

CASE REPORT

Acute Abdomen in a Case of Complicated Amoebic Liver Abscess in Third Trimester of Pregnancy: Diagnostic and Management Problems

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ABSTRACT

Introduction: Amoebic liver abscesses, primarily due to *Entamoeba histolytica*, are prevalent in tropical regions. Undetected, they can reach huge sizes causing febrile illness with features of acute abdomen. Early diagnosis and timely intervention are more crucial in pregnancy to prevent complications not only to mother (like rupture, sepsis and septic shock), but also to fetus. This case discusses the diagnostic and management problems in one such gravid woman with a gigantic Liver abscess presenting with sepsis.

Case Presentation: We present a case of a 39 years, Primigravida at 33 weeks of gestation who presented to emergency with high grade fever, severe pain abdomen, abdominal distension, nausea-vomiting and constipation. She had a qSOFA score of 10 and was admitted in the ICU with Sepsis and Acute abdomen. Investigations revealed a Liver abscess of 1000cc in the left lobe. ICU management was done followed by percutaneous drainage of the abscess was done and patient was started on parenteral meropenem and metronidazole along with close fetomaternal monitoring. Serological tests confirmed *Entamoeba histolytica*. She was discharged with a healthy fetus after 9 days and sent home on Tab metronidazole.

Discussion: This case highlights the importance of considering amoebic liver abscess in patients from endemic areas presenting with fever and right upper quadrant pain. Diagnostic imaging, combined with serology, plays a pivotal role in prompt diagnosis. Antiparasitic therapy remains the cornerstone of treatment, drainage can be considered to hasten the response specially in cases with large collection while other surgical interventions are kept for complicated cases. Acute

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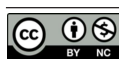
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abdomen and features of peritonitis/empyema/septicemia with a gravid uterus make diagnosis and management very challenging and require tailor-made decision plans. Drainage is also difficult as the uterus pushes the liver up giving only a small window for intervention. Superimposed pyogenic infection may also be there, which may be missed.

Conclusion: Giant Amoebic liver abscesses in pregnancy, though potentially serious, can be effectively managed with early diagnosis and appropriate medical therapy. Multidisciplinary team approach should be considered. This case emphasizes the need for heightened clinical suspicion and tailored treatment strategies to prevent complications.

KEYWORDS

• Amoebic Liver Abscess • Pregnancy • Acute Abdomen

INTRODUCTION

Amoebic liver abscesses, primarily due to *Entamoeba histolytica*, are prevalent in tropical regions. It is rare in pregnancy. Undetected, they can rarely reach huge sizes causing febrile illness with features of acute abdomen. Early diagnosis and timely intervention are more crucial in pregnancy to prevent complications not only in the mother (like rupture, sepsis and septic shock), but also to fetus (like fetal distress/growth restriction or intrauterine demise). This case discusses the diagnostic and management problems in one such gravid woman with acute abdomen and sepsis.

CASE PRESENTATION

We present a case of a 39 years, Primigravida at 29 weeks of gestation who presented to the emergency with high grade fever, severe pain abdomen, abdominal distension, nausea-vomiting and constipation. On examination, she had a PR of 146bpm, BP of 108/46, respiratory rate of 46/min, distended abdomen with right hypochondrial tenderness and fetal tachycardia. She had a qSOFA score of 10 and was admitted in the ICU with Sepsis and Acute abdomen. After due samples, patient was started on parenteral Meropenem and Metronidazole

