



A rare presentation of Uterine perforation after Two days of Dilatation and Curettage procedure in a Scarred uterus with Extruded Fetal parts in abdominal cavity- Case Report

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Abstract: - A life threatening complication of intrauterine procedure (Dilatation and curettage) is uterine perforation besides having medico legal implications. Since medical abortion has been legalized, it has become very rare during the D&C procedure in recent times. Early diagnosis is key to survival, especially if an unsafe abortion has been performed. Therefore, if the patient has lower abdominal pain, and the history of surgical abortion may be unknown most of the time, a high index of suspicion should be maintained. This case report emphasizes an atypical presentation of uterine perforation in a 28 year old woman with H/o Caesarean section 1 year back, who underwent D&C procedure at 19 weeks of pregnancy. She was discharged after the surgery, assuming there were no complications. Two days after the procedure, patient presented with complaints of acute abdominal pain and distension associated with features of internal bleeding and Bowel obstruction. Trans abdominal Ultrasound was performed, uterine perforation with Massive Haemoperitoneum was diagnosed. X ray abdomen erect view confirmed Bowel obstruction. Intra operatively, Fetal parts were removed from Pouch of Douglas and abdominal cavity. Prompt recovery was achieved after surgical intervention. This case report highlights the importance of increased awareness during the D&C procedure. Furthermore, it also emphasizes the importance of pre-operative counselling and post-operative monitoring to ensure early detection and prompt management of life-threatening complications.

Keywords: Uterine perforation, Abortion, haemoperitoneum, D& C, Dilatation and Curettage.

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Introduction

Dilatation and Curettage is a universally accepted safe procedure for Retained products of conception, Termination of pregnancy, post abortion management. The reported incidence of Uterine perforation after D& C procedure in first trimester is 0.05% and in second trimester of pregnancy is 0.032%.¹ The estimated overall risk of Uterine perforation is 0.8- 6.4 / 1000 procedures and 0.006-0.012% in Unscarred uterus/ Primigravida.^{1,2} Depending upon factors such as Age, Parity, Pre existing medical disorders, Uterine anomalies, maternal infections, type of anaesthesia, healthcare provider's technique and experience, the risk of Uterine perforation increases during D&C procedure. Uterine Retroversion does not contribute risk of perforation significantly. Nearly 15% of uterine perforation cases are associated with bladder and rectal injuries.

The clinical manifestations of uterine perforation depends on its site and size which includes continuous abdominal pain, bleeding per vaginum, bleeding into the abdominal cavity

(haemoperitoneum) and extrusion of fetal products into the abdominal cavity, Haematuria, hypotension. Uterine perforations are generally small, the most common site is anterior uterine wall (40%), cervix (36%), Right lateral wall of uterus (21%), left lateral wall of uterus (17%), Posterior uterine wall (13%) and fundus of uterus (13%).³ The most dangerous perforation sites are at the level of internal os and Uterine lower segment as they may involve uterine vessels.¹ We need prompt diagnosis and management to prevent severe consequences of the D&C procedure, especially in cases of spontaneous or therapeutic abortion, to significantly reduce maternal morbidity and mortality.

Although all cases of uterine perforation are detected early, in rare cases the fetal parts may protrude into the abdominal cavity and symptoms of internal bleeding may gradually develop. We hereby report a case of Uterine perforation after D&C procedure in a 28 year old woman, who presented with massive haemoperitoneum and Bowel obstruction.

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Case report

A case of 28 year old woman, came to our Obstetric casualty with complaints of severe abdominal pain, abdominal distension with history of moderate bleeding per vaginum since morning. Her obstetric history included G3P1L1A1 with history of Caesarean section 1 year and 3 months back, H/o Induced Abortion for 3 months of gestation 6 months back. Two days before admission, elective dilatation and curettage procedure was done to her in a private clinic (outside) at 19 weeks period of gestation for a accidental fall followed by bleeding per vaginum with passage of clots, its details are not available at the time of admission. She was discharged from the private clinic, assured that the procedure had gone without any complications and that a post-operative ultrasound scan was not required.

