

## Case Presentation and Management of Liver Abscess in a 32-Weeks Pregnant Woman

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### Abstract

**Background:** liver abscess as an inflammatory lesion predominantly caused by ALA and PLA, with ALA being more prevalent in India. It discusses the transmission of *Entamoeba histolytica* and emphasizes the importance of recognizing unusual variants of ALA due to their association with complications. The section also mentions the occurrence of liver abscess in different lobes of the liver and the benign nature of ALA in the absence of poor prognostic markers. **Figure 1 Description:** A suggested algorithm for the management of liver abscess is presented in Figure 1, although specific details are not provided in the text. **Methodology:** The study is designed as a case report and conducted in the Department of OBGY at Rohilkhand Medical College And Hospital, Bareilly. **Case Report:** This section details a case of a 32-year-old pregnant patient presenting with fever, fatigue, and right upper quadrant pain. The patient's clinical examination, laboratory findings (including blood tests and ultrasound), and the development of tachycardia and tachypnea during hospitalization are described. The ultrasound findings suggest a liver abscess. The patient's subsequent treatment in the ICU and the birth of a healthy neonate are also reported. **Figure 2 Description:** An abdominal ultrasound image shows the calcified wall of the abscess in a 32-week pregnant woman, as depicted in Figure 2. **Conclusion:** The conclusion highlights the rarity but critical importance of considering liver abscess as a potential cause of sepsis or septic shock in pregnant patients. It recommends ultrasonographic evaluation of the liver in such cases.

**Keywords:** Pyogenic Liver Abscess, Pregnancy, Amoebic Liver Abscess.

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### Introduction

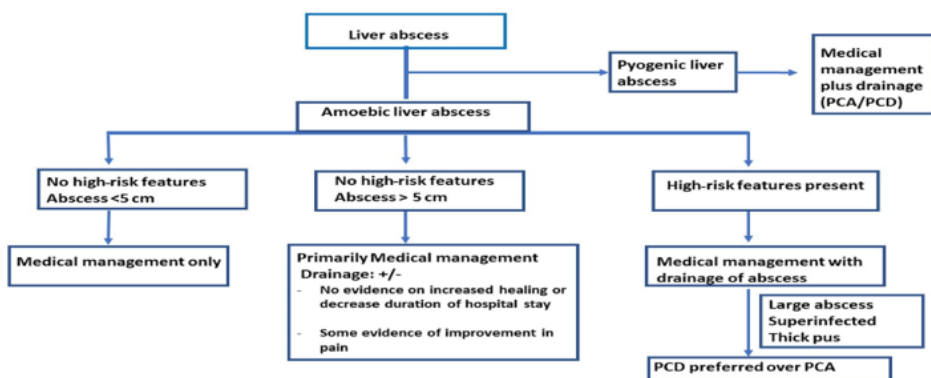
Liver abscess is an inflammatory space-occupying lesion of the liver caused by infectious agents. Amoebic liver abscess (ALA) and pyogenic liver abscess (PLA) are its two predominant causes. Rarely, liver abscess can be caused by fungi, mycobacteria, and other atypical organisms. ALA is the predominant cause of liver abscess in India, seen in more than 60% of cases [1].

It is caused by *Entamoeba histolytica* with feco-oral route, the predominant mode of transmission. In this review, we describe the overview of ALA and PLA, along with its complications and management. and/or multiple abscesses and compression of biliary tree by an abscess near porta hepatis or caused by concomitant alcoholic hepatitis [2].

Although classically described as a solitary abscess in the right lobe of the liver, 35% of patients may have a left lobe liver abscess with or without a right lobe abscess, and 15% of patients can have multiple liver abscesses [3].

Recognizing the unusual variants of ALA is important because these are generally associated with complications [2]. The clinical course of ALA is usually benign in the absence of poor

prognostic markers [1,4]



**Figure 1: Suggested algorithm for the management of liver abscess.**

Pyogenic liver abscess (PLA) complicating pregnancy is extremely rare. The most common microorganisms reported with this complication are *Escherichia coli* and *Bacteroides* spp. and polymicrobial infections. Adequate management of this unusual clinical situation requires early diagnosis and treatment.

In this report, we present an interesting case of a pregnant woman who had complaint of fever and right upper quadrant pain diagnosed with hepatic abscess.

## Methodology

**Study design:** Case Report.

**Study setting:** Department of OBGY Rohilkhand Medical College And Hospital Bareilly.

## Case Report

A 32-year-old patient, gravida 5, presented to the emergency service with fatigue and complaint of fever at home. The patient complained pain in right upper quadrants, fever since 8 days.

