

## Gastrointestinal Fistulization in Amebic Liver Abscess

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**Background:** Liver abscess is a common deep seated abscess in children; amebic liver abscess is associated with more local complications. **Case characteristics:** We report two preschool children presenting with short history of pain, fever and right upper quadrant pain. The abscess communicated with gastro-intestinal tract (ascending colon in case 1 and duodenum in case 2), and diagnosis of amebic liver abscess was confirmed by DNA PCR. **Outcome:** Both children were successfully managed with intravenous antibiotics and catheter drainage. **Message:** Gastrointestinal fistulization may be rarely seen in amebic liver abscess. Conservative management with antibiotics, catheter drainage and supportive care may suffice.

**Keywords:** Complication, *E.histolytica*, Hepatic abscess.

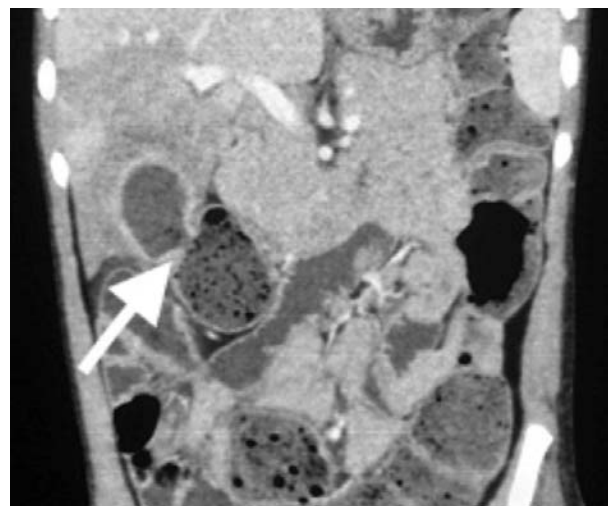
**P**yogenic liver abscess accounts for nearly 80% of all liver abscesses in children; amebic etiology may be frequently encountered in children from tropical developing nations [1,2]. Amebic liver abscess is uncommon in children, but it poses higher risk of local complications, and often proves to be a challenge in management. We report two preschool children with fistulizing amebic liver abscess, who were managed conservatively.

### CASE REPORTS

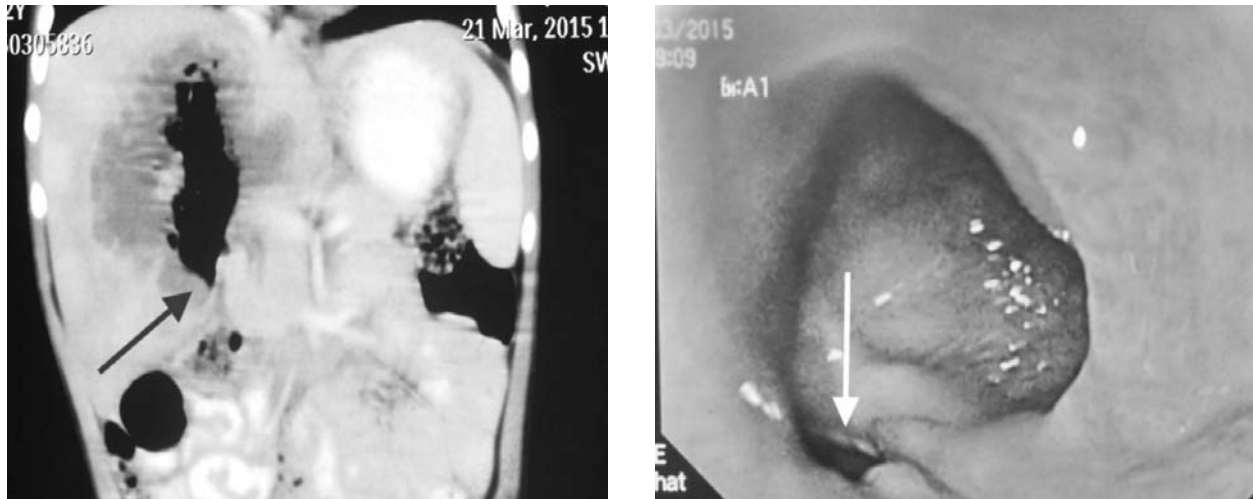
**Case 1:** A 3-year-old girl, presented with intermittent high grade fever with chills for 2 days, which subsided with antipyretics. Subsequently she developed periumbilical pain, which shifted to right upper abdomen. There was no abdominal distension, vomiting or diarrhea. A transabdominal sonography (USG) on day 7 of illness revealed an abscess in right lobe (Segment V), after which she was referred to our center for management. On admission, child was hemodynamically stable, and had mild pallor. Abdominal examination revealed tender hepatomegaly. There was no free fluid or any sign of peritonitis. Systemic examination was normal. Repeat USG revealed abscess in the right lobe of the liver measuring 3.5 × 2.8 cm with probable communication with ascending colon. Contrast enhanced computed tomography (CECT) of abdomen showed air fluid level in the abscess and communication with colon (**Fig. 1**). Blood investigations revealed anemia (Hb 8.1 g/dL), thrombocytosis (Platelet count 650,000/μL), microcytic hypochromic anemia and hypoalbuminemia (serum albumin 2.7 g/dL). Qualitative amebic serology