Two days after the procedure, she gradually developed abdominal distension, nausea, vomiting, giddiness and breathing difficulty. At the time of admission she was pale and her vitals were Pulse rate- 128 per minute, Blood pressure 118/76 mmHg, Spo2-100% in RA, Respiratory rate- 22/min, Abdominal girth -92cm and Temperature was 36.5°C. On abdomen examination, distended lower abdomen and rebound tenderness was noted, with sluggishly heard bowel sounds and dullness over the flanks was observed. On Pelvic examination, Uterus corresponds to 12 weeks size approximately, posterior forniceal tenderness, closed internal os with foul smelling bloody discharge per vaginum was noted. She was conservatively managed with intravenous fluids, antibiotics, analgesics for stabilization and emergency investigations were sent which included complete blood count(CBC) - Haemoglobin level of 9.7 g/ dl, Total count value of 26,500/ mm³ and Platelet count of 276,000/mm³, Bleeding time 2 min 40 secs, Clotting time 4 mins, Serum urea 77 and serum creatinine 2.1. An Emergency Trans abdominal Ultrasound was done. A significant fluid collection is observed surrounding the uterus with mobile internal echoes. Within the uterine cavity multiple echogenic foci are noted, which are likely to be air foci and the findings were consistent with possibility of uterine perforation. Uterine defect was not identifiable. X Ray abdomen erect was done to confirm the diagnosis of Bowel obstruction. A provisional diagnosis of Uterine Perforation with massive haemoperitoneum and Bowel obstruction

was made. Due to deteriorating condition of patient, Contrast enhanced CT scan of abdomen was not performed

Patient was taken up for Emergency Exploratory Laparotomy and the abdomen was opened by vertical incision. The following intraoperative findings were noted, 800 ml of dirty foul smelling haemoperitoneum drained from abdominal cavity and 600 ml Ryles tube aspirate drained, Fetal parts were removed from Pouch of Douglas and abdominal cavity (Right fetal foot, placenta and it's membrane, bony spicules), Uterus was adherent to anterior abdominal wall in the lower uterine segment, also it was adherent to bladder and the same were released, peritoneal surface swab was taken. Rent of size 3×3 cm noted over the posterior - lateral aspect of uterus around the lower segment, Necrotic tissues present over the uterus, small intestine. Both fallopian tube, ovaries appeared bluish black, partially gangrenous, necrotic, thrombosed. Dilated small bowel loops noted with congested jejunum. Minimal Bowel adhesions noted. No evidence of bowel perforation seen. Intraoperatively 2 unit PRBC transfused. Intraoperatively surgeon call over given and Emergency laparotomy proceeded to Hysterectomy with Bilateral salphingo- oophorectomy with adhesiolysis and abdominal exploration, Intraperitoneal and subcutaneous Drain kept. Abdominal cavity was thoroughly irrigated and Haemostasis achieved. Patient was closely monitored and stabilized over 48 hours. Postoperatively she developed Non Oliguric phase of AKI, conservatively managed with adequate hydration. Her haemoglobin levels gradually improved, serum levels of urea and creatinine dropped to normal gradually also her abdominal girth returned to normal parameter value. Post operatively, she had two episodes of fever and broad spectrum antibiotic was prescribed for seven days. She was instructed to gradually adopt oral liquids and solid foods, and she was discharged on the 14th postoperative day with instructions for follow-up.

The Histopathological report was consistent with intra operative findings. A defect of size 3×2.5 cm was noted in left lower uterine segment extending from uterine cavity to serosa. Piecemeal parts of fetus like face, skull bones, spinal cord with upper limb, fetal eye, hand and foot were identified. Placental tissue and membranes were measured together corresponds to 15×6.5×0.6cm was noted.

