

CASE REPORT**Sonographic Detection of Uterine Perforation in Surgical Abortions: Case Report From a Developing Country.****Authors**

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Abstract

Uterine perforation is a rare major complication of surgical abortion which can be detected by ultrasound. In the last four decades, over 70% of case reports on uterine perforation in surgical abortions were from developing countries. Yet ultrasound was rarely used in detecting uterine perforation. This case report presents two cases of uterine perforation in surgical abortions which were detected by ultrasound prior to laparotomy. In the first case, a 34-year old woman was referred to our facility as a case of hypovolaemic shock following termination of pregnancy. An ultrasound examination performed to exclude an intra-abdominal abscess collection revealed a 1.2cm defect in the fundal region of the uterus with extrusion of abdominal contents into the endometrial cavity through the defect. In the second case, a 31-year old woman presented with a history of vomiting, abdominal pain, abdominal distension and absolute constipation after undergoing an evacuation of the uterus for a spontaneous abortion at 7 weeks' gestation. Transabdominal ultrasound showed a defect of 1.4cm wide at the fundus of the uterus, with a structure extending from the abdominal cavity through the defect and into the endometrial cavity. It also showed distension of multiple bowel loops within the abdominal cavity. Sonographic detection of uterine perforation led to appropriate management in both cases. In developing countries, where the incidence of major complications of abortion is still very high, utilizing ultrasound can be helpful in detecting complications such as uterine perforation.

Keyword: Ultrasound, surgical abortion, uterine perforation, developing countries

Introduction

Uterine perforation is a rare major complication of surgical abortion with a worldwide incidence rate of up to 0.4% of surgical abortions (1, 2). It is however believed to occur in up to 3.6% of surgical abortions in developing countries (3). As a life-threatening complication of surgical abortion, effective diagnosis of uterine perforation is crucial in expediting appropriate management.

Experienced surgeons may detect uterine perforation during surgical abortions if they observe signs of severe pain, suspect that the instrument has passed beyond the expected depth of the uterine cavity without resistance, or extra-uterine structures are visualized in the vagina (4). However, some cases of uterine perforation go undetected during surgical abortions, which tend to prolong morbidity with increased risk of death. Again, related complications such as bowel injury and incarceration may not be detected until laparotomy is performed.

Ultrasound is one of the imaging modalities that can improve early detection of uterine perforations resulting from surgical abortions. However, while complications of abortion mostly occur in developing countries (5), ultrasound is rarely reported as a diagnostic tool for detecting uterine perforation in these settings. In a recent systematic review which assessed uterine perforation with associated bowel injuries from surgical abortions, it was observed that over 70% of reported cases in the last 4 decades were from developing countries (6). Yet, none of them had utilized ultrasound in the diagnosis and management of uterine perforation. This is in contrast with cases reported from developed countries, where over 75% had utilized ultrasound in the diagnosis and management of uterine perforation (6).

In demonstrating the value of sonographic imaging for the early detection of uterine perforations in a developing country, we present two cases that were diagnosed by transabdominal ultrasound in a tertiary hospital in Ghana.

Case 1

A 34-year old female was referred to our facility as a case of hypovolaemic shock following termination of pregnancy. The patient, P1A + 5TOPs, presented to a peripheral facility after a month's history of bleeding per vaginam. She had allegedly discovered she was pregnant after a 3-month period of amenorrhoea and had attempted an abortion by self-administered 1000µg of misoprostol per vaginam. She had consequently been bleeding per vaginam over a one-month period. Five days prior to presentation at the peripheral facility, she had developed a fever associated with dizziness, palpitations, easy fatigability, general malaise and an offensive bloody vaginal discharge.

