UTERINE PERFORATION FOLLOWING MANUAL VACUUM ASPIRATION FOR A FIRST TRIMESTER INCOMPLETE ABORTION: A CASE REPORT

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ABSTRACT

BACKGROUND: Uterine perforation, though rare, is a serious complication of intrauterine procedures such as Manual Vacuum Aspiration (MVA) used for managing first-trimester incomplete abortion. It is associated with significant morbidity and potential mortality, necessitating prompt diagnosis and intervention. Accurate preoperative assessment and careful procedure execution are critical in minimizing risks. We report here a case of uterine perforation following 1st MVA for incomplete abortion.

CASE PRESENTATION: A 24-year-old gravida III, para I woman presented with vaginal bleeding of 8 hrs following 3 months of amenorrhea. The patient experienced acute abdominal pain and vomiting post-procedure, with ultrasound revealing a 1 cm uterine defect. Emergency laparotomy was done under spinal anesthesia and a 2 cm perforation was detected at the vesico-uterine junction. The defect was repaired in 2 layers. The patient had a smooth postop course and was discharged improved.

CONCLUSION: This case highlights the necessity for meticulous pre-procedure assessment to determine uterine position and the importance of skilled healthcare providers performing MVA to minimize the risk of uterine perforation. Early diagnosis and timely management are crucial to avoid maternal catastrophes.

KEYWORDS: Uterine perforation, Manual vacuum aspiration, Incarcerated omentum

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INTRODUCTION

Uterine perforation is a rare but significant complication that can occur during intrauterine procedures, including Manual Vacuum Aspiration (MVA) used for the management of first-trimester incomplete abortion. This condition is associated with substantial morbidity and potential mortality, requiring prompt recognition and intervention to prevent severe outcomes[1].

The incidence of uterine perforation varies widely in the literature, ranging from 0.1% to 1.3% for diagnostic and therapeutic procedures, respectively[1]. Several factors contribute to the risk of uterine perforation, including multiparity, previous uterine surgery, abnormal uterine shape and position, advanced gestational age, and the experience level of the healthcare provider performing the procedure[2,3]. Additionally, a proper physical examination, including a bimanual examination to assess the position and size of the uterus, is crucial in minimizing the risk of perforation[4].

The pathophysiology of uterine perforation involves the accidental breaching of the uterine wall by surgical instruments, which may cause injury to adjacent organs such as the bowel and bladder, leading to complications like peritonitis and hemorrhage[3]. The clinical presentation of uterine perforation can vary but typically includes acute abdominal pain, vaginal bleeding, and signs of peritonitis[2].

Early diagnosis of uterine perforation is crucial for effective management. Ultrasound is often the first-line imaging modality used to confirm the diagnosis, although a CT scan may be required for a more detailed assessment of intra-abdominal injuries[4].

Management of uterine perforation typically involves immediate stabilization of the patient, surgical repair of the perforation, and antibiotic therapy to prevent infection[5]. Preventive measures include adequate training and experience of healthcare providers and careful preoperative assessment to identify high-risk patients[2,4].

Case Presentation

A 24-year-old G-III P-I abortion one woman presented to Adama Teaching Hospital with vaginal bleeding of eight hours after amenorrhea of 3 months. She had passage of tissue with the bleeding. The pregnancy was wanted and planned. There was no history of interference. She had no previous history of curettage or uterine surgery.

On physical examination, the patient was in pain with a blood pressure of 100/70 mmHg, pulse rate of 78 beats per minute, respiratory rate of 22 breaths per minute, and temperature of 36.6°C. She had pink conjunctiva and non-icteric sclera.

She had a flat, non-tender abdomen and the uterus was non-palpable abdominally. The cervix was open and admitted one finger. There was tissue at the cervical os with bleeding. However, a bimanual examination was not performed by the healthcare professional who evaluated her first. Examination in the other systems was unremarkable.

The laboratory results were white blood cell count (WBC) of 15,060, hemoglobin (HGB) of 13.1 g/dL, and platelets (PLT) of 324,000/microlitre. Blood group/Rh was A positive.

With a diagnosis of incomplete abortion, Doxycycline 200 mg orally stat and Diclofenac 75 mg intramuscular injection were given and the patient was prepared for evacuation. The vagina was cleaned with povidone, and then a bivalve speculum was used. The bleeding was mopped with gauze, and the anterior lip of the cervix was grasped with a tenaculum. The tissue at the cervical os was removed with sponge forceps. Subsequently, a Manual Vacuum Aspirator with cannula size of number twelve was used to evacuate the uterus. During the procedure, resistance developed against taking out the cannula. Following the resistance, the nurse discontinued the procedure and consulted the Gynecology and Obstetrics resident.

Upon evaluation by the resident, the patient complained of severe crampy abdominal pain and had three episodes of vomiting. On physical examination, the patient was in pain with stable

vital signs. She had mild abdominal tenderness and bright red vaginal bleeding with visible fatty tissue coming out of the cervix.

Immediately, a bilateral intravenous line was opened, and an abdominal ultrasound and erect abdominal X-ray were performed. There was a visible 1 cm uterine defect in the lower segment with an echogenic mass protruding through it, extending down to the cervical canal with a clear fundal outline of the endometrium. There was no cul-de-sac collection, and the adnexa were free. The abdominal X-ray showed no sign of viscus perforation. With an impression of a perforated uterus with incarcerated omentum, the patient was prepared for laparotomy.

