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Gastric Perforation and Peritonitis Following Cesarean Section: A Rare Case Report and Review of Diagnostic Challenges

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ABSTRACT

Introduction: Gastric perforation is a rare but life-threatening surgical emergency, and its occurrence during the post-cesarean period is exceptionally uncommon. Owing to its nonspecific clinical manifestations, the diagnosis may be delayed, potentially resulting in generalized peritonitis, sepsis, and a significant increase in maternal mortality. Therefore, awareness of this rare complication in patients presenting with unusual symptoms after cesarean delivery is of considerable clinical importance. Herein, we report a rare case of gastric perforation associated with peritonitis following cesarean section.

Case Presentation: A 31-year-old woman presented to the Emergency Department of Sarem Super Specialty Hospital, Tehran, five days after undergoing a cesarean section, with complaints of dyspnea, abdominal pain, and severe anorexia. On initial examination, her blood pressure was 94/50 mmHg, heart rate was 115 beats/min, and oxygen saturation was 94% on room air. She had no fever, and there were no signs of surgical site infection. Abdominal examination revealed mild abdominal distension, while abdominal ultrasonography demonstrated free intraperitoneal fluid (ascites). Based on the clinical and imaging findings, gastrointestinal perforation was suspected, and the patient underwent emergency laparotomy. Intraoperative findings confirmed gastric perforation with generalized peritonitis. Surgical repair of the perforation, peritoneal lavage, and appropriate supportive care were performed. The postoperative course was uneventful, and the patient was discharged in good general condition on January 2, 2026.

Conclusion: Although gastric perforation following cesarean section is an extremely rare complication, it should be considered in postpartum women presenting with persistent abdominal pain, abdominal distension, or unexplained gastrointestinal or respiratory symptoms. Maintaining a high index of clinical suspicion, prompt imaging evaluation, and timely surgical intervention are essential for reducing morbidity and improving patient outcomes. This case highlights the importance of considering gastrointestinal perforation in the differential diagnosis of acute abdomen after cesarean delivery and may increase clinicians' awareness, facilitating earlier diagnosis and management in similar cases.

Keywords: Cesarean Section; Gastric Perforation; Perforated Peptic Ulcer; Peritonitis; Postpartum Period; Acute Abdomen; Case Report.

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Introduction

Cesarean section is one of the most commonly performed surgical procedures in obstetrics and gynecology and is widely carried out worldwide to ensure maternal and fetal well-being [1,2]. Although this procedure is generally considered safe, it may still be associated with various complications, some of which are potentially life-threatening [3,4]. Common postoperative complications include hemorrhage, surgical site infection, endometritis, thromboembolism, and urinary tract injury, whereas gastrointestinal complications, particularly gastric perforation, are exceedingly rare but potentially fatal consequences of cesarean delivery [5,6].

Gastric perforation is a surgical emergency characterized by full-thickness disruption of the gastric wall, allowing gastric contents to leak into the peritoneal cavity, resulting in generalized peritonitis, a severe inflammatory response, sepsis, and ultimately septic shock [7]. Without prompt diagnosis and treatment, this condition is associated with a high mortality rate. Several predisposing factors have been implicated in the development of gastric perforation, including stress-related ulcers, peptic ulcer disease, the use of nonsteroidal anti-inflammatory drugs (NSAIDs), *Helicobacter pylori* infection, gastric wall ischemia, and severe gastric distension. Nevertheless, in some patients—particularly during the postpartum period—no identifiable risk factor can be found [8,9].

The diagnosis of gastric perforation following cesarean section is particularly challenging because its initial manifestations, including abdominal pain, abdominal distension, nausea, anorexia, tachycardia, dyspnea, and poor oral intake, may easily be mistaken for normal postoperative changes or other common postpartum complications [10]. Consequently, delayed diagnosis may lead to progression of peritonitis, sepsis, and a substantial increase in maternal morbidity and mortality. Therefore, maintaining a high index of clinical suspicion in women presenting with unusual symptoms after cesarean delivery, together with prompt imaging evaluation and timely surgical intervention, is essential for improving clinical outcomes [10,11].

Given the rarity of this complication and the limited number of published reports, documenting additional cases may enhance the awareness of obstetricians, general surgeons, and emergency physicians regarding this uncommon differential diagnosis and facilitate earlier recognition and management. In this report, we describe the case of a 31-year-old woman who presented five days after cesarean section with dyspnea, abdominal pain, severe anorexia, and ascites. Prompt diagnosis followed by emergency laparotomy resulted in successful management and discharge of the patient in good general condition.

