

Challenges in Management and Liver Abscess in General Hospitals with Limited Facilities: A Case Report

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ABSTRACT

Introduction: Liver abscess is a mass containing pus in the liver which can develop into an intra-abdominal infection. Poor environment and sanitation, as well as difficulty in accessing clean water, are risk factors for liver abscesses. We report the findings of patients with liver abscesses, identification, and treatment from Waikabubak General Hospital. **Case Presentation:** Male, 34 years old, came to hospital with symptoms such as right upper abdominal pain since 1 week ago, accompanied by fever and nausea, vomiting. Two weeks previously the patient was said to have loose stools with a frequency of 3-4x/day. The patient is a farmer, drinks boiled tap water every day, and lives in a place with poor sanitation. Physical examination showed icteric sclera, liver palpable 3 fingers below the costal arch, and tenderness (+). Laboratories showed leukocytosis with a predominance of neutrophils and elevated liver enzymes. Ultrasound results showed a mass in the right lobe measuring +/- 4.2 x 4.16cm. The patient was treated with cefotaxime and metronidazole, as well as symptomatic management. Over a week showed clinical improvement, as well as a decrease in the size of the abscess. **Discussion:** The diagnosis is made from anamnesis, physical examination, and limited support. Determining the cause of an abscess is a challenge, the results of leukocytosis with a predominance of neutrophils are a reference in management. Environment and lifestyle are risk factors for liver abscess. **Conclusion:** Immediate and appropriate treatment can reduce the rate of complications. Government participation is needed to improve the quality of health and improve the quality of life of the people of West Sumba.

Keywords: liver abscess; sanitation; health facilities; limited access

INTRODUCTION

Liver abscess is a mass containing pus in the liver which can develop into an intra-abdominal infection.

¹ In general, liver abscess is divided into 2 categories, namely amebic liver abscess (ALA) and pyogenic liver abscess (PLA). ⁴ The causes of liver abscess can be: bacteria (*Escherichia coli*, *Klebsiella pneumoniae*, *Bacteroides*, enterococci, etc.), parasites (*Entamoeba histolytica*, helminths) and fungi (*Candida* species)^{2,3}

The incidence of PLA in the last 10 years in Asia reached 900 cases, while in America there were 2.3/100,000 cases. Nearly 50% of the most common causes of PLA come from biliary tract infections, followed by circulation (hepatic artery and portal vein), percontinuity infection, and penetrating trauma.^{2,4}

ALA is the most common extraintestinal manifestation due to *Entamoeba histolytica* infection. The incidence of ALA is especially in developing countries with poor sanitation and hygiene. Cases in Asia can reach 21/10,000 cases every year.^{4,5} The population at risk of infection is usually men aged 30-60 years, MSM, alcohol consumption, and malnutrition^{2,4}

The clinical manifestations of liver abscess tend to be difficult to distinguish between the exact causes of the two types of liver abscess. ⁴ Patients usually feel pain in the upper right abdomen, fever, anorexia, and weight loss. Even though laboratory results show an increase in alkaline phosphatase, CRP, and liver function (SGOT, SGPT), differences are still difficult to find. Generally, radiological examination of ALA finds a single lesion in the right lobe of the liver, while PLA lesions are multiple. ^{3,4} Aspiration of abscess fluid for culture is a gold standard diagnosis of PLA. Generally, the aspiration fluid in ALA is odorless and brownish, while the aspiration fluid in PLA has a foul odor and is purulent due to anaerobic bacterial infection.^{2,4}

Management of liver abscesses is preferable conservative, given antimicrobials that can target both PLA or ALA. ^{1,4} Invasive therapy such as fluid aspiration or surgical drainage is carried out if an abscess is found that is >5 cm in size, does not respond to antibiotics for 5-7 days, and the abscess is in the left lobe adjacent to the pericardium and for diagnostics.^{1,2,4,5}

The prognosis of PLA and ALA depends on prompt diagnosis, appropriate and adequate therapy. Immediate treatments give better result.⁴ Mortality is generally 2% in hospitals with adequate facilities and less than 10% in inadequate facilities. In cases requiring surgery, mortality can reach 40 - 50%.⁶

CASE REPORT

Male, 34 years old, with complaints of upper right abdominal pain for the last 1 week, accompanied by fever (temperature 38°C), nausea, and vomiting. Two weeks previously the patient was said to have loose stools with a frequency of 3-4x/day. The patient was a farmer in a rural area, drank boiled tap water every day, and lived in a place with poor sanitation.

Physical examination showed anemic conjunctiva, icteric sclera, liver palpable 3 fingers below the costal arch, and tenderness (+). Laboratory showed leukocytosis (leukocytes 14,200) with a predominance of neutrophils (neutrophils 90.9) and increased liver enzymes (SGOT 92.2, SGPT 77.2). Initial ultrasound results showed a hypoechoic mass in the right lobe measuring +/- 4.2 x 4.16cm. The patient was treated with 3x1g cefotaxime injection, 3x500mg metronidazole injection, 3x1g metamizole injection, and 1x 40mg pantoprazole injection. After a week of therapy, the patient showed clinical improvement, as well as a decrease in the size of the abscess +/- 2.86 x 4.7cm.

