Post-cesarean severe sepsis and uterine wound disruption presenting as abdominal wound abscess and peritonitis: A case report

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Abstract
With increasing rate of cesarean section in Bhutan, the complications are expected to rise. Uterine scar dehiscence is one of the immediate complications of cesarean section, which has high morbidity and mortality. Herein, we report a case of uterine wound dehiscence with pelvic abscess following cesarean section, who presented with paralytic ileus and surgical site infection. There should be high degree of suspicion of uterine scar dehiscence with pelvic abscess in cases of paralytic ileus and surgical site infection following cesarean section, which does not improve with medical management. What made this case unusual was presentation of uterine scar dehiscence with abdominal wound sepsis. Prompt diagnosis with appropriate treatment is required to prevent morbidity and possible maternal mortality.

Keywords
Cesarean section, sepsis, pelvic abscess, uterine wound dehiscence

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Introduction
Worldwide, 21.1% of women give birth by Cesarean section.1,2 Around 80% to 90% of women with previous cesarean delivery (CD) are delivered by elective repeat CD (ERCD) in subsequent pregnancy.2 With this increasing rate of cesarean delivery, chances of complications also rise. In Bhutan, the rate of cesarean section (CS) is around 18.7%.3 The most common indications for CS were previous CS, fetal distress, prolonged labor, and failed induction.3 Complications of cesarean delivery can be immediate and late with commonest complication being postpartum hemorrhage, sepsis, and wound infection.1,4 Uterine scar dehiscence following lower segment cesarean section (LSCS) is rare with incidence of 0.6%.1 This can cause complications like postpartum hemorrhage, peritonitis, endomyometritis, and sepsis.5 Diagnosis of uterine scar dehiscence requires high degree of suspicion in addition to imaging studies. Management can either be conservative or surgical with hysterectomy in some cases with endomyometritis depending on the severity of sepsis or scar dehiscence.1,5,6

Herein, we present a case of uterine scar dehiscence, which presented as surgical site infection (SSI) and prolonged paralytic ileus. What made this case unusual was presentation of LSCS uterine scar dehiscence with surgical site infection of the abdominal wound. With this case, we aim to create awareness among clinicians about the varying presentations and management of post-LSCS uterine scar dehiscence.

Case presentation
A 28-year-old para one woman presented at the emergency department (ED) of Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) on 10 October 2021, with the complaints of painful abdominal distension, several episodes of vomiting, and foul-smelling pus discharge from the abdominal surgical wound on the fourth postoperative day.
following emergency cesarean section. She did not have any known comorbidities in the past.

Review of records of her previous admission showed that emergency CS was done at 37 weeks and 5 days of pregnancy when patient presented in labor with spontaneous rupture of membrane of three hours duration, meconium-stained amniotic fluid (MSAF) and suspicious fetal cardiotocography (CTG) with unfavorable cervix. CS was performed under spinal anesthesia with Joel-Cohen incision in the standard steps. There was thick MSAF intraoperatively. A live female baby in cephalic presentation was delivered with APGAR (Appearance, Pulse, Grimace, Activity, and Respiration) score of 6 and 10 at 1 and 5 minutes, respectively. Uterus was closed in a single layer continuous fashion with 1/0 Vicryl® suture material. The parietal peritoneum and rectus muscles were kept open. The rectus sheath was closed with 1/0 Vicryl® in continuous fashion. Skin was closed with 2/0 Vicryl® subcutaneously. Both the mother and newborn had an uneventful postoperative recovery with no fever and healthy wound when they were discharged home on third postoperative day.

Her abdominal pain and distension started gradually after she reached home from hospital around fourth day of postoperative period. The intensity of pain and distension gradually progressed which was followed by intermittent vomiting and loss of appetite. However, she did not have fever or per-vaginal bleeding. She did not have other medical disorders.

On presenting at the ER, she looked ill, with dehydration and pallor. She was oriented in time, place, and person. Her blood pressure (BP) was 116/68 mmHg, pulse rate of 130 beats per minute (bpm) with regular rhythm, and SpO₂ of 95% on room air. The examination of respiratory system and cardiovascular systems did not reveal anything abnormal. On examination of abdomen, abdomen was grossly distended with foul-smelling pus oozing from the gapping surgical wound. There was generalized tenderness of the abdomen with absent bowel sounds.

In consultation with surgical department, she was resuscitated with tentative diagnosis of paralytic ileus with SSI and admitted to the maternity ward, JDWNRH for further investigations and management. She was started on injection ceftriaxone 2 grams intravenous (IV), IV fluid resuscitation, and nasogastric (NG) tube was inserted. Investigations for complete blood count was sent, the abdominal wound was completely opened, pus was sent for culture and antibiotic sensitivity testing (ABST) on the day of admission, and the wound dressing was done twice a day.

Ultrasound scan of whole abdomen done on same day showed minimal ascites with subcutaneous edema of anterior abdominal wall, and x-ray abdomen showed distended bowel loops with multiple air-fluid levels. The biochemical markers were all within normal limit. The pus culture from wound swab showed Staphylococcus aureus which was sensitive to ceftriaxone.