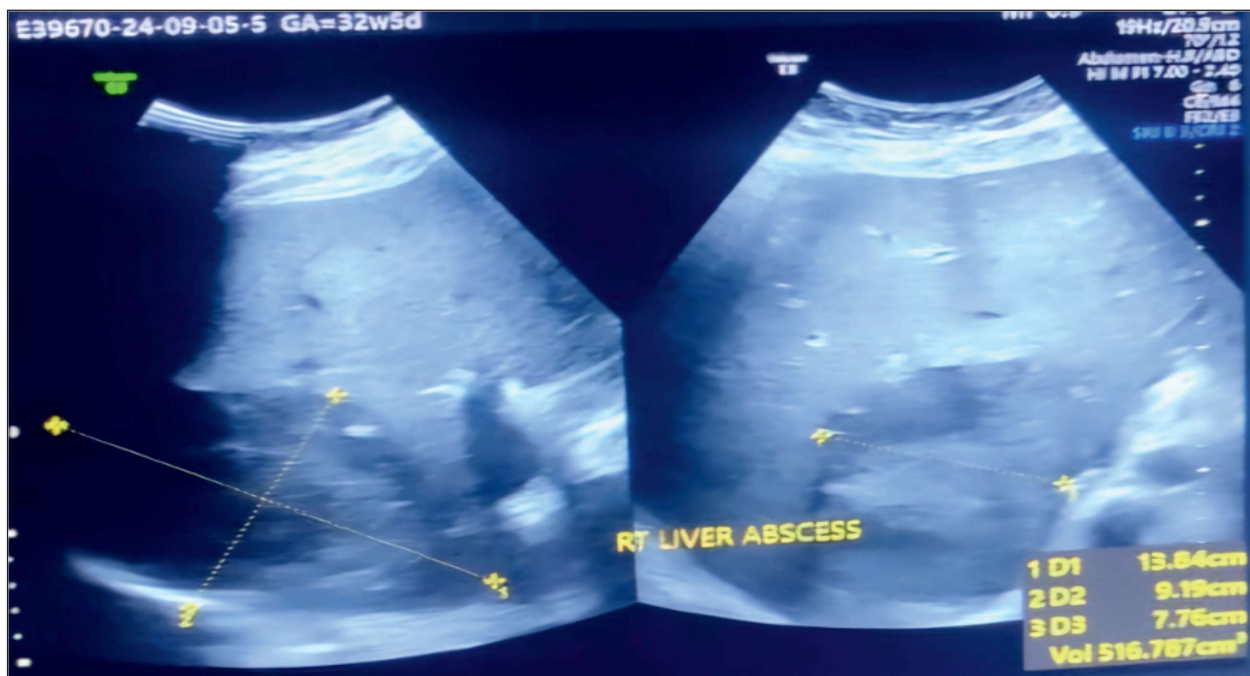


Figure 1: Solitary Liver abscess in Rt lobe of Liver on sonography

along with close Feto-maternal monitoring. Investigations revealed a hepatosplenomegaly and a Liver abscess of a volume of 600cc in the right lobe (figure 1). She had a leucocytosis of 28000, markedly raised Alkaline phosphatase, uncontrolled blood sugars (not diagnosed earlier) reduced magnesium and slightly raised lactate levels (2.4mmol/L). Insulin therapy was started. With deteriorating tachycardia and tachypnoea, ultrasound guided percutaneous drainage of the abscess

was done with a 14Fr pigtail by the Seldingers technique (Figure 2). This was difficult owing to the cranial push exerted by the gravid uterus and distended bowel loops. Uterus was relaxed but progesterones were added to maintain uterine quiescence. However, there was a persistence of moderate right chest and hypochondrial pain. Repeat sonography revealed mild bilateral pleural effusion, which responded to antibiotic therapy and disappeared with the resolution of the abscess.

