

Radiologic Insights into Post-Cesarean Uterine Scar Dehiscence: A Critical Postpartum Complication

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Abstract

Case Report

Uterine scar dehiscence may complicate cesarean sections, potentially leading to severe complications such as postpartum hemorrhage, endomyometritis, localized or generalized peritonitis, and sepsis. We report the case of a 20-year-old woman with an abdominal wound infection following a lower segment cesarean section (LSCS) and exhibited clinical signs of sepsis. This wound infection was, in fact, a manifestation of uterine scar dehiscence coupled with localized peritonitis. The incidence of uterine scar dehiscence is approximately 0.6%. Peritonitis resulting from necrosis at the uterine incision requires prompt surgical intervention. A high degree of clinical suspicion, supported by targeted diagnostic investigations, is essential for early detection and management, thereby reducing morbidity—especially in relation to future pregnancies. Uterine scar dehiscence accompanied by infection necessitates a heightened level of clinical suspicion, as it is a rare but significant cause of postpartum peritonitis with sepsis. A severe abdominal wound infection following a cesarean section may be associated with uterine wound dehiscence, posing a considerable risk to maternal health in subsequent pregnancies.

Keywords: CT scan, post-cesarean complication, postpartum peritonitis.

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INTRODUCTION

Uterine scar dehiscence following a cesarean section can lead to serious complications, including postpartum hemorrhage, endomyometritis, localized or generalized peritonitis, and sepsis. Uterine dehiscence, particularly when secondary to postpartum endomyometritis after a lower segment cesarean section (LSCS), remains a rare and critical event [1]. The weakening of the uterine closure and scar tissue—resulting from infection and subsequent pathogen dissemination into the peritoneal cavity—can precipitate peritonitis or abscess formation [2,3]. Similar outcomes have been documented in cases of suboptimal myometrial approximation during cesarean closure, allowing intrauterine pathogens to progressively invade the peritoneal space [2,4].

CASE PRESENTATION

We report the case of a 20-year-old primiparous woman with an unremarkable medical and surgical

history who underwent an elective LSCS, resulting in the delivery of a healthy term male infant. Fifteen days postoperatively, the patient developed intermittent fevers accompanied by diffuse abdominal pain and foul-smelling vaginal discharge. Initially managed on an outpatient basis with antipyretics and antibiotics, her condition deteriorated, necessitating transfer to our tertiary care center.

Clinical examination findings:

The patient was tachycardic, tachypneic, mildly febrile (38°C), and hypoxemic, with purulent discharge observed at the surgical site.

Imaging findings: An urgent abdominal computed tomography (CT) scan revealed:

- A disruption of the uterine wall continuity
- with adjacent collections containing air bubbles,
- Marked inflammatory stranding of the peritoneal fat,
- A modest pelvic fluid accumulation.

