

Hepatic Abscess: A Very Rare Post-Partum Complication Case Report

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ABSTRACT:

Introduction and importance: Post-partum infections are common complications of childbirth. However, liver abscess as a result of cesarean section remains extremely rare. Early recognition is critical due to its potential severity.

Case presentation: We report the case of a 20-year-old primigravida who developed persistent fever after emergency cesarean delivery for chorioamnionitis. Imaging revealed multiple liver abscesses. Percutaneous drainage was performed and *Streptococcus viridans* was isolated. The patient responded well to targeted antibiotic therapy.

Clinical discussion: This case highlights the diagnostic challenge of liver abscess in the postpartum setting. Persistent fever unresponsive to standard therapy should prompt further imaging. A multidisciplinary approach involving radiology, infectious diseases, and surgery is essential.

Conclusion: Liver abscess, although rare, should be considered in cases of persistent post-cesarean fever. Early diagnosis and appropriate management are key to successful outcomes.

INTRODUCTION

Background

Postpartum infections remain a significant cause of maternal morbidity, particularly in low- and middle-income countries. While endometritis and wound infections are well-known complications following cesarean delivery, visceral infections such as liver abscesses are exceptionally rare. Their diagnosis can be challenging due to non specific symptoms and over lap with more common post-cesarean complications.

Rational

This case is reported due to the exceptional rarity of liver abscess occurring after cesarean section, especially in a young, otherwise healthy primigravida. The absence of predisposing hepatobiliary or gastrointestinal pathology highlights the unusual nature of this complication and underlines the importance of considering deep-seated infections in the presence of persistent postpartum fever.

Relationship to existing literature or guidelines

While liver abscesses are well-described in the context of gastrointestinal perforation or biliary disease, their occurrence post-cesarean remains anecdotal. Few reports exist in the literature, and no specific guidelines address their diagnosis or management in the obstetric setting. This case aligns with previous rare reports but adds to the literature by emphasizing the role of early imaging and multidisciplinary intervention in postpartum patients with unexplained systemic signs of infection.

Demographic information

The patient is a 20-year-old woman, married, primigravida and primipare, with no notable past medical or surgical history.

The patient presented in the hospital ; referred by her gynecologist with persistent high-grade fever reaching 40°C, occurring in the early postpartum period following an emergency cesarean section performed for chorioamnionitis. The fever persisted despite initial empirical antibiotic therapy, prompting further investigation to identify an underlying infectious source.

This was her first pregnancy and first surgical intervention. She underwent emergency cesarean section due to chorioamnionitis. The postoperative period was complicated by ongoing fever despite antibiotic treatment.

No relevant genetic or hereditary conditions were identified or suspected in this case.

This case report has been reported in line with the SCARE 2025 checklist [reference].

This case illustrates a particularly complex clinical presentation, in which persistent fever in the post-partum period was not explained by the initial chorioamnionitis that had prompted high-tract delivery. The diagnosis of liver abscess, although unexpected in this post-partum setting, proved to be the true origin of this patient's recurrent febrile episodes. This case highlights the importance of a thorough clinical evaluation of any unexplained fever in the postpartum period, including the search for unusual infectious foci.

Timeline

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- Day 0: Emergency cesarean section for chorioamnionitis.
- Day 1–3: Amoxicillin-clavulanic acid + metronidazole + gentamicin administered.
- Day 5: Persistent high fever (39–40°C), work-up initiated.
- Day 6: CT scan revealed multiple liver abscesses.
- Day 7: Percutaneous drainage performed, *Streptococcus viridans* isolated.
- Day 8+: Antibiotic therapy escalated to ceftriaxone; clinical improvement.
- Day 14: Patient discharged in good condition.

Clinical Findings

The physical examination showed a conscious patient with a GCS of 15/15. Abdominal examination revealed diffuse tenderness without guarding or rebound. The remainder of the examination was unremarkable.

Diagnostic Assessment & Interpretation

Laboratory investigations showed a predominantly neutrophilic leukocytosis of 26,700/ μ L, a platelet count of 378,000/ μ L, a markedly elevated C-reactive protein of 500 mg/L, low bicarbonate levels of 16 mmol/L, and elevated liver enzymes (ALT 5x upper limit of normal, AST 4x upper limit of normal).