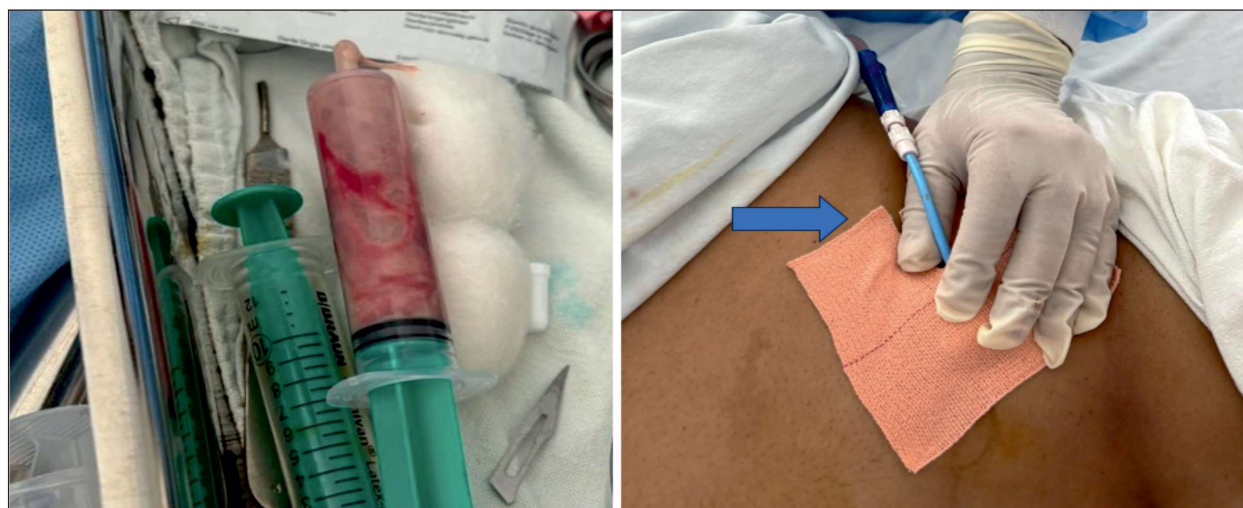


Figure 2: Site of pigtail insertion for drainage of liver abscess in pregnancy

She was closely managed by the Critical care team and over the next 6 days a total of 1100 cc blood mixed pus drained out through the pigtail. Gradually the patient recovered and the pain subsided. The fluid contained blood, plenty of eosinophils and neutrophils. The microscopy of the pus showed no organism, the culture was sterile, but Serological tests by EIA confirmed *Entamoeba histolytica*. Blood culture was sterile. Parenteral antibiotics were continued for 7 days and she was discharged with a healthy fetus after 9 days and sent home on Tab metronidazole and Insulin of daily doses of 50U. On follow up, the leucocytosis came down gradually to 11000 by 2 weeks and the hepatomegaly persisted for almost a month. The patient later developed gestational hypertension also and had an elective caesarean at 38 weeks, delivering a 2.6kg baby.

DISCUSSION

Liver Abscess in pregnancy is a rare morbidity as they are more commonly seen in men. The male to female ratio can vary

from 2:1 to 9:1.¹ These have a higher chance of either causing septicemia or rupturing into the peritoneum to cause septic peritonitis. They can also rupture into the pleural cavity to cause empyema and other complications.

Amoebic Liver abscess is an extraintestinal manifestation of the protozoal infection by *Entamoeba histolytica*. Pregnancy and immunosuppressive states are a known factor for invasive amoebiasis, (undiagnosed diabetes in this patient).^{2,3} It Spreads through contaminated water, but may also spread to sexual partners through direct and sexual contact.⁴ It may present with fever, nausea-vomiting, anorexia and right hypochondrial pain and tenderness.⁵ Colonization of the colon results in the formation of distinct flask-shaped ulcers along the epithelium, and eventual colonic rupture. This can be confirmed on colonic biopsies taken where there is a confusion between Inflammatory bowel disease and Amoebic colitis.⁶

For Diagnosis of amoebiasis, direct microscopy of stool can reveal the active

trophozoite of entamoeba, but this will not detect extraintestinal amoebiasis. Test for Amoebic antibodies by Enzyme Immunoassay (EIA) or Immuno-Fluorescence Testing (IFT) is highly sensitive to detect extraintestinal disease. ALA is the commonest extraintestinal

manifestation, others being cardiac, pleuropulmonary or cerebral complications. However, the antibody test can remain positive even after complete treatment. Imaging is therefore a better modality to follow the resolution of the abscess.