Case Presentation

A 31-year-old woman, gravida 1 para 1, underwent a cesarean section on December 5, 2025, at Sarem Super Specialty Hospital, Tehran. She delivered a healthy full-term neonate with Apgar scores of 9 and 10 at the first and fifth minutes, respectively. Her immediate postoperative course was uneventful. Five days after the cesarean section, she presented to the emergency department with complaints of dyspnea, diffuse abdominal pain, and severe anorexia. She denied fever, nausea, or vomiting. Examination of the surgical incision revealed a dry wound with no evidence of discharge, erythema, or wound dehiscence.

On initial evaluation, her blood pressure was 94/50 mmHg, heart rate was 115 beats/min, and oxygen saturation was 94% on room air. Abdominal examination revealed mild abdominal distension with diffuse tenderness. Considering the patient's clinical presentation and the possibility of an intra-abdominal complication, further diagnostic investigations were initiated. Abdominal ultrasonography demonstrated free intraperitoneal fluid (ascites), raising suspicion of an underlying intra-abdominal pathological process (Figure 1).

Subsequent diagnostic evaluation and surgical consultation led to the suspicion of gastric perforation, and the patient underwent emergency laparotomy. Intraoperative findings confirmed gastric perforation associated with generalized peritonitis. Surgical management included laparotomy, primary repair of the gastric perforation, thorough peritoneal lavage, and appropriate supportive care. The patient also received postoperative intensive monitoring and additional laboratory evaluations. Her postoperative recovery was uneventful, and her clinical condition gradually improved with medical treatment, supportive care, and close follow-up. She was discharged in good general condition on January 2, 2026, without any significant complications.

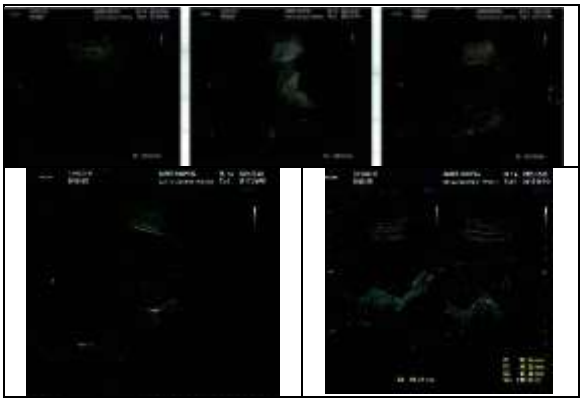

Figure 1. Radiologic and intraoperative findings of gastric perforation following cesarean section.

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Discussion

Gastric perforation is a rare but life-threatening gastrointestinal emergency characterized by full-thickness disruption of the gastric wall, allowing gastric contents to leak into the peritoneal cavity and resulting in chemical peritonitis followed by bacterial peritonitis, sepsis, and ultimately multiple organ failure if left untreated [12]. Delayed diagnosis and management are associated with significant morbidity and mortality. The most common causes of gastric perforation include peptic ulcer disease, stress-related ulcers, nonsteroidal anti-inflammatory drug (NSAID) use, gastric malignancy, traumatic injury, and, less frequently, gastric wall ischemia [9,13]. However, gastric perforation during the postpartum period, particularly following cesarean section, is exceedingly rare, with only a limited number of cases reported in the literature. Diagnosis in post-cesarean patients is particularly challenging because early manifestations, including abdominal pain, abdominal distension, nausea, anorexia, tachycardia, and even dyspnea, may be misinterpreted as expected postoperative changes or other common postpartum complications [10,14,15]. Such overlap may delay diagnosis and treatment, thereby increasing the risk of generalized peritonitis, sepsis, and maternal mortality. Therefore, gastrointestinal perforation should always be considered as a differential diagnosis in women presenting with progressive abdominal pain or other unusual symptoms following cesarean delivery.