Imaging studies were performed. Pelvic ultrasound did not show retained products of conception but did reveal moderate-sized ascites. Chest X-ray, urine culture, and COVID-19 test were all negative. Blood cultures were obtained, and empiric intravenous antibiotics were initiated.

Contrast-enhanced abdominal and pelvic CT scan revealed a physiological pneumoperitoneum, as well as multiple hypodense, rounded, confluent liver lesions with a cluster-sign appearance and peripheral rim enhancement, consistent with liver abscesses, located in segments 8 and 7, measuring 40 x 22 mm. Associated dilation of the intrahepatic bile ducts was also noted. (Fig.1)

The main diagnostic challenge was the non specific presentation of fever in the postpartum period, which is often attributed to common infections such as endometritis or urinary tract infections. The absence of localized symptoms delayed suspicion of a visceral abscess. Furthermore, the ultrasound failed to reveal the lesions, necessitating advanced imaging.

The differential diagnosis included endometritis, pelvic abscess, urinary tract infection, pneumonia, septic thrombophlebitis, and surgical site infection. Given the lack of localizing signs and persistence of fever, liver abscess was considered and confirmed via CT imaging.

The presence of multiple liver abscesses initially suggested a potentially severe infection with risk of systemic sepsis. However, early CT-guided drainage and targeted antibiotic therapy contributed to a favorable prognosis. The patient responded well to treatment and showed full recovery without complications.

Pre-Operative Patient Optimisation

The patient was kept nil by mouth for 6 hours prior to the procedure to reduce the risk of aspiration. Intravenous fluids were administered to maintain hydration, and analgesics were provided for comfort. Informed consent was obtained after detailed explanation of the procedure, benefits, and potential risks.

As this was an emergency intervention in a postpartum setting, no prior lifestyle optimization was applicable. However, psychological support and reassurance were offered, given the anxiety associated with postpartum complications and the need for an interventional procedure soon after delivery.

The percutaneous drainage procedure was performed by a senior interventional radiologist with over 10 years of experience in image-guided procedures, including abdominal abscess drainage. The operator had extensive training in interventional radiology and was considered fully independent and beyond the learning curve for this procedure.

The intervention took place in the interventional radiology unit of a tertiary care teaching hospital with full imaging and surgical support. The center has extensive experience with percutaneous liver abscess drainage and routinely performs such procedures in collaboration with infectious disease specialists and surgical teams. In this case, the intervention was carried out in coordination with the obstetrics and gynecology team, who had initially referred the patient and remained involved in her postoperative care.

Changes in treatment plan

Initial antibiotics Empirical broad-spectrum antibiotics at admission: amoxicillin-clavulanic acid, metronidazole, and gentamicin. After microbiological identification of *Streptococcus viridans*, the regimen was adjusted to intravenous ceftriaxone (1 g every 12 hours) based on culture sensitivity.

Analgesia: paracetamol as needed for pain and fever control.

Venous thromboembolism prophylaxis: subcutaneous low molecular weight heparin (enoxaparin 40 mg/day) during hospitalization.

Antiemetics (metoclopramide) were used as needed.

Intervention adherence and tolerance

The patient strictly followed the post-hospitalization prescriptions, including continuation of intravenous antibiotic therapy during hospitalization and compliance with rest instructions. Adherence was confirmed by the absence of treatment interruption and full attendance at follow-up appointments. No adverse effects related to antibiotics or the drainage procedure were reported, confirming good tolerance and the feasibility of this management in similar clinical contexts.

SUMMARY OF RESULTS

This case describes a 20-year-old primigravida who developed persistent fever following an emergency cesarean section for chorioamnionitis. Advanced imaging revealed multiple hepatic abscesses, and CT-guided percutaneous drainage combined with targeted antibiotic therapy resulted in complete clinical and biological resolution. The patient had no postoperative complications and achieved full recovery within the expected timeframe. This successful outcome reinforces the importance of early imaging in

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cases of unexplained postpartum fever and the effectiveness of minimally invasive drainage combined with tailored antimicrobial therapy.

Relevant Literature

Hepatic abscess in the postpartum period is exceptionally rare, with only isolated case reports available in the literature. Most reported cases are associated with gastrointestinal or biliary pathology rather than obstetric complications. Similar to previously published rare cases, our patient's abscess was likely secondary to hematogenous dissemination from a uterine infection (chorioamnionitis). Literature emphasizes that early recognition, image-guided drainage, and pathogen-directed antibiotic therapy are essential for favorable outcomes. Our report adds to this evidence by demonstrating rapid recovery with no recurrence following multidisciplinary management.

