

Amoebic Liver Abscess on 13 Years-Old Boy: A Case Report

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Abstract

Amoebic liver abscess (ALA) is a collection of pus in the liver in response to an intestinal parasite called *Entamoeba histolytica*. The incidence of liver abscesses is rare, ranging from 15-20 cases per 100,000 populations. Liver abscess requires antibiotic therapy and abscess drainage. We present a case of a 13 years old boy with diagnosis Amoebic liver abscess and right pleural effusion. Diagnosis was made based on history of abdominal pain at right upper region, fever, icteric, breathlessness, chest x-ray, and abdominal CT-Scan. Hepatic abscess treatment still raises much controversy as to the desirability of antibiotic therapy alone as well as the choice of antibiotics or the place of drainage or percutaneous evacuating puncture in relation to surgery. The management of our patients was essentially based on antibiotic therapy and the evacuating abscess by drainage. Combination of anti-staphylococcal drug like cloxacillin, an anti-anaerobic and anti-amebic drug like metronidazole and an aminoglycoside or cephalosporin for gram negative bacilli is a good initial choice. Broad-spectrum parenteral antibiotics must be given immediately after the diagnosis of an abscess is established. Therapeutic drainage is not a must in all cases of liver abscesses, although experiences with most series suggest that 80-90% liver abscesses require some form of drainage.

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INTRODUCTION

Liver abscess is defined as a cluster of pus in a newly formed cavity at the expense of the surrounding hepatic tissue, which is destroyed or repressed.¹ Liver abscesses are generally grouped according to the etiology, namely the pyogenic liver abscess and amoebic liver abscess, which provides a nearly identical clinical picture so that the etiological diagnosis is difficult to established.^{1,2} Amoebic liver abscess (ALA) is a collection of pus in the liver in response to an intestinal parasite called *Entamoeba histolytica*.³ The incidence of liver abscesses is rare, ranging from 15-20 cases per 100,000 populations. Three-quarters of liver abscess cases in developed countries are pyogenic liver abscesses, whereas in developing countries more amoebic liver abscesses are found. From January 1997 to August 2004 there were 7 in Department of Child Health, Faculty of Medicine, Universitas Indonesia/Ciptomangunkusumo Hospital.² The incidence of ALA has been reported to vary between 3% and 9% of all cases of amoebiasis.⁴ Amoebiasis was reported for infants as young as 3–6 weeks of age. The source of infection for neonates in most instances is person-to-person transmission from parents or caregivers.⁵ Low socioeconomic status, precarious lifestyle, anemia, and malnutrition have been found to be predisposing factors of LA.⁶

Liver abscess requires antibiotic therapy and abscess drainage. Broad-spectrum parenteral antibiotics that are empirically able to kill gram-negative bacteria, anaerobic bacteria and *Streptococcus*, must be given immediately after the diagnosis of an abscess is established. Therapeutic drainage is not a must in all cases of liver abscesses. However experiences with most series suggest that 80-90% liver abscesses require some form of drainage.

The aim for this case presentation is to point out the clinical manifestation, diagnosis approach, and management of liver abscess in children.

CASE REPORT

A 13 years old boy was referred from Pasaman Hospital with chief complain intermittent abdominal

pain at right upper stomach since 8 days ago, pain like carrying something, no spreading, not affected by activity and food. Fever since 8 days ago, intermittent, not high, no sweating, no shivering, not accompanied by seizure. The stomach felt bigger since 3 days ago. Children looked yellowish since 3 days ago. There was nausea, no vomiting. There were watery stools since 3 days ago, the frequency 4-5 times per day, the amount of ¼ to ½ cup each defecate. The history of the bloody stool and slimy was denied. Last defecation was 1 day ago, soft consistency, the colour is yellow. Breathlessness since 2 days ago, breath didn't be affected by temperature, weather, and activity. There were no bleeding from skin, gum, and gastrointestinal tract. Appetite decreased since ill. The patient used to eat one portion of food, now he just could eat a half portion of food. No history of trauma in stomach. Mixturation was in normal limit.

