopic pregnancy at gestational age of 10wks and 1day. In addition, a solitary pedunculated right cornual fibroid that measured 4cm X 3cm was removed. She did not have history of any other medical conditions.

The general physical examination showed a conscious and alert woman, in painful distress with conjunctival pallor. The pulse rate and blood pressure on admission were 108 beat/minute and 80/60mmHg, respectively, while the respiratory rate was 44 cycles per minute. The abdomen was distended, moved with respiration and there was generalized abdominal tenderness with guarding, it was difficult to palpate the intra-abdominal organs due to the abdominal tenderness. The vaginal examination revealed a closed cervix with minimal vaginal discharge. The bedside abdominopelvic ultrasound scan showed increased free intraperitoneal fluid in the peri-hepatic space, Morrison's pouch, both para-colic gutters and pelvic cavity. An intrauterine fetus was seen within the uterus. However, a hypo-echoic line was seen extending from the placenta into the fundal myometrium suggestive of uterine rupture. The pack cell volume was 25%. A diagnosis of uterine rupture complicated with hypovolemic shock was made.

Resuscitation was commenced by infusing one liter of intravenous 0.9% normal saline fast and urethral catheter was passed to monitor urinary output. A written consent for emergency laparotomy was obtained after explaining the diagnosis and need for surgery to the patient. Under general anesthesia, the abdomen was cleaned and draped for laparotomy. A midline incision was made to gain access into abdominal cavity. The intra-operative findings include dense adhesions between the anterior abdominal wall, omentum, bowel and uterus; about 8cm linear rupture extending from the right cornual edge to the middle of the uterine fundus (Figure 1); about 4cm segment of the bowel was attached

to the edge of the ruptured part of uterus; haemoperitoneum of 1.5 litres; and an intact gestational sac was extruded into the peritoneal cavity (Figure 2). The left fallopian tube was normal and both ovaries were seen and normal. The left tube was absent.

The foetus was extracted en-sac (Figure 1 & 2), the haemoperitoneum was suctioned, adhesiolysis was done and uterus repaired in two layers with polyglactin 910 no1 sutures. Hemostasis was secured. The patient was transfused with four units of cross-matched whole blood. The immediate post-operative management was uneventful, and her pack cell volume was 28%. She commenced fluid diets on the first postoperative day and solid diet on the second post-operative day. The findings at surgery and its implications, risk of uterine rupture in another pregnancy, the need for good health seeking behavior preferably at a tertiary Centre were explained to patient and her spouse, the discussion on contraception and future reproduction were also initiated. She was discharged home on the 4th postoperative day for follow-up at the gynecological clinic after two weeks

She was seen at the gynecological clinic follow-up visit; her wound had healed with primary intention. She was counseled again on the extent of surgery, the implications for future reproduction and the need for contraception to allow for adequate wound healing. The risk of uterine rupture in another pregnancy was discussed with the patient including encouraging the woman to register her future medical care at a tertiary health facility. She was referred to the family planning clinic and was discharged from the follow-up clinic.

Discussion

This is a rare case of spontaneous uterine rupture of a scarred uterus in second trimester that was promptly managed following a high index of suspicion and diagnosis. In some situation, the symptoms and signs may not be classical, and this could potentially delay diagnosis, treatment and sometimes fatality could occur.^[18]

The patient presented with some classical symptoms that necessitated further investigations to clinch the diagnosis. It is important to counsel women who are at risk

of spontaneous rupture to promptly present whenever they suspect any related symptoms such as sudden onset abdominal pain, new onset vomiting with or without bleeding per vagina as seen in the index case. The risk of scar rupture during a subsequent pregnancy is strongly related to the location of the previous scar, with upper uterine scars tending to rupture more easily and more often prior to the onset of labour than lower uterine segment scars^{12,13,19}. This patient had scar rupture in the fundus of the uterus at the site of previous cornual ectopic pregnancy that was resected and the uterus repaired. The increased susceptibility of fundal uterine rupture may be attributable to the attenuation of uterine musculature, poor connective tissue at the site of repair, a deficiency in the reconstruction of the uterine wall or tissue damage due to electro-surgery especially for laparoscopic procedures.^{8,15} Report from studies have shown that uterine rupture following cornual resection cannot be predicted or prevented and data on the absolute risk of uterine rupture is still unknown.^{20,21}

It is recommended that women with scarred uterus secondary to cornual resection must be counseled on the risk of uterine rupture in subsequent pregnancy and advised on the warning symptoms and signs as well as the benefit of antenatal surveillance and care.²² Symptoms of uterine rupture may range from severe (abnormal fetal heart rate, abdominal pain, bleeding, hypovolemic shock) to subtle and non-specific features like vomiting and generalized body weakness as seen our patient.¹⁵ Some cases of uterine scar rupture may be asymptomatic and are only detected incidentally at caesarean section. The most common ultrasound feature of uterine rupture is evidence of herniation of membranes through uterine defect.²² It is possible to visualize herniation of fetal parts – fetal limbs or umbilical cord – through the ruptured portion of previous wedge resection scar on ultrasound.⁸ However, this membrane could rupture resulting into leakage of fluid and haemoperitoneum^{23–25}. Our patient had evidence of uterine scar rupture on ultrasound and haemoperitoneum. In patients presenting late, there may be an empty uterus, expulsion of fetus and placenta from uterine cavity and absence of fetal heart activity.^[23,26] Serial scans of cornual scar region with measurement of scar thickness has been

suggested to predict the presence of scar dehiscence^{4,8,15}, although there is no agreed standardized cut-off values similar to the evaluation of lower segment scar measurement.²⁷ An emergency scan prompted by clinical symptoms in the index case enabled recognition of the defect in the cornual wedge resection scar site on the uterine fundus. A high index of suspicion of uterine scar rupture after eliciting a history of previous wedge resection helped the team to quickly make diagnosis after ultrasound and an urgent laparotomy was done for the patient.

This patient had uterine repair at laparotomy. The other management options include uterine repair with bilateral tubal ligation and hysterectomy. We repaired the uterus in this patient because she was nulliparous and desirous of pregnancy in the future. Another reason for our surgical decision is because the patient had healthy looking left fallopian tube. She was therefore counseled to register at a specialized health facility, register for antenatal care after her first missed period and present early for any ominous sign that is suggestive of a repeat episode of her complaint.

The role of HIV infection in patients on anti-retroviral therapy as it affects process of wound healing is not clearly defined in literatures.^{28–32} The contribution of HIV to poor wound healing and subsequent weakness leading to uterine rupture in this case cannot be substantiated. Therefore, further studies are required.

In conclusion, we reported a rare case of spontaneous uterine scar rupture in a woman that previously had cornual wedge resection for cornual ectopic gestation. We highlighted the importance of high index of clinical suspicion and role of ultrasound to make prompt diagnosis and institute emergency management.

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