Future Implications

This case highlights the need for heightened clinical vigilance in postpartum patients with persistent fever unresponsive to empirical antibiotics. In such scenarios, prompt abdominal imaging should be considered to exclude deep-seated infections such as liver abscesses. Incorporating early CT scanning into diagnostic algorithms for unexplained postpartum fever may reduce morbidity. Additionally, multidisciplinary collaboration between obstetricians, radiologists, and infectious disease specialists should be emphasized in future guidelines to optimize outcomes.

Take Away Lessons

Persistent postpartum fever warrants consideration of uncommon infectious etiologies, including hepatic abscess.

Absence of localized abdominal symptoms does not exclude visceral infection.

Early CT imaging can identify deep-seated infections when initial workup is inconclusive.

Minimally invasive image-guided drainage combined with targeted antibiotics is effective and well tolerated.

Multidisciplinary coordination is crucial for timely diagnosis, intervention, and recovery.

The patient expressed relief after surgical intervention and reported satisfaction with the care provided. She mentioned concerns about body image and expressed gratitude for psychological support

DISCUSSION

The present case highlights the importance of maintaining a high index of suspicion for unusual infectious foci, such as liver abscesses, in the setting of persistent postpartum fever, even in the absence of specific abdominal symptoms. While chorioamnionitis is a well-recognized cause of postpartum fever, this case illustrates that alternative diagnoses should be considered when the clinical course does not follow the expected trajectory.

Liver abscesses are uncommon in the postpartum period, with an estimated incidence of 0.3–0.8 per 100,000 deliveries (6,7). They are more typically associated with biliary tract disease, hematogenous spread from a distant focus, or trauma (8). In this case, the liver abscess likely developed as a complication of the underlying chorioamnionitis, with hematogenous dissemination to the liver (3,4). The prompt recognition of this atypical infectious focus and the initiation of appropriate management, including percutaneous drainage and targeted antibiotic therapy, were crucial for the favorable outcome of this patient.

In the present case, the development of the liver abscess was likely a consequence of the underlying chorioamnionitis, with hematogenous dissemination from the uterine infection. However, it is also plausible that the liver abscess arose as a result of direct extension of the intrauterine infection, given the anatomical proximity between the liver and the gravid uterus.

This pathogenic mechanism has been previously reported in the literature, with several case reports and case series describing liver abscesses as a complication of ascending genital tract infections, such as chorioamnionitis (16,17). The contiguous spread of the infectious process from the uterus to the adjacent liver parenchyma can occur through the lymphatic channels or by direct extension through the peritoneal cavity.

The importance of thorough abdominal lavage and adequate surgical debridement during cesarean delivery, particularly in the setting of chorioamnionitis, cannot be overstated. Incomplete or suboptimal intraoperative management of the infectious focus may contribute to the development of subsequent intra-abdominal complications, including liver abscesses, in the postpartum period (17,18). Meticulous surgical technique and a low threshold for aggressive intervention to control the primary infectious source are crucial to prevent the progression of localized uterine infection to more widespread and potentially life-threatening complications.

In the present case, the possibility of inadequate or insufficient abdominal lavage during the initial cesarean delivery may have played a role in the subsequent formation of the liver abscess. This highlights the need for a standardized and comprehensive approach to surgical management of intrauterine infections, in order to minimize the risk of infectious sequelae in the postpartum period.

The current guidelines for the management of septic shock in the obstetric population, as outlined by the Surviving Sepsis Campaign, emphasize the importance of early recognition, prompt antibiotic administration, and hemodynamic support (9,10). In this case, the patient received a combination of broad-spectrum antibiotics, including an aminoglycoside, as recommended for the empiric treatment of severe sepsis in the postpartum period. The escalation of antibiotic therapy based on microbiological findings and the drainage of the liver abscess were also key elements in the successful management of this complex case (5).

CONCLUSIONS

This case underscores the need for a high level of suspicion and a comprehensive clinical evaluation in the setting of persistent postpartum fever, even when the initial presentation suggests a more common infectious etiology. A multidisciplinary approach, with timely initiation of appropriate antimicrobial therapy and targeted interventions, is essential for the effective management of unusual infectious complications in the postpartum period.