In the present report, we described the case of a 31-year-old woman who presented to Sarem Super Specialty Hospital, Tehran, five days after cesarean section with abdominal pain, dyspnea, severe anorexia, and mild abdominal distension. Initial investigations revealed free intraperitoneal fluid, and based on a high clinical suspicion, the patient underwent emergency laparotomy. Intraoperative findings confirmed gastric perforation with generalized peritonitis. Following surgical repair and supportive management, the patient recovered uneventfully and was discharged in good clinical condition. This case is noteworthy because gastric perforation after cesarean section is an exceptionally rare complication, and awareness of this condition may improve diagnostic vigilance among obstetricians, general surgeons, and emergency physicians. Furthermore, our patient had no known history of active gastric disease and presented with relatively nonspecific symptoms, making the diagnosis particularly challenging. This report therefore underscores the importance of maintaining a high index of suspicion, performing timely imaging studies, and initiating prompt surgical intervention to prevent life-threatening complications. Given the scarcity of similar reports, this case also contributes to the existing evidence regarding the clinical presentation, diagnosis, and management of this rare condition.

Shirazi et al. reported a series of four cases of post-cesarean peptic ulcer perforation in 2020, in which the most common clinical manifestations included acute abdominal pain, progressive abdominal distension, tachycardia, hemodynamic instability, and free intraperitoneal fluid detected by ultrasonography [10]. All patients underwent laparotomy; however, two patients died because of delayed diagnosis and disease severity. The findings of our case are consistent with those reported by Shirazi et al. regarding the clinical presentation and the need for immediate surgical intervention. In contrast to their study, however, our patient had a favorable outcome, likely because of earlier recognition, prompt laparotomy, and timely multidisciplinary management. This difference further highlights the critical role of early diagnosis and rapid surgical treatment in improving the prognosis of gastric perforation following cesarean section [10].

Awoonor-Williams et al. reported two cases of gastroduodenal perforation following cesarean section in young women, both of whom presented with severe abdominal pain, signs of peritonitis, and rapid clinical deterioration [16]. Despite surgical intervention, both patients died as a result of perforation-related complications and sepsis. The authors emphasized that although gastroduodenal perforation following cesarean delivery is extremely rare, its rapid progression and high mortality necessitate immediate diagnosis and intervention. Similar to their findings, our patient presented with abdominal pain requiring emergency surgical management. However, unlike the reported cases, our patient achieved complete recovery following early diagnosis, prompt laparotomy, and appropriate treatment. These differences underscore the importance of early recognition, rapid control of intra-abdominal contamination, and effective collaboration between obstetric and surgical teams in improving patient outcomes [16].

Hassane et al. described a case of post-cesarean sepsis secondary to vernix caseosa peritonitis in 2026, in which the patient presented five days after cesarean delivery with severe abdominal pain, vomiting, and markedly elevated inflammatory markers [17]. In their report, the initial imaging findings were misleading, and the definitive diagnosis was established only after laparotomy and histopathological examination. The authors concluded that post-cesarean peritonitis requires a high index of clinical suspicion even in the absence of characteristic imaging findings. Our findings are comparable with their report regarding the timing of symptom onset, the presentation with peritonitis, and the necessity for emergency laparotomy. Nevertheless, the underlying cause of peritonitis differed, as our patient had gastric perforation, whereas vernix caseosa-induced inflammatory reaction was responsible in their case. Despite these etiological differences, both reports emphasize that clinicians should not rely solely on

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initial imaging findings and that early diagnosis combined with prompt surgical intervention is essential for achieving favorable outcomes in patients presenting with unusual postoperative symptoms after cesarean section [17].

Conclusion

Although gastric perforation following cesarean section is an exceptionally rare complication, it may rapidly progress to generalized peritonitis, sepsis, and even maternal death. Because its initial clinical manifestations are often nonspecific, a high index of suspicion is essential, particularly in women presenting with progressive abdominal pain, tachycardia, abdominal distension, or other unexplained symptoms after cesarean delivery. The present case demonstrates that prompt imaging evaluation, multidisciplinary assessment, and timely surgical intervention play a pivotal role in improving clinical outcomes. Furthermore, this report highlights the importance of including gastrointestinal perforation in the differential diagnosis of acute abdomen following cesarean section and may contribute to increasing clinicians' awareness, thereby reducing delays in diagnosis and management of this rare but life-threatening condition.

Ethical Issue

In conducting this research, all ethical principles in medical and biological research were observed in accordance with the Declaration of Helsinki, and the rights, dignity, and confidentiality of the participants were protected.

Conflict of Interests

There was no conflict of interest in this study.

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