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CASE REPORT

Uterine Incision Necrosis Following Cesarean Section—a Case Report

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Abstract

Increasing incidence of caesarean sections is a matter of concern globally. This surgical procedure carries its own risks and may lead to potential complications. Uterine incision necrosis is one such rarely encountered complication. The present manuscript describes this rare presentation and its subsequent management based on evidence-based medicine. Here, we report a case of multipara women who presented on a post-operative day (POD)5 of emergency cesarean section done outside with septic shock. On further evaluation based on clinical features, investigations and relevant imaging; patient underwent emergency exploratory laparotomy followed by total hysterectomy. Patient gradually improved and was subsequently discharged. This case report highlights the importance of timed surgical intervention in cases that are consistent with uterine incisional necrosis/dehiscence.

Keywords Caesarean section · Uterine necrosis · Postpartum · Hysterectomy · Case report

Abbreviations

POD	Post-operative day
TLC	Total leukocyte count
CS	Cesarean section
HPE	Histopathological examination

Introduction

Cesarean section (CS) is a major surgical obstetric procedure for the fetus as well as the mother, whenever indicated. However, it can be associated with numerous potential complications. Recent rise in the proportions of cesarean sections globally as well in in our country is a matter of concern especially when performed for low-risk women, as they may lead to complications too. Apart from the intraoperative risks (anesthesia related complications, hemorrhage, injury to adjacent organs, need of blood transfusion) other associated post operative complications include postpartum hemorrhage, thromboembolism, wound infection, endometritis, etc. A rare, but dreaded complication of cesarean section occurs when the uterine incision becomes infected and sloughed off leading to scar dehiscence. The present manuscript reports a referred case of uterine incision necrosis with septic shock following cesarean delivery. It also highlights the importance of timed surgical intervention along with judicious use of antibiotics resulting in decreased maternal morbidity as well as mortality.

Case Presentation

A 35-year-old female referred from the private hospital as a P5L4A2 on post-operative day (POD)5 of emergency cesarean section done in view of intrauterine demise with transverse lie in labour, presenting complaints being abdominal distension along with breathlessness for 3 days. On admission, the general condition of the patient was poor and she was drowsy and pale. Vitals included temperature 102˚F, pulse rate 130/min, blood pressure 94/60 mmHg, RR-44/min and saturation of 96% on 8 l of oxygen. The patient was received with a Foley catheter in situ with 100 ml of high coloured urine. Abdominal examination revealed soft

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gaseous distension with guarding and diffuse tenderness all over the abdomen. On deep palpation, uterus was 26 weeks size associated with increased tenderness over the scar. Per speculum examination revealed foul smelling lochia. Patient was admitted to high dependency unit (HDU) with provisional diagnosis of post caesarean sepsis in grade I shock and sepsis care bundle was initiated within 1 h of admission.

Investigations revealed hemoglobin of 5.1 gm/ dl and a total leukocyte count (TLC) of 38,200/dl. Blood urea levels of 19.8 mg/dl, creatinine levels of 1.5 mg/dl, serum sodium levels of 151 mmol /l, Serum K + levels of 5.1 mmol/L. Liver function testes showed total bilirubin 3.1 mg/dL, aspartate aminotransferase (AST) level of 369 U/L, alanine transaminase (ALT) of 341 U/L and a high C-reactive protein rate of 387 mg/dL. Coagulation profile showed prothrombin time of 23.1 s INR 1.7 s, and activated partial thromboplastin time 32.1 s. ABG analysis showed lactate of 7 mmol/L with metabolic acidosis. With these reports, diagnosis was revised as post caesarean severe sepsis with multiorgan dysfunction syndrome (MODS) and subacute disseminated intravascular coagulation (DIC). Ultrasonography of the abdomen revealed uterus was grossly bulky and suspicious of scar dehiscence, suspicion of bowel injury. Results of CECT whole abdomen suggested uterus was grossly bulky in size with extensive air foci within the endometrial cavity likely postpartum changes with few air foci seen along the anterior myometrium in the lower uterine segment likely scar dehiscence with few air foci noted in extraluminal location in pelvis likely postoperative cause. Heterogenicity with stranding was seen in the post-operative region of pelvis with air foci in the anterior abdominal wall in the lower abdominal region. Many bowel loops appear to be dilated in caliber showing air fluid levels with no evidence of transition zone noted likely ileus likely subacute intestinal obstruction.

A decision for exploratory laparotomy and proceed in concurrence with general surgeon was taken. Under general anesthesia, a midline vertical incision was made. Intraoperatively, 400–450 cc of foul smelling was present in the peritoneal cavity and was drained. Flaky pus was present all over the uterus and bowel. The uterus was found to be necrosed, friable covered with slough and fowl-smelling pus as shown in Fig. 1. The Stich line was covered with purulent slough and necrosed. Uterus was closed using 1–0 vicryl in two layers. Small bowel appeared normal covered with flaky purulent slough. Total hysterectomy was done and bilateral intraperitoneal drain was inserted. The patient was shifted to the intensive care unit post-operatively for further management. The patient was intubated on PRVC mode with an O2 concentration of 100% on ventilator, PEEP 5 cm of H2O, respiratory rate 18 per minute, and TV 460 ml. The patient was monitored closely and gradually weaned off to CPAP with MAP = 65 mmHg. On POD 2 patient was taken on CPAP. She gradually improved and shifted to HDU on POD 3. She was subsequently discharged on POD 6 and further follow-up was eventful. Histopathological examination (HPE) of endometrium showed marked haemorrhage, fibrin deposits and collection of neutrophilic infiltrates extending into the myometrium. Sections from the myometrium showed stromal edema and diffuse areas of necrosis. Many large dilated vessels show intraluminal fibrinosuppurative exudates.