(RIDASCREEN, Germany) was positive. Bacterial culture from blood and aspirates were sterile. Aspirate from abscess revealed a positive result for amebic DNA by polymerase chain reaction (PCR). Child was treated with metronidazole for 14 days. USG done after 7 days revealed decrease in size of the abscess with disappearance of air fluid level. Child clinically improved and was discharged from the hospital after 10 days of stay. After 3 months, USG showed complete disappearance of cavity and the communication.

**Case 2:** A 2-year-old girl, presented with high grade intermittent fever for 7 days, watery diarrhea for initial



**FIG.1** Coronal CECT abdomen showing abscess communicating with the ascending colon.



**FIG. 2** Coronal CECT abdomen showing large abscess communicating with second part of duodenum (a); Duodenoscopy showing opening at the junction of the D1 and D2 (b).

four days, along with pain and fullness in the right upper abdomen. Child was evaluated at another hospital, where she was diagnosed to have abscess in the segment VI and VII of the liver (**Fig. 2a**), that was communicating with second part of the duodenum. At admission to our center, she was hemodynamically stable, and had severe wasting (weight for length <-3 SD) and mild pallor. Abdominal examination revealed mild hepatomegaly; there were no local signs. She received intravenous ceftriaxone, cloxacillin and metronidazole. Pigtail catheter was inserted under USG guidance. The pus culture revealed growth of *E.coli*, sensitive to amikacin and imipenem, and antibiotics were changed as per the sensitivity. Aspirate was also positive for amebic DNA PCR. Blood investigations revealed microscopic hypochromic anemia (Hb 7.4 g/dL), thrombocytosis (platelet counts 744,000/ $\mu$ L), and hypoalbuminemia (S. albumin 2.2 g/dL). Amebic serology was also positive. After initial stabilization, she was started on liquid diet, but most of the feed drained through the inserted catheter. Duodenoscopy showed an opening at junction of first and second part of the duodenum (**Fig. 2b**). For next 48 hours, she was managed on intravenous fluids. Oral feeds were started gradually, and patient tolerated well, probably due to spontaneous closure of fistulous tract. She was discharged after one-week stay. Intravenous antibiotics were continued for 2 weeks, followed by oral antibiotics for a total of 4 weeks.

Stool microscopy was normal. The acquired and preliminary primary immune deficiency work up like Nitroblue tetrazolium test, immunoglobulin levels and flow cytometry for T and B cell fractions were within normal reference range in both the patients.

## DISCUSSION

In liver abscess caused by *Entamoeba histolytica*, various virulence factors like cysteinease, amebapore and Gal/GalNAc lectin binding protein cause tissue invasion and lead to local perforating complications [1]. Clinical distinction between amebic and pyogenic liver abscess is at times challenging and warrants empirical dual therapy. Amebic serology is nearly 95% sensitive and specific, but in areas of high prevalence false positivity is a problem. DNA PCR from the aspirate is nearly 100% sensitive and specific, but lacks widespread availability [3]. Antigen detection from abscess aspirates hold similar sensitivity and specificity. Size larger than 50 mm, location in left lobe, liver failure or severe sepsis, warrants immediate drainage; continuous catheter drainage is better than single time aspiration [4]. Metronidazole for 10 days is optimum for treatment of amebic liver abscess [2]. Amebic liver abscess is more likely to be associated with local complications like bronchopleural, pericardial, peritoneal and even subcutaneous fistulizations [5]. Hepatico-gastrointestinal lumen perforations are very rare in children; only a few cases are reported [6]. Various treatment modalities are suggested, including major surgeries [7]. Ideal approach would be to individualize the therapeutic options depending upon the physiological status of the patient and expertise of treating center.

To summarize, amebic liver abscess causing gastrointestinal fistulization is rare in children posing diagnostic and therapeutic challenges. Careful clinical and radiological monitoring, and conservative management can be effective.

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