Table 1: Differences in the two types of Liver abscess

Pyogenic liver abscess	Amoebic liver abscess
More common in western countries	Mainly in Tropical and subtropical countries
Content- Yellowish/Greenish pus	Content-Reddish brown colour due to destruction of liver and blood cells
Maybe multiple or solitary (50%)	Usually solitary (80%)
Blood culture shows pyogenic bacteria. E.g- E.Coli, klebsiella, Proteus etc. Maybe polymicrobial	Diagnosis: EIA of blood shows positive serology for Entamoeba histolytica. Stool of cyst may be positive (only in 30% cases)

Table 2: Clinical pointers to type of liver abscess

Diagnostic dilemmas	Points helping in diagnosis/Management
Fever/Leucocytosis	Other causes
Nausea-vomiting with pain abdomen, constipation - Doubt of Intestinal obstruction/ Peritonitis/Abscess/ Labour pains	Presence of bowel sounds ruled out intestinal obstruction. Sonography confirming normal bowel loops and no ascitic fluid. Confirmed solitary abscess in right lobe of liver. Absence of contractions and no dilatation confirmed quiescent uterus.
Distension of abdomen-Whether ascites/ polyhydramnios / obesity with taut abdominal muscles owing to guarding	Ascitis, polyhydramnios- both were absent on sonography.
Choosing drainage over Conservative management	Big size of 13cm with worsening clinical criteria inspite of injectible antibiotics.

In patients with fever and suspected sepsis, triaging and QSOFA scoring is essential for prompt initiation of broad spectrum antibiotics within the first hour after taking the appropriate samples for culture. Infections can be parasitic or pyogenic, which can be differentiated on different criteria Table 1. Diabetes has to be ruled out, which usually predispose to bigger abscesses or septicemia. Obstetric complications like Fetal distress, growth restriction or even intrauterine demise can occur, which requires subsequent counselling and management. There were a number of dilemmas in this patient. The individual doubts and how they were mitigated has been tabulated in Table 2. Treatment is with either oral or parenteral Metronidazole 800mg - 1000mg 8 hourly for 2 weeks. In case of coexisting pyogenic infection. Broad spectrum antibiotics should be added. Unless there is an inflamed colon, intestinal amoebicides like Parmomycin (25mg/kg/day for 1 week) should be added. Others include Dihydroemetine or Diloxanide furoate (500mg 8 hourly for 10 days).⁷ Decision can be made along with an Infectious disease specialist as these are Category C drugs in pregnancy.

Review of Literature was done for Amoebic Liver abscess and only a handful of them have been reported in the last two decades.⁸ Most of the cases were reported in the late 20th Century. With better health facilities, timely diagnosis and treatment, incidence of liver abscess has reduced significantly. Giant sizes, atypical clinical and laboratory parameters can make diagnosis confusing. Rupture can occur during pregnancy or after delivery.⁹

CONCLUSION

Right hypochondrial pain or acute abdomen in pregnancy needs prompt workup and treatment. Though uncommon, Amoebic Liver abscess can complicate a pregnancy and can lead to fetomaternal complications. Diagnosis can be difficult and required a multidisciplinary approach. Complete treatment is absolutely essential with both Metronidazole, antibiotics (if required) and intestinal amoebicides. The critical points for its management is tabulated (Table 3).

Table 3: Take home points for management of ALA in pregnancy

S. no.	
1.	Atypical presentations can occur like no fever, no diarrhoea, only Right sided pleuritic pain, or mild or no leucocytosis. It can mimic Inflammatory bowel disease as well.
2.	There should be a High index of suspicion in endemic/crowded areas, especially in India.
3.	Obstetric morbidity includes miscarriage, preterm labour, fetal growth restriction and IUD.
4.	Sonography or MRI can be used for imaging. Stool microscopy can detect intestinal disease, while EIA/IFT can diagnose liver and other extraintestinal disease. Sometimes colonic or rectal biopsy taken for suspected Inflammatory bowel disease turn out to be amoebiasis.
5.	Treatment: Metronidazole along with intestinal amoebicides like either Paromomycin or Dihydroemetine in the right doses.
6.	Prompt drainage with pigtail catheter is required for sizes more than 5cm and fast resolution of symptoms.
7.	Pyoperitoneum may require laparoscopy or laparotomy. Rupture can occur during pregnancy or even after delivery.
8.	In case of intraperitoneal ruptures, thorough lavage should be done and adequate drains should be placed. One within the abscess, one in the paracolic gutter and the third in the subphrenic space.

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Ethical statement: As it is a case report, no ethical clearance was deemed necessary. A due consent was taken from the relatives for publication of this case.

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