Under spinal anesthesia, a midline sub-umbilical incision was made to enter the abdomen. There was a retroverted uterus with a 2 cm by 2 cm anterior uterine segment perforation at the vesico-uterine junction and no hematoma or visible transurethral catheter. There was no active bleeding, no peritoneal collection, and the edges of the perforated site were clean. Upon peritoneal entry, no incarcerated omentum was identified, despite its prior suggestion on ultrasound. It is possible that the omental segment was dislodged during uterine manipulation. Intraoperative exploration revealed no evidence of omental ischemia. Otherwise, the bilateral tubes and ovaries appeared healthy. The perforated segment was repaired in two layers, and the patient was transferred to the regular ward with stable vital signs. She had a smooth postoperative course and was discharged on the third day.

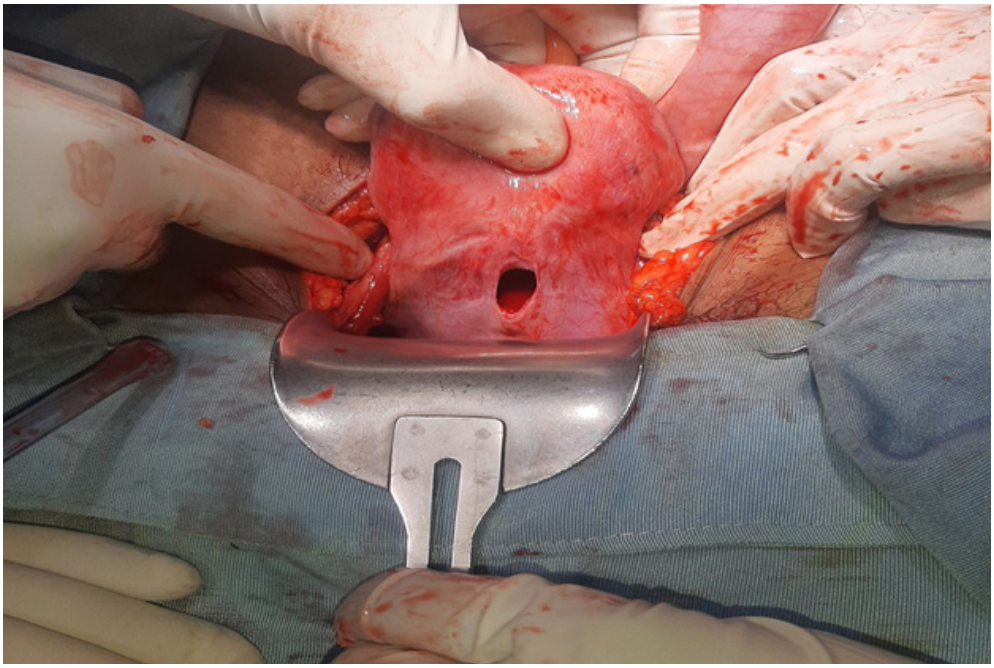

Figure 1 Anterior lower segment uterine perforation as a complication of manual vacuum aspiration for first-trimester incomplete abortion.

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The patient was discharged with instructions on post-abortion care, follow-up visits, family planning, and future pregnancy planning, with the recommendation of a caesarean section as the subsequent mode of delivery. After one week, the patient visited a gynecology referral clinic, and the post-operative course of the patient was smooth.

Discussion

Our case of uterine perforation following MVA for first-trimester incomplete abortion shares similarities and differences with findings reported in the literature.

In our case, the patient was a gravida[3], para[1], which aligns with the identified risk factors such as multiparity mentioned in the literature. Zorilă et al.[1] noted that uterine perforation rates vary widely and highlighted risk factors including multiparity, previous uterine surgeries, and operator inexperience. Ngatia[6] also emphasized that the risk is higher in cases where less experienced providers perform procedures.

The clinical presentation of our case is consistent with the typical symptoms described in the literature, such as acute abdominal pain, vaginal bleeding, and signs of peritonitis[2]. The patient's sudden onset of severe pain and the presence of bright red vaginal bleeding with fatty tissue are classic indicators of uterine perforation, which are similar to the findings reported by Zorilă et al.[1] and Costumbrado et al.[7].

Our use of ultrasound to identify a uterine defect and the subsequent use of abdominal X-ray is in line with the diagnostic approaches discussed in the literature. According to the Royal College of Obstetricians and Gynaecologists[4], ultrasound is the first-line imaging modality, and CT scans can provide further detail if necessary. In our case, the ultrasound findings of a 1 cm defect in the lower uterine segment with an echogenic mass protruding through it, extending to the cervical canal, were crucial for diagnosis.

The management of our patient included immediate stabilization with IV fluids, surgical repair of the perforation, and antibiotic therapy to prevent infection. These steps are consistent with the management protocols outlined by the American College of Obstetricians and Gynecologists (3) 2016 and the World Health Organization[5] 2018. The prompt laparotomy and repair of the perforated segment ensured the patient's recovery and stability, matching the recommended practices for handling such complications.

Preventive measures highlighted in the literature, such as the adequate training of healthcare providers, the use of ultrasound guidance, and careful preoperative assessment of high-risk patients, were underscored by the case findings[4,5]. The importance of these preventive strategies is evident, as they could potentially reduce the incidence of such complications in future cases.

Preventive measures, including comprehensive patient assessment, provider training, and the potential integration of ultrasound guidance, can collectively reduce the incidence of uterine perforation. The broader application of these strategies within clinical practice holds promise for enhancing patient safety and improving outcomes in women's health. Through continuous learning and adherence to best practices, the medical community can ensure that such complications are addressed promptly and effectively while striving to prevent their occurrence in future cases.

Conclusion

This case highlights the importance of having skilled healthcare providers perform MVA, as well as the need for a thorough pre-procedure assessment to determine the uterine position and size in order to minimize the risk of uterine perforation. Early diagnosis and timely management are essential to prevent maternal catastrophes.

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