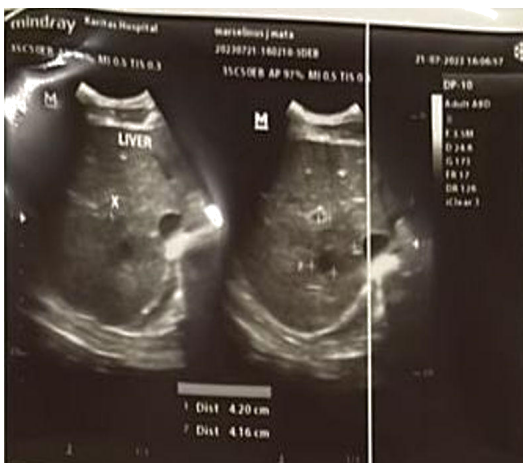


FIGURE 1: Initial Results of Ultrasound.

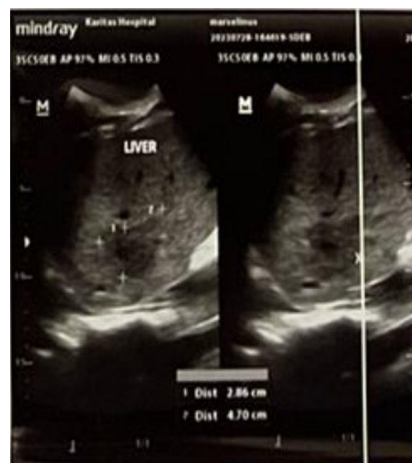


FIGURE 2: Ultrasound Results 1 Week After Therapy.

DISCUSSION

There is literature that states differences in liver abscesses based on the clinical symptoms they cause⁵

Amebic	Pyogenic
Ages <50 years	Ages > 50 years
Men: Women 10:1	Men = Women
Stomach Pain	High Fever
Diarrhea, chronic	Itchy
Hepatomegaly	Jaundice
	Mass Palpable

In this patient, a 34-year-old man, clinical symptoms of right upper abdominal pain, and fever which began with diarrhea 2 weeks earlier were found. Even though a complete stool examination was not carried out, prolonged diarrhea is often caused by parasitic infections (*E. histolytica*). In general, the symptoms are found to be more suggestive of a case of ALA but do not rule out the possibility of mixed infection with PLA.

ALA caused by *Entamoeba histolytica* infection is more often found in patients with lower socioeconomic conditions, contaminated drinking water, and poor hygiene conditions.⁴ The condition of the patient in this report supports ALA with the finding of a patient who is a farmer with a low middle incomes and living in a place with less air circulation and light. Apart from that, toilets with inadequate irrigation risk polluting water sources around the patient's house.

Supporting examinations that support a liver abscess are characterized by an increase in leukocytes, alkaline phosphatase, liver function, and bilirubin. For radiological examination several sources state that in ALA, single, hypoechoic lesions are more often found in the right lobe of the liver, but can also be found in the left lobe and multiples.^{2,4}

The data found in this case, there was an increase in leukocytes (leukocytes 14,200) with a predominance of neutrophils (neutrophils 90.9) and an increase in liver enzymes (SGOT 92.2, SGPT 77.2). Initial ultrasound results also showed a hypoechoic mass in the right lobe measuring +/- 4.2 x 4.16cm. Although alkaline phosphatase, CRP, bilirubin, or CT scans were not carried out due to limited resources in remote areas, the data above can confirm the presence of ALA in this case.

Management of liver abscesses is generally conservative with antimicrobials that can target PLA or ALA.^{1,4} The antibiotics given are a combination of metronidazole or clindamycin and cephalosporin or aminoglycoside. Invasive therapy such as fluid aspiration or surgical drainage is carried out if an abscess is found that is >5 cm in size, does not respond to antibiotics for 5-7 days, the abscess is in the left lobe near the pericardium, and is for diagnostic purposes.^{1,2,4,5}

In this case, the patient was given 3x1g cefotaxime injection, 3x500mg metronidazole injection, 3x1g metamizole injection, and 1x 40mg pantoprazole injection for 7 days. We are considering giving a combination of cephalosporin antibiotics and metronidazole to treat infections while administering metamizole injections and pantoprazole injections only symptomatically. Therapy for 7 days showed clinical and supportive improvements with reduced fever, reduced abdominal pain, nausea, and vomiting. The ultrasound results showed a decrease in the size of the abscess initially to +/- 4.2 x 4.16cm becomes +/- 2.86 x 4.7cm. Consideration of not carrying out invasive procedures such as abscess aspiration due to lack of resources and adequate therapeutic response.

The prognosis of PLA and ALA depends on prompt diagnosis and appropriate and adequate therapy. The longer it is neglected and accompanying complications appear, the worse the prognosis.⁴ In this case, the patient's prognosis is good due to adequate therapy and response.

CONCLUSION

From the cases that have been reported, it can be concluded that there are challenges in diagnosing a liver abscess, especially distinguishing the type in an area with limited facilities. Anamnesis, physical examination, and adequate supporting examinations are needed for good management, especially if complications occur. Adequate human and equipment resources are required. The participation of the government and local health services is needed for clean water as well as educating the public regarding Clean and Healthy Living Behavior (PHBS) to prevent diseases caused by poor hygiene and sanitation.

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