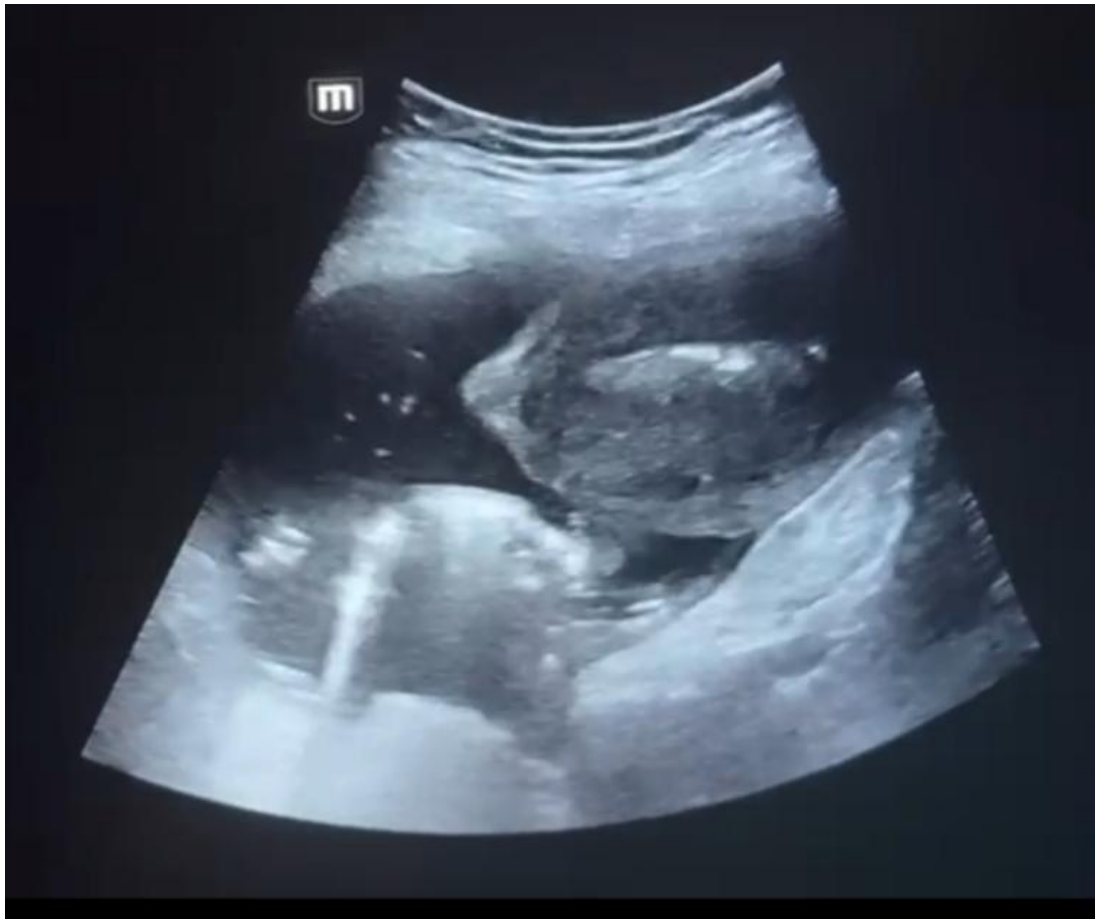


Figure 1. Trans Abdominal Ultrasound- Uterine perforation with Massive Haemoperitoneum



Figure 1.1- Trans abdominal Ultrasound- Massive Haemoperitoneum in Uterine Perforation case after D&C procedure.



Figure 2. X Ray Abdomen Erect view- Dilated Bowel loops- Small Bowel obstruction.