On presentation at the peripheral facility, an impression of incomplete abortion with hypovolemic shock was made. The patient was transfused with 2 units of blood, IV antibiotics and fluid resuscitation were commenced and a manual evacuation of the uterus (EOU) was performed. Post-EOU the patient remained restless and confused and was subsequently referred to our facility for further management. At presentation at our facility an impression of septic abortion with corrected severe anemia was made. Examination revealed that the patient had a BP of 110/90mmHg, a pulse rate of 140bpm, with generalized abdominal tenderness and guarding. The cervix was closed; there was no active bleeding or discharge, but cervical excitation tenderness

was positive. An ultrasound examination performed with a Samsung SONOACE R7 (Samsung Medison; Seoul, South Korea) to exclude an intra-abdominal abscess collection

revealed an endometrial collection with mobile internal echoes and echogenic foci measuring about 16mls (Figure 1).

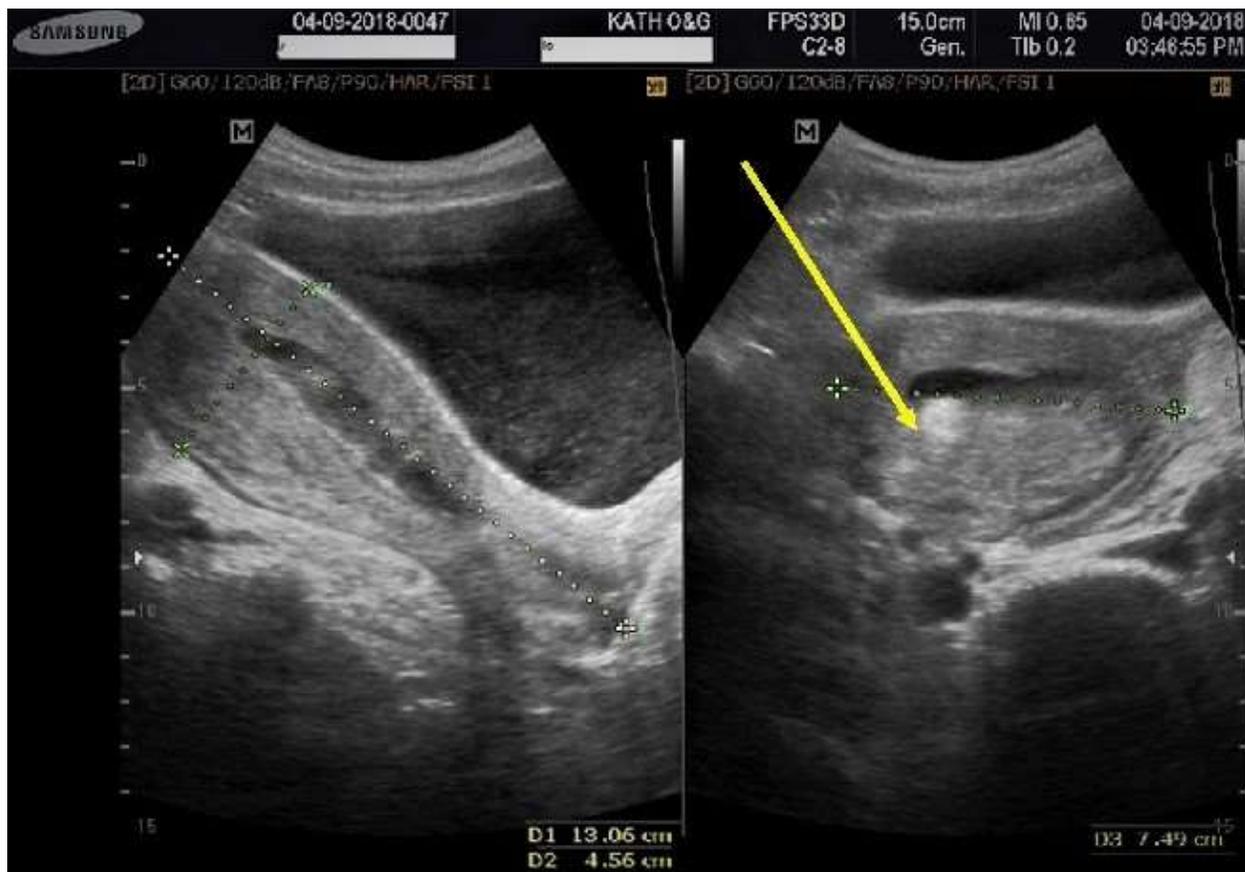


Figure 1: Fluid collection with internal echoes in the uterine cavity. There is also an echogenic focus showing (see arrow).