The patient had been given therapy with IVFD IB 20tpm, meropenem 3x450 mg iv, ceftriaxone 2x1 gr iv, ranitidin 2x50mg iv, tofedex 1x50mg iv, vitagrow syrup 1 times per day.

Patient was a third child from four siblings. Basic immunization was not completed. Patient and her family live in their own home, a semipermanent house with poor hygiene and sanitation.

Patient looks moderately ill, alert, blood pressure

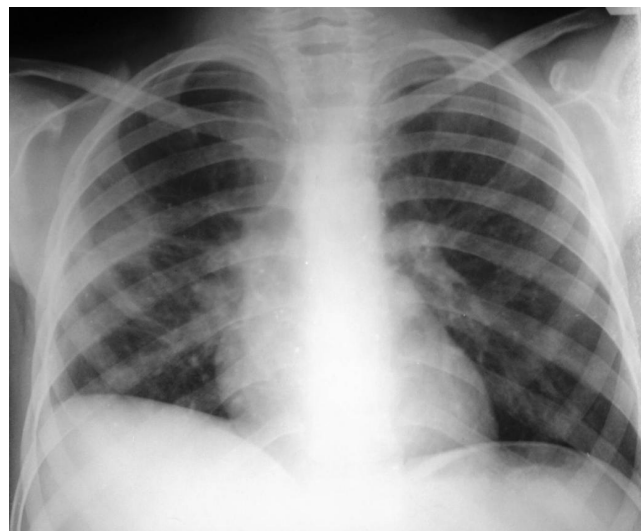


Figure 1. Thorax Rontgen (AP Position)

100/60mmHg, heart rate 110 times per minute. Respiratory rate 28 times per minute. Body temperature was 38,3°C. Body weight was 39 kg. Body height was 135 cm. Weight for age was 57%. Height for age was 84%. Weight for height was 97%, with impression familial short stature and failure to thrive. Conjunctival was anemic, sclera was icteric, pupil was isochor with diameter 2mm/2mm, light reflex was positive normal. Examination on heart within normal limit. On examination of lung: normochest, no retraction, no lagging breath, decreased tactile fremitus in the right side, minimal dullness to percussion in hemithorax dextra, vesicular. Breathsound was decreased from intercostal space VI hemithorax dextra, no rales, no wheezing. There were no abdominal distension. Liver palpable $2\frac{2}{3} - 2\frac{2}{3}$, sharp edge, flat consistency and spleen were not palpable, tenderness at right upper abdomen, no rebound tenderness, peristaltic sound was normal.

The patient has been hospitalized in District Hospital and has laboratory result: HB: 10,0gr/dL,

WBC: 18.000/mm³, Ht : 29,3%, Platelet: 368.000/mm³. PT : 2', APTT: 5', Ureum: 46mg/dL, creatinin: 0,7mg/dL, Potassium: 130 mmol/L, Kalium: 4,0 mmol/L, Chloride: 95mmol/L, SGOT: 427, SGPT: 248. Abdominal ultrasound has been performed with result of suggestive liver abscess on right lobus, cholecistitis, right pleural effusion, minimal accscitess in cavum pelvis.