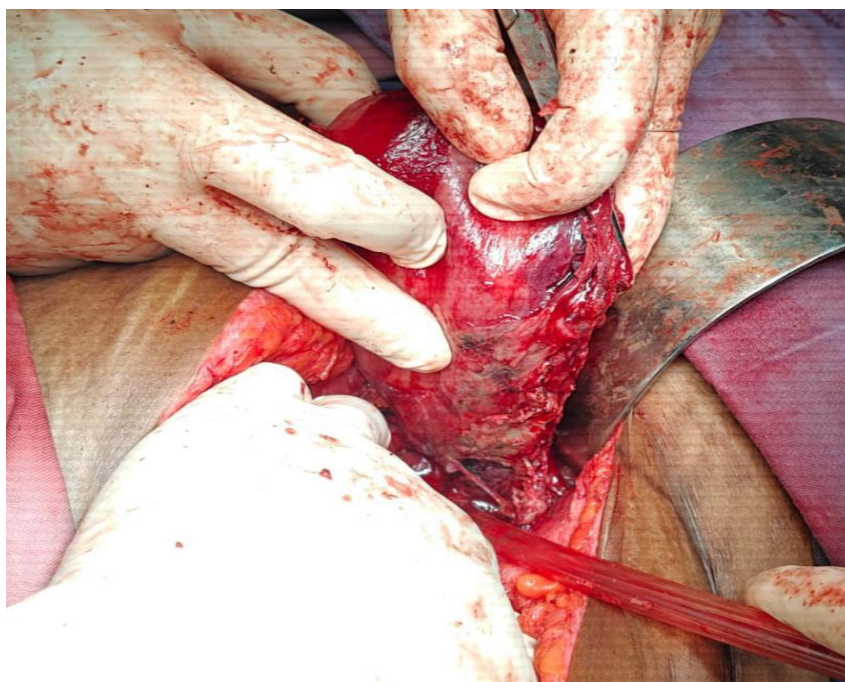


Figure 3. Intra operative findings of Uterine perforation- Posterior defect of size 3×2.5cm noted in left lower segment of uterus.

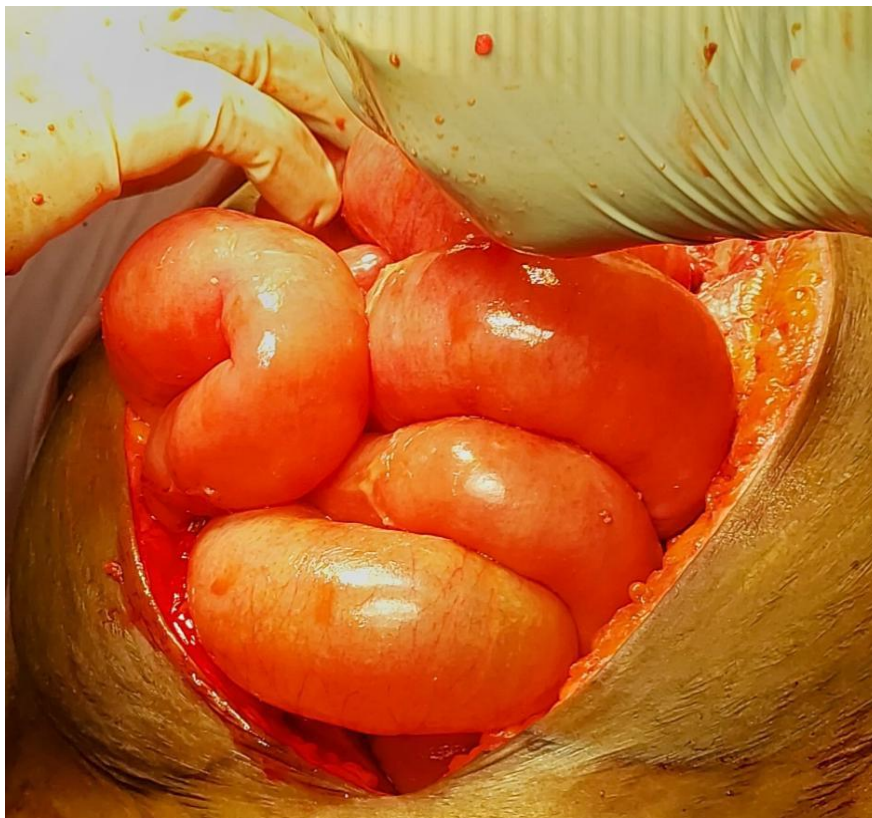


Figure 4. Intra operative findings of Dilated Bowel loops.



Figure 5. Macroscopic appearance of Uterine perforation in left lower segment of uterus.