The additional finding was a 1.2cm defect in the fundal region of the uterus with extrusion of abdominal contents into the endometrial cavity

through the defect (Figure 2). No fluid collections were noted in the abdominal cavity.

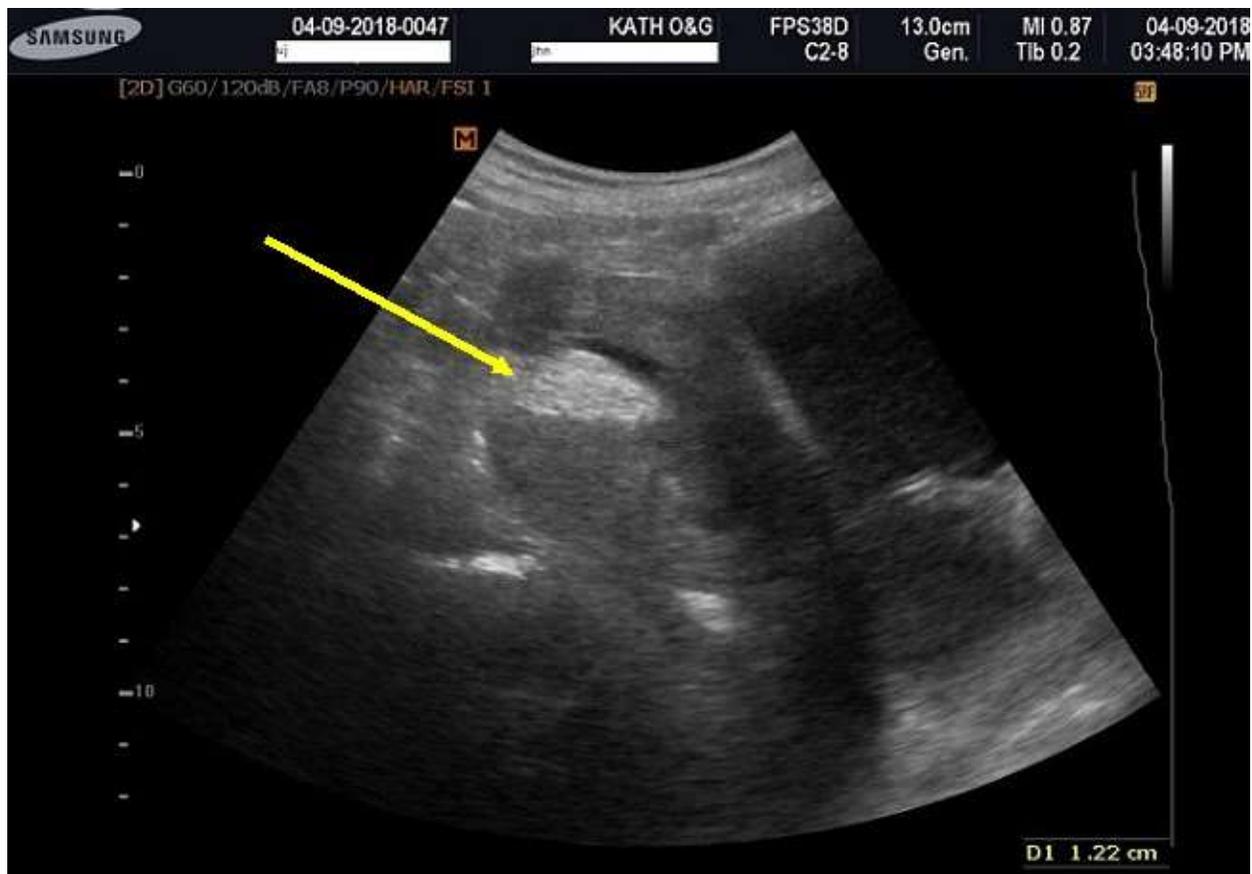


Figure 2: Defect in the posterior wall of defect representing perforation (see arrow).

Emergency laparotomy was performed to repair the uterine defect. Intra-operatively, there was 2 x 3cm perforation at the posterofundal aspect of the uterus with ischemic epiploic omentum of the sigmoid colon herniating into the endometrial cavity. The omentum was removed and excised, the edges of the perforation were refreshed, and widened and suction curettage performed through the defect. About 30mls of pus and retained products were drained. The uterine defect was subsequently repaired. Post-op condition of the patient was satisfactory.