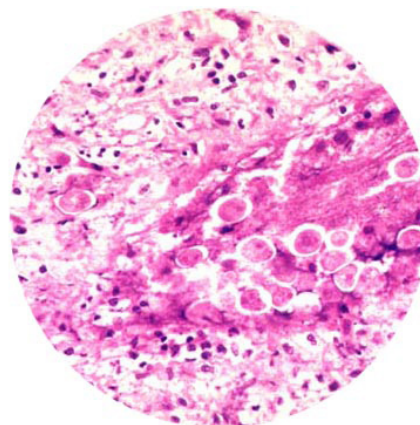


Figure 2. Entamoeba histolytica Fig

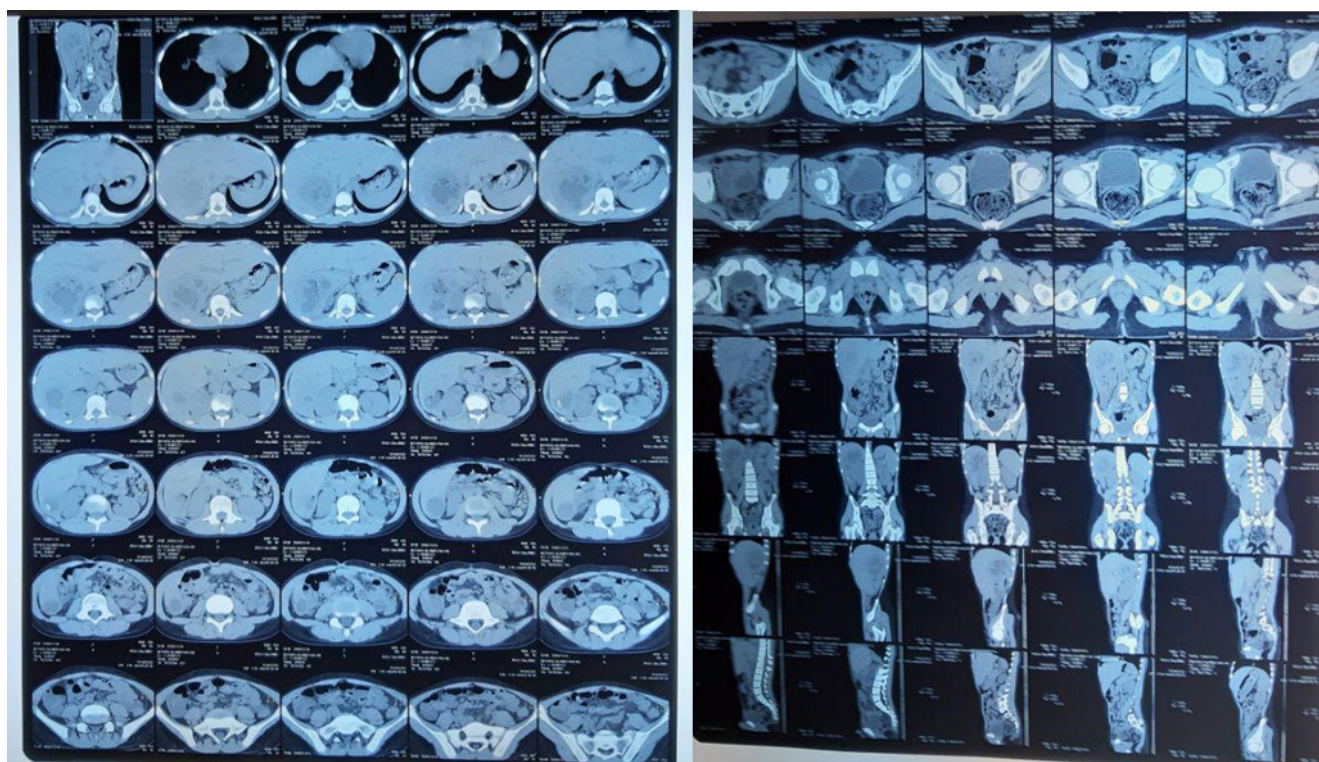


Figure 3. Abdominal CT Scan



Figure 4. Operation of Abscess Draination

Hemoglobin was 9,6 gr/dl, hematocyte: 29%, white blood cell: 25.580/mm³, and platelet: 459.000/mm³. MCV: 80, Gama GT: 93 u/L, albumin: 24 gr/dL, SGOT and SGPT increase significantly. SI low and high ferritin. Bilirubin was +2 in the urinalysis examination, and feses examination the color was pale yellow. Other result within normal limit.