Her general condition improved but tachycardia and abdominal distension persisted. On 10th postoperative day, contrast-enhanced computed tomography (CECT) of whole abdomen done to rule out possibility of foreign body left in situ revealed otherwise. There was a large abscess in between the uterus, bladder, and anterior abdominal wall (Figures 1 and 2).

Patient was informed about the need for relaparotomy, its procedure, and complications. Written informed consent was obtained. On 11th day post CS, relaparotomy under general anesthesia was performed. Abdomen was opened from the same CS incision site. Intraoperatively rectus sheath was intact which was opened and there was loculated collection of foul-smelling pus about 500 ml in between uterus, bladder, and anterior abdominal wall surrounded by omentum. The pus was drained and sent for culture. On further exploration, the defect in uterine wound with complete dehiscence (Figure 3) was noted. There was pus collection inside the...
endometrial cavity which was rinsed with copious amount of normal saline. A biopsy specimen from uterine edge was sent for histopathological examination which showed inflammatory changes. The uterine edges were approximated with 1/0 Vicryl® suture and homeostasis was ensured. A drain size 14 F was kept in situ draining the peritoneum. Peritoneal cavity was thoroughly rinsed with normal saline, followed by closure of rectus sheath with 1/0 prolene and skin with 2/0 nylon in vertical mattress fashion.

Following relaparotomy, antibiotics was changed to injection piperacillin-tazobactam (Piptaz®) 4.5 grams IV 8 hourly. Her drain was removed on 5th day of relaparotomy, and stitches removed on 10th day of surgery. She recovered completely and discharged home on follow-up.

On postnatal review at 6 weeks in the Gynecological OPD, she was healthy, and wound healed completely.

Discussion

With increase in rate of cesarean section worldwide, it has linearly increased the complications associated with it. The incidence of uterine scar dehiscence is 0.6%. It is a rare complication following previous LSCS, classical cesarean section, congenital anomaly of the uterus, abnormal placentation, previous uterine trauma, and administration of inappropriate oxytocin. Risk factors include diabetes, emergency surgery, infection, suture technique, hematoma on the uterine incision line, and retro-vesical hematoma. If it presents in early postpartum period, opening of the uterine incision line leaves uterine veins open and erosion may be related to heavy postpartum bleeding where patient can present with postpartum hemorrhage due to eroded vessels on the uterine margin. Patient can present between immediate postpartum to 2 to 3 weeks of postpartum. Delayed presentation up to 6 weeks of postpartum has also been reported in literature. Patients can present with symptoms of postpartum hemorrhage, localized or generalized peritonitis, and endomyometritis. The rate of surgical site infection in our gynecology department at JDWNRH, Thimphu, was approximately 2 to 3 per 100 patients from the data collected in previous year. If associated with infection and with the spread of infection to the peritoneal cavity, patients can present with fever, tachycardia, and features of sepsis. In our case, the patient was having abdominal distension with generalized peritonitis due to severe inflammation of uterine incision along with peritoneal inflammation. Postcesarean section peritonitis is a prolonged peritoneal inflammatory response, due to bacteria introduction during the time of surgery that involves cytokine cascades and toxic-mediated endothelial damage, resulting in increased capillary leakage and the onset of abdominal sepsis. Peritonitis which is caused by uterine incisional necrosis should be managed surgically. For the postoperative uterine wound sepsis and necrosis associated with endomyometritis, paripartum hysterectomy was performed in 6% of the patients. Conservative resuturing after debridement of the wound edges can be done, but if the margins of the wound are infected or if there is a marked endomyometritis or intra-abdominal abscess, hysterectomy is preferred. Literature evaluating the indications for cesarean section leading to relaparotomy is minimal. The risk factors for infection after cesarean delivery were the duration of surgical procedure exceeding an hour and increased body mass index. Diagnosis of uterine scar dehiscence requires high index of suspicion along with imaging modalities like ultrasound and CT scan. Early recognition and diagnosis of pelvic abscess using imaging techniques such as ultrasonography, computed tomography, and magnetic resonance imaging are important to prevent morbidity and mortality associated with it. The need for surgical exploration arises when there is marked infection of the wound, intra-abdominal abscess, and endomyometritis, in which case hysterectomy should also be considered. In our case, re-exploration was done with pelvic abscess drainage and resuturing of the uterine scar after approximation of the wound edges. Such cases should be preferably managed with laparotomy and uterine wound debridement and resuturing or hysterectomy rather than pig tail catheter insertion for draining the abscess alone. Exploratory laparotomy should be considered for the uterine scar dehiscence and repair where conservative management fails. Such conditions if missed may have long-term implications.

Conclusion

In our case, there was a delay in diagnosis of pelvic abscess which was secondary to uterine wound dehiscence with possible ascending infection. There should be high degree of suspicion of uterine scar dehiscence in cases of pelvic abscess localized in between uterus and anterior abdominal wall. Detailed exploration should be done during relaparotomy in such cases, to properly treat the primary cause, where the recurrent abscess might occur if the uterine wound is not approximated, and possibility of long-term complications.
such as utero-vesical fistula and pelvic endometriosis. We must all be aware of varying clinical presentations, so that appropriate and timely management can be done to avoid mortality and morbidity associated.

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**Informed consent**

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