Case 2

A 31-year old P4A presented with a week's history of vomiting, abdominal pain, abdominal

distension and absolute constipation 2 weeks after an EOU for a spontaneous abortion at 7 weeks' gestation. Gynecological examination revealed that there was blood at the introitus, a non-tender uterus with an open cervical os about 1cm. Laboratory findings were not significant.

Transabdominal ultrasound showed a defect about 1.4cm wide at the fundus of the uterus (Figure 3). A tubular structure with gut signature was noted extending from the abdominal cavity through the defect and into the endometrial cavity (Figure 4). There was distension of multiple bowel loops within the abdominal cavity (Figure 5).

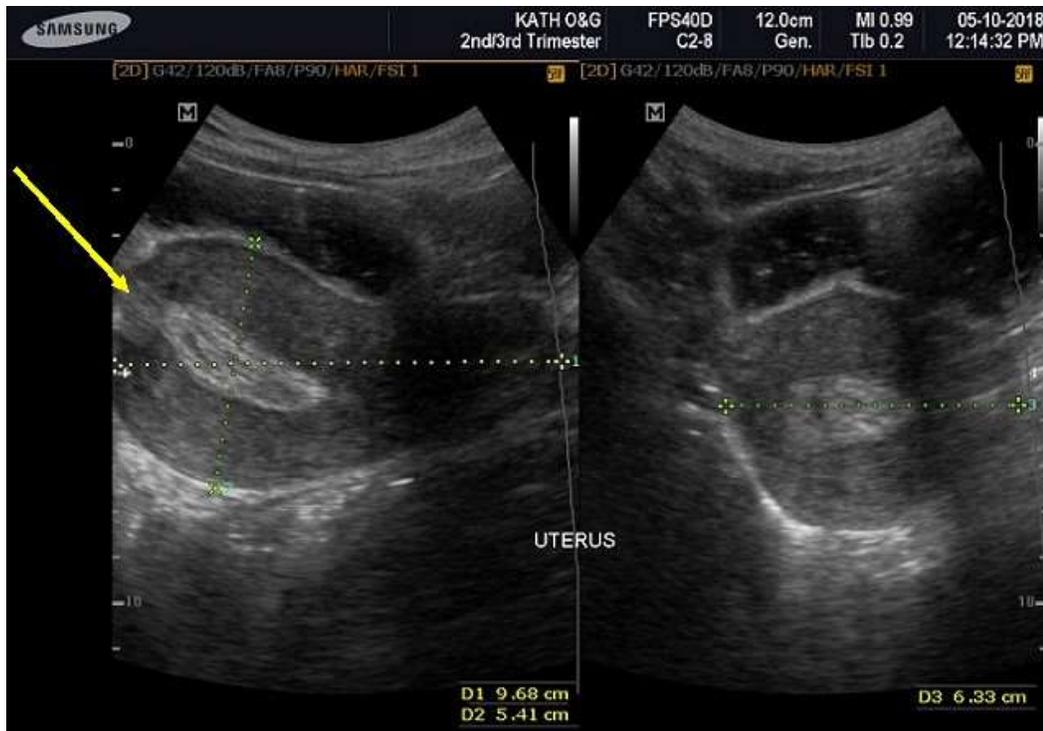


Figure 3: Midsagittal view of defect at the aspect of the wall, representing perforation.