From Chest X ray, there was homogen opaque blunting of the right costophrenic angle with conclusion effusion pleura dextra. From abdominal CT-Scan, liver and spleen look bigger, inhomogeneous density, hypodens lessons at right lobe of liver, indefinite boundary, irreguler side, size 10,25cm x 10,96cm x 11cm. There was no ascites. There was right pleural effusion. The conclusion was it suited right lobe liver abscess and right pleural effusion. Serology anti amoeba found anti amoeba positive (33,2 U).

Patient was treated solid food hepatic diet 2.000 kkal, metronidazol 3x400mg iv, ceftriaxone 2x1 gr iv Kcl 3x500mg po, calc 2x500mg. The patien was consult to Surgery department and agree to perform abscess drainage. From the analysis of parasitological abscesses, it's found *Entamoeba histolytica* and analysis abscess we found thick reddish white abscess, 5cc volume, microscopic cellular debris appears, PMN with a background of amorphous mass. Post drainage, patient planned transfussion PRC 200cc

Since patient no complaints and in stable

condition, he planned to discharge home after 20 days of hospitalization.

DISCUSSION

We present a case of a 13 years old boy with diagnosis Amoebic liver abscess and right pleural effusion. Diagnosis was made based on history of abdominal pain at right upper region, fever, icteric, breathlessness, chest x-ray, and abdominal CT-Scan. Based on epidemiological data, amoebic liver abscess was happened ranging from 15-20 cases per 100,000 populations. Most of liver abscess cases in developed countries are pyogenic liver abscesses, instead of developing countries more amoebic liver abscesses are found.² Upper right abdominal pain is a prominent complaint, the patient appears very ill, fatigue, anemia and has a low to moderate grade fever. Amoebic liver abscess symptoms were generally nonspecific. About 72% of patients complained of fever and pain in the right upper abdomen. In addition, anorexia is found in 39% of cases and weight loss in 29% of cases.^{2,7} It suited with our patient with fever and right upper abdominal pain since 8 days ago. Jaundice is rare, but the patient looked yellowish since 3 days ago. It can be explained by risk of septicemia in this children, because some cases of LA may present with complications like fulminant sepsis or an acute

abdomen either due to rupture of the LA or due to infection of ascitic fluid caused by transmigration of infection.⁸

On physical examination, 83% of cases reported fever and 69% with hepatomegaly accompanied by tenderness. There were watery stools since 3 days ago, it is a response to an intestinal parasite called *Entamoeba histolytica*.³ Normally present in the large bowel, the amoeba usually persist for months or even years as asymptomatic luminal gut infections. But, contrary on culture of feces, it was not found *E. histolytica*. It can be caused by the administration of antibiotic in the last hospital. This patient got right pleural effusion, but minimal. Symptoms such as cough, dyspnoea and severe chest pain suggest intrathoracic involvement due to sympathetic pleural effusion or pneumonia.⁹ Pleural effusion arises by two mechanisms in association with amoebic liver abscess. The first occurs when an amoebic abscess produces diaphragmatic irritation and a sympathetic pleural effusion in a manner analogous to that seen with pyogenic liver abscesses. Amoebic liver abscess also produce pleural effusion when the abscess ruptures through the diaphragm in to the pleural space. In this situation, the pleural fluid is described as “chocolate sauce” or “anchovy paste”¹⁰

Risk factor for this patient suffering liver abscess are low socioeconomic status, anemia, and lack of nutrition. It suited to the reference that low socioeconomic status, precarious lifestyle, anemia, and malnutrition have been found to be predisposing factors of LA.⁶ Studies on amoebic liver abscess carried out in Vietnam, Mexico, India and Bangladesh demonstrated a strong association between ALA and poor socioeconomic status indirectly suggesting that malnutrition is associated with ALA cases.¹¹⁻¹³

Noncomplicated clinical presentation of liver abscess is generally associated with fever, abdominal pain and abdominal mass. The diagnosis can be established by this trias.¹ Our patient got minimal right pleural effusion. It can be caused by the possibility of multiple abscess that broken and penetrates into pleura. So we need more modality such as USG and abdominal CT-Scan to make sure about that possibility.