In her admission, she denied any dysuria, diarrhea, sore throat, coughing, nausea, or rupture of membranes. In ultra- sound, she had a healthy fetus of 33 weeks of gestation. She said she had fever of 39.8°C at home, but in her admission; it was 37°C (98.6 Fahrenheit) with a blood pressure of 110/70 mm Hg, a pulse of 80 beats per minute, and a respiratory rate of 18 breaths per minute. Her lungs were clear except for shallow respiratory sounds on the right. Her abdomen was non tender. The cervical examination was also normal with no discharge or discomfort. CBC report Hb 7.7g%, ADA 441U/L, Pus for A.F.B negative, pus gram staining negative.

USG findings reveals Hepatomegaly with large well defined thick walled heterogeneous hypoechoic lesion in the right lobe in right lobe liver likely liver abscess.

A few hours later, while she was still in the hospital for medical observation, a sudden episode of tachycardia with a pulse of 210 beats per minute and tachypnea with a respiratory rate of 30 breaths per minute was encountered. At that moment, her fever was 39.6°C (103.28 Fahrenheit). Her electrocardiography was interpreted as sinus tachycardia. Her echocardiography revealed mild tricuspid regurgitation



**Figure 2: The abdominal ultrasound image of calcified wall of the abscess in 32-week pregnant woman.**

first degree of pulmonary hypertension, and normal systolic functions. Her chest X-ray was normal. Cultures from blood, urine, stool, and cervix were taken and she was monitored in the intensive care unit (ICU). Meanwhile, meropenem (Meropenem, 1 gram/day, intravenously) was started.

Induced normal delivery was performed. The female neonate weighed 2500g with APGAR scores of 9 and 9 at the first and fifth minutes, respectively.

## Discussion

Pyogenic liver abscess is a serious, life threatening condition that is difficult to diagnose and treat. Clinical suspicion is important because of its high mortality rate [1]. Although fever and right upper quadrant abdominal pain are known to be the most common symptoms, the clinical presentation in many cases is nonspecific and is difficult to diagnose. The most common microorganisms reported with this clinical entity are *Escherichia coli* and *Bacteroides* spp. [1]. Usually, a mucosal defect within the digestive tract is blamed for bacteria invasion into the portal system followed by hematogenous spread to the liver [2].

Just like the clinical symptoms, the laboratory tests are also non-specific for diagnosis of PLA. The most frequent findings are increased ALP, leukocytosis, and increased fibrinogen which are not specific during pregnancy. Elevated ALT and infection-induced thrombocytopenia are also reported [3]. The sensitivity of ultrasound for the diagnosis of PLA is reported to be 85.8% [4]. The clinical incidence of PLA varies from region to region but has been reported to be 11 cases per million persons per year [5].

PLA during pregnancy is an extremely rare condition which represents a diagnostic and therapeutic challenge. As the clinical and laboratory findings are usually nonspecific, a misdiagnosis is often possible, but an early diagnosis and therapy are vital because of its high perinatal mortality rate in untreated cases. Another problem with PLA onset in pregnancy is the possible progression of the disease to severe sepsis or septic shock which is associated with increased rates of preterm delivery, fetal infection, multiple organ dysfunction syndrome, and death.

Sepsis is the situation of systemic inflammatory response syndrome (SIRS) because of an infection. SIRS is defined as the presence of two or more of the following: temperature greater than 38°C or less than 36°C, pulse greater than 90 beats/min, respiratory rate greater than 20 breaths/min, partial carbon monoxide pressure less than 32 mm Hg, and white blood cell count greater than 12,000/mm<sup>3</sup> or less than 4,000/mm<sup>3</sup> [6]. Sometimes, SIRS and sepsis may progress to multiple organ dysfunction and septic shock, which is a more serious and mortal complication.

As the sepsis and septic shock during pregnancy can be fatal, an immediate empiric initiation of a large spectrum antibiotic treatment is vital. But even with the appropriate antibiotic selection and adequate fluid resuscitation, the prognosis is poor, unless the target of the infection is found. Especially in cases of abscess formation in certain tissues or organs, the treatment can be useless if the source of the infection is not drained or excised.

Differential diagnosis of sepsis is important. It tends to occur from specific sources, such as respiratory infections, that are the most common causes of sepsis, genitourinary, and abdominal sources of infection with primary bacteremia and unknown sources being the next most common causes [7]. In pregnancy, premature rupture of membranes and chorioamnionitis also should be considered. In our case, the patient suffered from gastroenteritis before her admission to our hospital. After deterioration of her clinic in the hospital, SIRS and septic shock with hypotension were settled. At first, all our attempts of finding a septic focus failed. But when we examined the right upper quadrant, we could identify a pyogenic abscess in the liver. Our case was successfully treated with an early diagnosis and prompt treatment. After her discharge, her routine visits revealed normal results and she gave birth to a healthy full-term baby.

### Conclusion

Although rare, in situations of sepsis or septic shock in pregnancy, as well as the common sources of infection, a possibility of a liver abscess should also be kept in mind and ultrasonographic evaluation of this region should be considered.

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