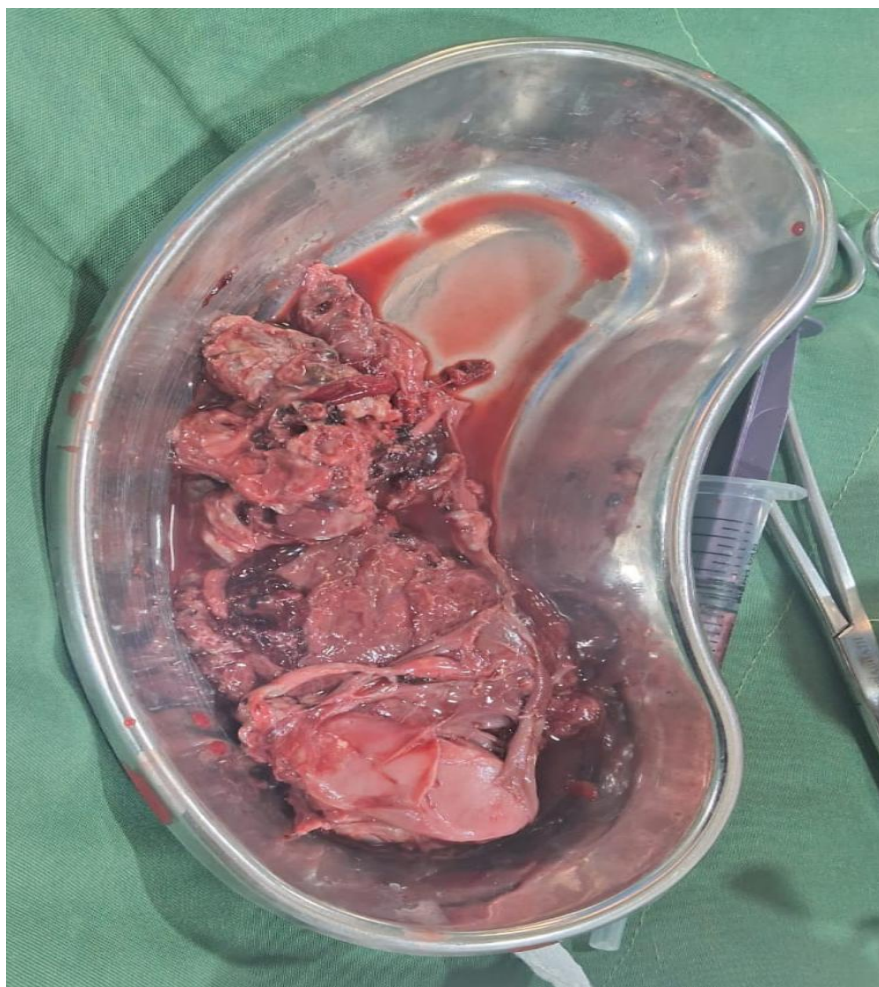


Figure 6. Macroscopic appearance of Extruded Fetal parts from abdominal cavity showing Piecemeal placental tissues and membranes with fetal bony spicules.



Figure 6.1. Macroscopic appearance of Extruded Fetal parts- Fetal foot (2.8cm corresponds to 18 weeks of gestation).