Beside that, as the serology examination showed the presence of *E. histolytica*, the diagnosis of amoebic liver abscess has been established.

Hepatic abscess treatment still raises much controversy as to the desirability of antibiotic therapy alone as well as the choice of antibiotics or the place of drainage or percutaneous evacuating puncture in relation to surgery. The management of our patients was essentially based on antibiotic therapy and the evacuating abscess by drainage. Clearly, most such abscesses can be cured by metronidazole treatment alone. In a randomized controlled study, no significant difference in either length of hospitalization or duration of time to becoming afebrile was seen between individuals treated with metronidazole alone and those treated with metronidazole as well as percutaneous therapeutic aspiration. In this patient, we performed abscess drainage because it didn't have quite response after four days of antibiotic administration.¹⁴ Evacuating puncture or percutaneous drainage allowed to appreciate the macroscopic aspect of the pus and carry out the cytobacteriological examination.¹ Therapy of amoebic abscess consists primarily of the use of amoebicidal agents, most often metronidazole 50 mg/kg per day in divided doses for 10 days. This patient got metronidazole and ceftriaxone during hospitalized. For Amoebic liver abscess, we need metronidazole to eradicate the *E. histolytica*, but the patient still got ceftriaxone because we still differential diagnosed this patient with pyogenic liver abscess. When the diagnosis of LA is suspected, there is a need to start broad-spectrum antibiotics immediately after collection of microbiological specimen (obtained from abscess puncture and blood cultures) to control ongoing bacteremia and its associated complications.¹⁴ Combination of anti-staphylococcal drug like cloxacillin, an anti-anaerobic and anti-amoebic drug like metronidazole and an aminoglycoside or cephalosporin for gram negative bacilli is a good initial choice.⁷

Surgical drainage is generally not required and mortality rates appear to be significantly higher when this is employed. Indications for surgical drainage include presentation with an acute abdomen

as well as failure of other therapeutic measures. Percutaneous aspiration is more frequently utilized, although evidence of added efficacy to medical therapy alone is unclear. Current indications include poor response to amebicidal therapy after 4–5 days, or as decompressive therapy in those patients in whom rupture of the abscess cavity, into the pleural, peritoneal, or pericardial cavities, seems imminent¹⁵

A report of 38 children with LA in children from Pakistan concluded that the conservative management was effective for smaller abscesses (<5 cm) and percutaneous needle aspiration under US guidance was the best treatment modality for noncomplicated larger abscesses (>5 cm).¹⁶ However, studies have suggested that 80%-90% of LA cases require drainage. When abscess aspirate culture reports are available, the treatment with antimicrobial agents should be directed toward the most commonly involved pathogens. An anti-staphylococcal, anti-anaerobic or anti-amebic drug combined with an aminoglycoside or cephalosporin is an initial choice for antimicrobial therapy.⁸ Ultimately, isolated organisms and their antibiotic sensitivities are detected to make final choice of antimicrobial therapy. Currently 4-6 weeks of antimicrobial therapy is recommended for solitary lesions that have been adequately drained. Multiple LA may require up to 12 weeks of therapy.¹⁷ It suited our patient with the treatment of antimicrobial and the performed drainage and followed by antimicrobial therapy for 4 weeks. Follow up for this patients are about right upper abdominal pain, infection in wound operation, and compliance with taking medication.

CONCLUSION

We present a case of a 13 years old boy with diagnosis Amoebic liver abscess and right pleural effusion. Diagnosis was made based on history of abdominal pain at right upper region, fever, icteric, breathlessness, chest x-ray, and abdominal CT-Scan. Hepatic abscess treatment still raises much controversy as to the desirability of antibiotic therapy alone as well as the choice of antibiotics or the place of drainage or percutaneous evacuating puncture in relation to surgery. The management of our patients

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