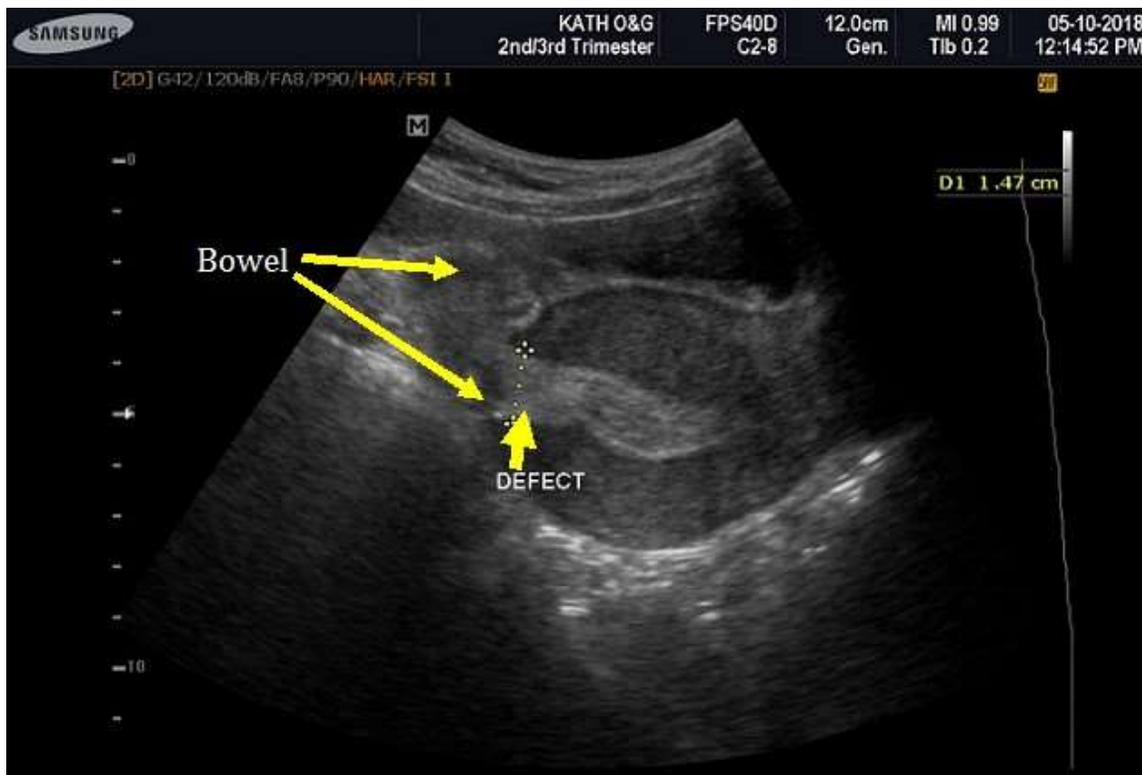


Figure 4: Short axis view showing bowel herniation into the uterine wall defect.



Figure 5: Dilated loops and bowel as secondary finding of uterine perforation.

Laparotomy revealed a 1cm fundal perforation with about 3cm of small bowel pulled through it. The herniated bowel loop was necrotic and perforated with distention of the proximal small bowel. A resection and anastomosis of the small bowel was performed and the perforation at the uterine fundus was repaired. There were no post-operative complications.