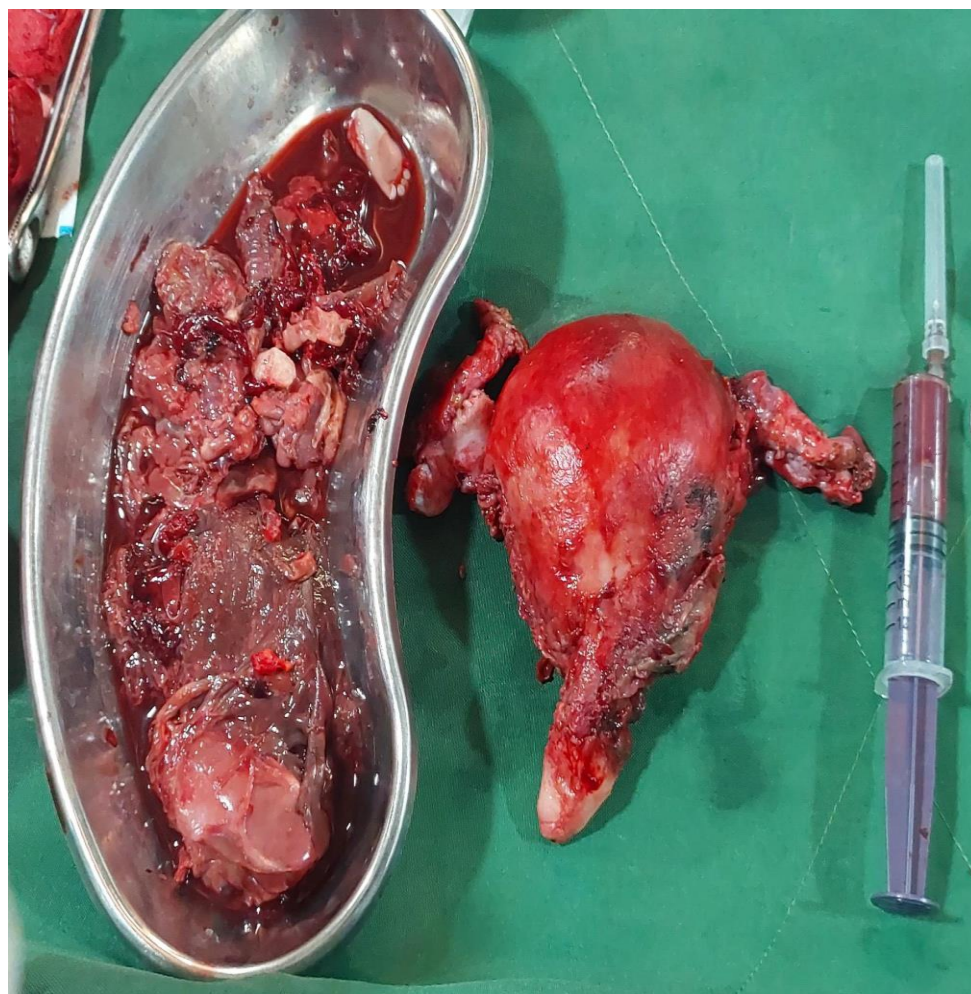


Figure 7. Specimen showing Uterus with Cervix, Bilateral Fallopian tubes and ovaries with Extruded Fetal parts showing fragments of placental tissues and membranes with fetal foot and bony spicules.

Discussion

Unsafe abortion is the fourth most common cause of maternal mortality, which can be preventable with prompt diagnosis and treatment. Unsafe abortion is defined as surgical abortion procedure carried out by health care professionals who lacks proper skills or at a low facility centre for abortion, or both.⁴ Uterine perforation is a life threatening obstetric emergency, reported incidence is 5.3 per 10,000 deliveries as per WHO.^{1,2,3} D&C is commonly performed to manage missed abortion, incomplete abortion or termination of pregnancy, which has higher risk for infection and bleeding, also it has been associated with high morbidity and mortality for both mother and baby, which ranges from 1%-3%.¹ Uterine perforation and Haemoperitoneum is a very complication of D&C procedure in recent times. In developing countries, incidence of uterine perforation is more common after D&C procedure. Risk factors for uterine perforation includes the following conditions which is responsible to reduce myometrial strength such as Multiparity, Advanced gestational age, Previous Uterine surgeries like Caesarean section, Laparotomy and Laparoscopic intervention, Hysteroscopic surgery, iatrogenic causes, History of abortion using instruments, fundal pressure, inadequate augmentation of labour, placenta accreta spectrum, congenital anomalies of uterus, traumatic causes and connective tissue disorders such as Ehler-Danlos syndrome(EDS), and general anaesthesia use.^{1,2,7} In our case, two risk factors

significantly contributed to the risk of uterine perforation, namely a history of previous caesarean section followed by a D&C for abortion in the first trimester within one year after delivery.

Based on etiological factors, uterine rupture can be classified as spontaneous or Traumatic rupture of scarred uterus (Caesarean section/ Myomectomy/Obstetric / Accidental causes) and unscarred uterus.⁴ In our case, alleged History of accidental fall at 19 weeks of gestation occurred, followed by History of passage of clots, bleeding per vaginum for which D&C done in private clinic but details are not available, hence it belongs to category of traumatic rupture in scarred uterus.