Discussion

The cesarean section (CS) rate has increased significantly both in India and across the world, thereby adding to the burden on overstretched public healthcare systems. The incidence of rising cesarean sections is a matter of great concern. However, they are associated with many short-term as well as long-term serious complications. Infection is the most common maternal complication of cesarean deliveries requiring rehospitalizations [1]. The uterine incisional necrosis is a rare but dreaded complication of cesarean delivery [2].

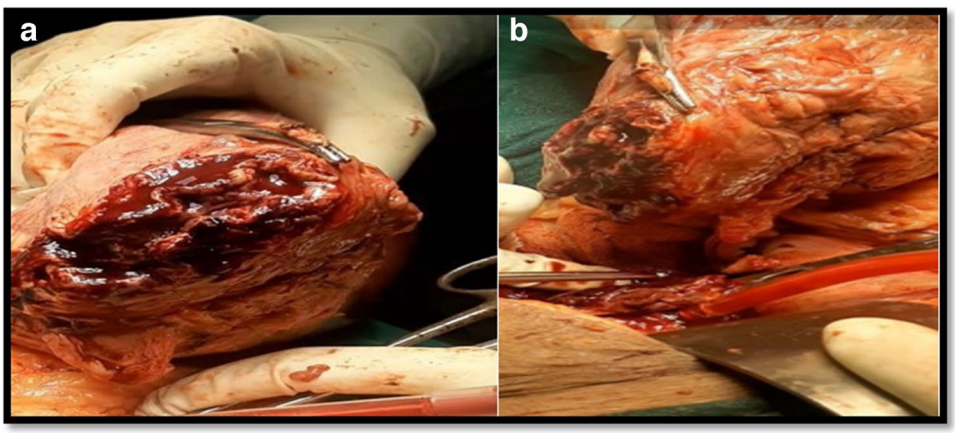

Fig. 1 a and b show intraoperative images of the necrotic uterus

According to Rivlin et al., uterine incisional necrosis can be defined as evidence of tissue necrosis recognizable in the uterine incision, whether or not separation of the incision has occurred at the time of surgical intervention [3]. Also, it must be supported by histopathological findings of cell and tissue death on the pathology specimen confirming the clinical evidence of tissue necrosis. The etiopathogenesis of uterine incision necrosis may be attributed to the presence of suture material as a foreign body plays a role in the intensive cellulitis of the incision leading to the necrosis and separation of the repair. Furthermore, small and large hematomas may occur in the suture line and form a nidus for bacterial growth. It is also possible that, in general, hemostasis is favored over perfusion preservation in closing the incision and this may prejudice healing.

The clinical presentation of a patient with infected uterine incisional necrosis and dehiscence may range from fever, diffuse abdominal pain to wound or vaginal discharge. In cases where timely intervention is not done, it may also present as peritonitis and shock. In a review of literature by Badr et al., abdominal pain and/or fever not responding to intravenous broad-spectrum antibiotics were the most common symptoms at the time of presentation to the hospital [4].

Pelvic ultrasound is done as a baseline investigation which may lead to suspicion of uterine necrosis. On USG, the uterine cavity may be distended and show multiple echogenic foci with dirty acoustic shadowing with minimal or no vascularity [5]. Computed tomography (CT) scans and MRI are both helpful in diagnosing pelvic masses and fluid collection. However, compared to CT scan, MRI is more sensitive and specific in diagnosing dehiscence because it delineates the uterine serosa layer [6]. However, surgical exploration is the gold standard for diagnosing such cases and one should rely exclusively on the findings of imaging studies.

Hysterectomy along with broad-spectrum antibiotic therapy is the standard management of life-threatening complications of uterine incisional necrosis with dehiscence. However, in selected cases, where the infection is contained and the patient is hemodynamically stable, debridement with resuture of the uterine wound may be considered. In our case, since the patient presented with generalized sepsis, hysterectomy was done as a lifesaving procedure.

Conclusion

Uterine necrosis is an extremely rare life-threatening condition following cesarean delivery. Obstetricians should keep this entity as one of the differential diagnoses in cases of severe postcesarean infections unresponsive to broad-spectrum antibiotics. Based on the clinical presentation and hemodynamic stability of the patient, immediate surgical intervention must be planned. Total or subtotal hysterectomy should be considered a lifesaving procedure in patients with severe peritonitis, intraperitoneal sepsis with abscess formation, septic shock, and extensive involvement of the margins of the uterine incision. Thus, early recognition and prompt management of uterine incision necrosis is essential to prevent life-threatening complications.

Authors' Contributions **JB, MS**: formulation of the manuscript and writing. **RR, IM**: manuscript review and manuscript editing. All authors have read and approved the manuscript.

Data Availability Available with the corresponding author.

Code Availability Not applicable.

Declarations

Ethics Approval Not applicable.

Consent to Participate Written informed consent was provided by patient as well as her relatives.

Consent for Publication Written informed consent was taken from all three patients as well as relatives for the publication of this case.

Conflict of Interest The authors declare no competing interests.

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