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ABBREVIATIONS

GCS
ALT
AST

No AI was used in the writing or preparation of this manuscript.
Artificial Intelligence Declaration

DECLARATIONS

Ethical approval

Ethics approval has been obtained to proceed with the current study.

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None.

Follow-Up and Outcomes

- Follow-up was conducted 1 month post-discharge via outpatient clinic consultation.
- Patient showed no signs of recurrent infection.
- Liver function tests and abdominal ultrasound were normal.
- No long-term complications or readmissions reported.

Complications and Adverse Events

- No intraoperative or postoperative complications observed.
- No adverse events or medication reactions occurred.
- The hospital stay duration was 14 days, within expected range for liver abscess management.
- No readmissions or further interventions required post-discharge.

Intervention Adherence and Compliance

- The patient adhered well to the prescribed antibiotic therapy and follow-up schedule.
- No adverse events or treatment interruptions were reported.
- This supports the feasibility and tolerability of such management in similar clinical contexts.

Strengths and Limitations

- Strengths: Prompt diagnosis and intervention, rare case presentation, multidisciplinary management.
- Limitations: Single case report without long-term follow-up; causality with chorioamnionitis inferred but not definitively proven.

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Highlights

- Rare liver abscess case in postpartum after cesarean delivery.
- Persistent fever unresponsive to chorioamnionitis treatment.
- CT scan revealed multiple abscesses needing percutaneous drainage.
- Streptococcus viridans isolated from abscess and blood cultures.
- Full recovery with targeted antibiotics and drainage.

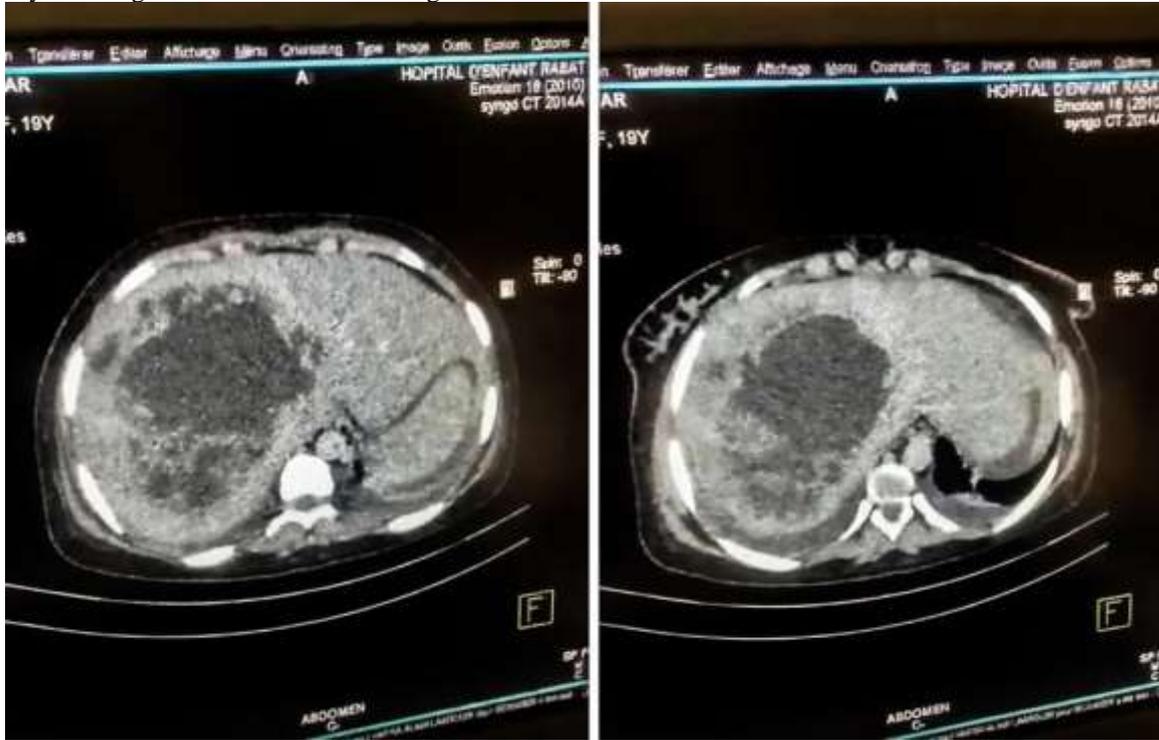


Figure and Legend

Figure 1. Contrast-enhanced abdominal and pelvic CT scan showing liver abscesses.