For safe abortion, the type of equipment, the infrastructure of the health facility, and well-experienced Gynecologists are mandatory to prevent maternal mortality. When performing surgery, a well-trained gynaecologist should be highly suspicious of uterine perforation whenever the surgical instrument extends beyond the expected length of the uterus.² Furthermore, if there is excessive bleeding, fat, or omentum in the suction cannula, or if haematuria occurs, injuries to other internal organs such as the small intestine, appendix, or omentum should be suspected. The first warning sign of uterine perforation is perioperative hypotension due to intra-abdominal or retro-peritoneal haemorrhage.¹ The major risk factors for uterine perforation in recent years were technique of a gynaecologist, increased rate of Caesarean section, prostaglandin

use and vaginal deliveries after Caesarean section with reported incidence of 0.2-1.5%.^{5,6}

The clinical manifestations of uterine perforation can range from mild to severe symptoms, includes abdominal pain, abdominal distension, bleeding per vaginum, fever, tachycardia and rebound tenderness which depends on the site, size and causes.⁵ Most commonly it occurs on uterine body, anterior uterine wall (40%), cervix (36%), Right lateral wall of uterus (21%), left lateral wall of uterus (17%), Posterior uterine wall (13%) and fundus of uterus (13%).^{1,2,7} If uterine perforation is not recognized promptly when uterine injury occurs, mortality and morbidity will increase significantly.

The primary investigation of choice is Trans abdominal Ultrasound, which is considered essential for detecting and identifying the perforation site. If myometrial echogenic appearance, free fluid in the pouch of Douglas or abnormal composition in the endometrial cavity are confirmed, uterine perforation can be suspected.^{2,7} A transvaginal approach (TVS) better assesses the perforation site by showing uterine serosal layer discontinuity with protruded mass of hyper echogenic nature in uterine body wall and the cavity extending from fundus of uterus to external os of cervix. If needed, CT and MRI abdomen also be done to rule out coexisting complications like Bowel injury, it has advantage providing the precise location of perforation. For detecting associated abscesses Contrast enhanced CT abdomen and MRI can be done in haemodynamically stable patients. If injuries in the bladder and ureters are suspected, CT angiography and urography may be performed to identify the affected vessels.^{2,7}

For Patients who desires for fertility preservation in uterine perforation, catheter angiography is the procedure of choice, because it has both diagnostic and therapeutic role. In haemodynamically unstable cases, temporary vascular occlusion can be performed through Catheter angiography. The overall outcome of patients with uterine perforation can be improved by Uterine Artery Embolization (UAE).^{2,7} Many institutions in developing countries do not have adequate facilities with 24-hour angiography service. Additionally, Hysteroscopy and Laparoscopy can be done to identify the perforation site.⁵

Since the maternal mortality of uterine perforation is 0.44%. The Management of Uterine perforation includes prompt haemodynamic stabilization by correcting hypovolemia, maintaining proper airway, oxygen supply, antibiotics and surgical intervention like Exploratory Laparotomy. The potential complications of uterine perforation encompasses haemorrhage, hypovolemia, hypotension, sepsis, disseminated intravascular coagulopathy (DIC), Bowel obstruction, Peritonitis, Renal failure and Embolism. Differential diagnosis for uterine perforation includes Abruptio placentae, Placenta praevia, Inversion of uterus, cervical and vaginal avulsions, disseminated coagulopathy, uterine atonicity and uterine artery rupture.^{1,2,7}

Outcomes depends on several factors like technique and operative expertise of a Gynaecologist, delayed diagnosis, late referral, ignorance and anaemia. To achieve the best possible outcome for patients with uterine perforation, timely surgical intervention should be considered. Therefore, to prevent maternal mortality due to unsafe abortion, it should be considered a major public health issue.^{1,2,7}

Conclusion

All Intrauterine procedures should be carried out in a safe and effective way under Ultrasound guidance in a recognised well equipped centres. Our case highlights the importance of detailed pre operative screening and evaluation, also it emphasizes the careful post-procedure surveillance to detect complications earlier. Furthermore, our study emphasizes that immediate surgical intervention should be considered without delay in the detection of life-threatening complications.

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