In both cases ethical approval was obtained from the local ethics committee for publication. In addition, informed consent was obtained from the patients.

Discussion

This is a case report on uterine perforation as a complication of surgical abortion from a

developing country that was detected by sonographic examination prior to laparotomy.

In the first case, the indication for ultrasound was to rule out incomplete septic abortion or intra-abdominal abscess. Evidence of incomplete septic abortion was detected by ultrasound as a fluid collection with mobile internal echoes. However, the detection of a uterine wall defect with a herniation of colonic epiploic omentum was an incidental finding which influenced the course of management.

In the second case, the post-abortion presentation of abdominal pain and distension is a known indication for ruling out uterine perforation (7). Therefore, sonographic examination was an appropriate management

decision that led to the detection of the uterine wall defect which was consistent with perforation.

In both cases, the diagnosis of uterine perforation was missed during surgical abortion until patients presented with clinical symptoms afterwards. Timely sonographic examination contributed to the diagnosis and management.

Surgical abortion is a very common procedure many women undergo because of failed pregnancy or voluntary termination of pregnancy. Developing countries have the highest incidence of abortion complications because of the high rate of unsafe abortions, with about seven million women admitted in hospitals annually as a result of complications from unsafe abortion (5). This is in contrast with developed countries where abortions are relatively safe, with only a 2% incidence of abortion complications which are generally regarded as minor complications (8).

Ultrasound imaging is regarded as an integral component of abortion management in developed countries through the routine sonographic confirmation of uterine position, gestational age, location of pregnancy and indication for surgical abortion. In the United States, ultrasound imaging prior to having abortion is mandated by law in at least 10 states (9). Between 1997 and 2009, onsite ultrasound prior to surgical abortion increased from 66% to 99% in developed countries (10).

The practice of having an ultrasound prior to surgical abortion apparently contributes to the lower incidence of abortion complications in developed countries. As in developed countries, where most women are educated on the importance of having ultrasound prior to abortion (10), a policy of educating women in developing countries could be another means of improving the safety of abortion, whether surgical or medical. For instance, in view of the

currently wide availability of abortion drugs such as misoprostol, women could be educated to have an ultrasound and seek medical advice as to whether medical abortion would be appropriate for terminating their pregnancy.

In addition to having pre-abortion ultrasound, evidence has shown that ultrasound-guided surgical abortions are generally safer than without ultrasound guidance with reduced the risk of uterine perforation (11). In a randomized control trial by Acharya et al (11), complications of abortion were significantly reduced under ultrasound-guidance (<4%) in comparison to without ultrasound guidance (>15%). Another related randomized control trial showed that the incidence of uterine perforation was 0% with ultrasound guidance and approximately 3% without ultrasound guidance (12). While some may argue that routine ultrasound-guidance for surgical abortions may not be practicable from the economic standpoint in developing countries, it is worth noting that the annual cost of treating major complications of abortion in developing countries is over 500 million US dollars (13), including 200 million dollars on post-abortion care (14). Ultrasound-guided surgical abortions may contribute to minimizing the incidence of morbidity and hospitalization which may justify the investment in ultrasound-guided surgical abortion.

This case report is an example of an alternative approach, where ultrasound imaging could be made an initial diagnostic tool in symptomatic patients. This can be made available in all referral centers in developing countries for post-abortion care for the early detection of major complications such as uterine perforation.

In this case report, transabdominal ultrasound provided accurate findings that were in agreement with surgical findings. However,

the limitation of transabdominal ultrasound is the need for adequate urine in the bladder to serve as an acoustic window. The other limitation of transabdominal ultrasound is the problem of poor image quality in overweight or obese patients. The alternative is the use of transvaginal approach which was not necessary in our two cases because of the adequate

information provided by transabdominal ultrasound.

In conclusion, ultrasound is highly useful for the detection of uterine perforation resulting from surgical abortions. it should therefore be utilized in post-abortion care in developing countries.

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