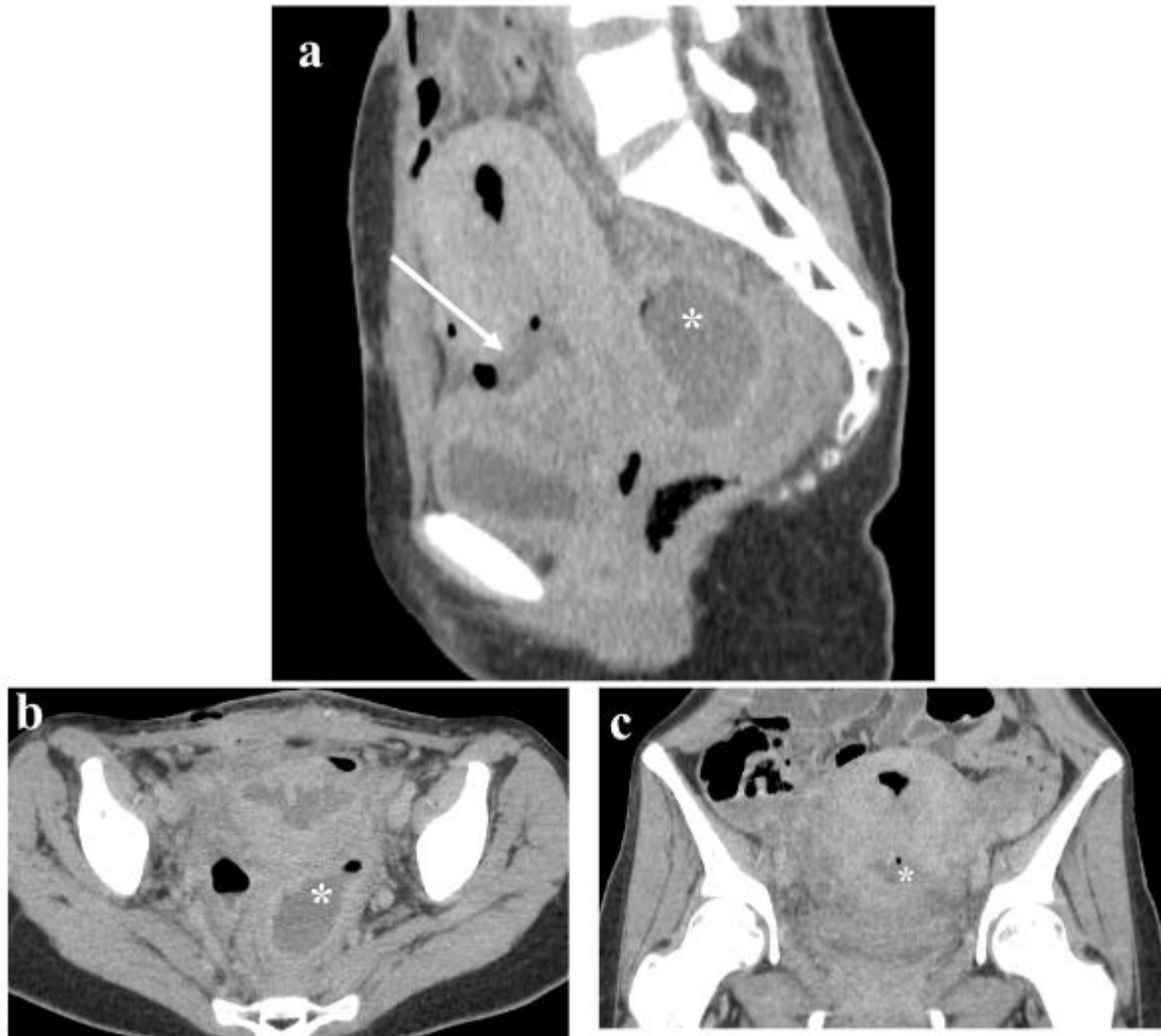


Figure 1: contrast-enhanced CT scan of the pelvis on sagittal (a), axial (b) and coronal (c) views, reveals a disruption of the uterine wall continuity (as indicated by the white arrow) with adjacent collections containing air bubbles (*)

During an emergency exploratory laparotomy, approximately 30 mL of purulent fluid was drained from the perivesical region. Intraoperatively, a complete dehiscence of the uterine incision at the lower segment was identified. After removal of the existing suture material and debridement of the incision edges, the uterine defect was meticulously re-sutured. Notably, the uterine cavity appeared normal, with no evidence of active hemorrhage.

DISCUSSION

This report illustrates the successful management of puerperal sepsis resulting from partial uterine scar dehiscence complicated by peritonitis. Our findings highlight the rare occurrence of uterine dehiscence, which can be secondary to suboptimal closure techniques or the use of inappropriate suture materials.

With the global rise in cesarean delivery rates, complications such as mild puerperal infections,

endometritis, wound dehiscence, thrombophlebitis, chronic pelvic pain, adhesions, uterine scar dehiscence, and placental abnormalities have been increasingly reported [2,5]. The incidence of postpartum uterine dehiscence following a low transverse incision ranges from 0.2% to 1.5%, and may be as high as 4–9% following a classical cesarean incision [5]. Risk factors include diabetes, emergency surgery, closure technique, puerperal infection, and the presence of a hematoma at the incision site [6].

Pathophysiologically, severe infection of the endometrial and myometrial layers can lead to necrosis of the weakest portion of the uterine wall—typically the cesarean incision—resulting in dehiscence [7]. An alternative hypothesis suggests that ischemic necrosis of the myometrium, due to overly tight sutures, may also contribute [4]. Early manifestations may include heavy postpartum bleeding, mild pelvic discomfort, and suprapubic tenderness [5, 7].

The direct communication established between the uterine and abdominal cavities facilitates the translocation of pathogenic microorganisms—commonly including *Escherichia coli*, *Klebsiella pneumoniae*, various *Streptococcus* species, and *Bacteroides fragilis*—thereby predisposing the patient to peritonitis and septic complications [8].

One of the most feared sequelae of uterine dehiscence is the formation of a pelvic abscess, typically arising from ascending vaginal infections or the postoperative accumulation of blood, serous fluid, lymphatic debris, and necrotic tissue [9, 10].

Prompt diagnosis using imaging modalities such as ultrasound, CT, and magnetic resonance imaging (MRI) is critical for reducing morbidity and mortality [5]. Contrast-enhanced CT, with its ability to delineate bowel loops and enhance vascular structures, is particularly valuable, often revealing a hypodense collection with a rounded or ovoid peripheral enhancing rim [11-12].

Despite the diagnostic capabilities of advanced imaging, laparoscopic or open surgical exploration remains the gold standard for both diagnosis and definitive management [5, 13].

CONCLUSION

Timely recognition and evaluation of postpartum abdominal pain and fever are essential to mitigate the risks associated with puerperal sepsis. Imaging modalities, especially CT scan, play a crucial role in assessing patients with severe septic presentations, while early diagnostic laparoscopy or laparotomy is recommended for effective source control. Employing meticulous surgical closure techniques, including the appropriate selection of suture materials and ensuring precise myometrial approximation, is imperative to prevent this potentially life-threatening complication, which poses significant risks for future pregnancies.

Conflict of interest: The authors declare no conflicts of interest.

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