

A Rare Case of Pyogenic Liver Abscess with Perforative Caecal Peritonitis

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Abstract:- Pyogenic liver abscess (PLA) has always been an important and life-threatening scenario and its diagnosis has always been a challenge for physicians. Liver abscesses are frequently encountered in pediatric population in the tropical and subtropical regions. We present a case of pyogenic liver abscess with caecal perforative peritonitis. Due to the critical clinical condition caused by the sepsis and contained rupture of the abscess we opted for open surgical drainage, with an acceptable postoperative protocol. Clinical presentation, diagnostic techniques and current management options are discussed.

Keywords:- Pyogenic Liver Abscess, E.Coli, Caecal Perforation.

I. INTRODUCTION

Pyogenic liver abscess (PLA) is an important cause of morbidity and mortality. Its diagnosis is always challenging, mainly because there is a significant clinical and radiological overlap with other hepatic conditions such as amoebic abscess and infected hydatid cyst. The treatment options of pyogenic liver abscess have included both medical (antibiotics alone) and surgical interventions (needle aspiration, catheter drainage, endoscopic drainage or open surgical drainage). Imaging studies [ultrasonography (USG) and computed tomography (CT)] aid in diagnosis (1). We present a case of immunocompetent girl with pyogenic liver abscess with caecal perforative peritonitis.

II. CASE REPORT

The 13 year old girl had presented with the complaints of fever and vomiting since 12 days along with pain in abdomen since 10 days. Fever was associated with chills and rigors. It was high grade, continuous in nature and increased since last 3 days. Vomiting 3-4 episodes daily, containing undigested food particles usually within 30 minutes after having food. Pain in abdomen was dull aching, initially more in the right hypochondrium and in epigastric region and since last 3 days it was diffuse. There was also history of loose stools (6-8 episodes per day) 12 days back which lasted for 2-

3 days and got relieved after taking medication. Since then the child was passing stools normally.

On general examination, child was afebrile with pulse rate: 98/min, respiratory rate: 24/min and Blood Pressure: 104/60mmHg. Pallor and icterus were present.

Abdomen was distended, umbilicus was central with transverse slit. Diffuse tenderness was present with guarding. Liver was palpable 2 cm below right costal margins along mid-clavicular line. It was smooth, soft to firm, tender and both lobes were enlarged. Spleen was just palpable and firm. Bowel sounds were present. On respiratory system examination, Chest was bilaterally symmetrical; chest movement was slightly decreased in left lower zone with a dull note on percussion and air entry was reduced in same area. There was no other systemic abnormality. Routine Investigations were done and the results are depicted in Table 1.

Sr. No.	Investigation	Data
1	Haemoglobin	12.4 g%
2	Total Leucocyte Count	24500/cu.mm
3	C-Reactive Protein	131.2 mg/L
4	ESR	100 mm/hr
5	PT; aPTT; INR	14s; 34s; 1
6	SGOT; SGPT; Alkaline Phosphatase	50U/L; 64U/L; 104U/L
7	Bilirubin; Protein; Albumin	2.4 mg/dL; 6.6 g/dL; 2.4 g/dL
8	HIV; HBSAg; HCV	Non-reactive
9	Stool routine microscopy	Pus cells: 18-20/hpf & mucus ++

Table 1: Investigations

Ultrasonography of Abdomen was suggestive of mild hepatomegaly with liver abscess of 70 x 66 x 65 mm (158 ml volume) in right lobe of liver and also a large liquefied exophytic abscess arising from left lobe (89 x 77 x 70 mm) which was sub-diaphragmatic and caused mild elevation of left dome of diaphragm. There was evidence of free fluid in abdomen. Ultrasonography of thorax was suggestive of

minimal left sided pleural effusion with moderate ascites with septations within. Pleural fluid tapping was suggestive of normal study. No organisms were isolated on blood culture.

Injection pantoprazole, cefotaxime and metronidazole were started. Surgical reference was done and emergency open surgical drainage was advised. Exploratory laparotomy was done where caecal perforation was detected which was 5mm in size. Closure of caecal perforation with loop ileostomy was done along with aspiration of liver abscess. 500 ml of serous fluid with pus flakes was seen in pelvis which was aspirated.

After the procedure, the child was kept nil by mouth. Child was gradually started on liquid feeds and as she was tolerating it, solid food was introduced subsequently and drains were gradually removed one by one.

On culture of peritoneal fluid, E. Coli was seen that was sensitive to amikacin, gentamycin, tigecycline and colistin. As per culture report, antibiotics were then added. Liver abscess pus was sent for microscopy which showed gram negative E.coli bacilli.

Repeat ultrasonography was done after 7 days which showed 20 to 25 cc of hypoechoic partially liquefied liver abscess. Patient was discharged after completing 2 weeks of intravenous antibiotics. She was advised oral antibiotics for one month. After 1 month, the patient was called for follow-up and closure of ileostomy. Patient tolerated the procedure well. Antibiotics were continued and repeat USG abdomen was done which was suggestive of residual liver abscess less than 2cm. Patient was discharged after 1 week.

III. DISCUSSION

Pyogenic liver abscesses are rare in children with incidence of over 79 per 100000 hospitalizations. In a meta-analysis, Mishra et. al. reported that a majority (more than 65%) occur in the right lobe and are usually solitary (1). The most common organism responsible for PLA in children is *Staphylococcus aureus*; other species implicated are *E. coli*, *Klebsiella*, *Enterobacter* and anaerobes (1). Blood culture results are usually positive in one-third of patients presenting with PLA. Negative cultures are usually obtained if patients have been pre-treated with antibiotics. Almost 50% of patients may also have positive cultures from the material obtained from the abscesses. Cultures usually demonstrate gram-negative aerobes and anaerobes (2, 3). Pyogenic liver abscess can be caused by bacteria gaining entry into the liver via (a) portal circulation in case of omphalitis, portal vein pylephlebitis and intraabdominal infection; (b) a primary bacteremia or bacteremia secondary to biliary tract diseases or infections and (c) rarely after percutaneous liver biopsy.

Usually, patients with liver abscess present with fever and abdominal pain. Presentation can include a broad range of complaints including nausea, vomiting, weight loss, jaundice etc. In addition to jaundice, systemic examination

may show hepatomegaly and right upper quadrant pain although this is seen in only about 50% of cases (4).

The most common laboratory abnormalities are hypoalbuminemia, elevated liver enzymes, and leucocytosis (5). Computed Tomography or USG aid in diagnosis. Ultrasonography is the investigation of choice and can detect almost 100% of abscesses (6).

The antibiotics are usually administered intravenously for at least 14 days, followed by oral administration for 4 weeks (6). USG-guided percutaneous needle aspiration is usually the preferred modality of treatment as it is safe, rapid and simple. (7). Minor complications associated with this procedure are hemorrhage into the abscess cavity and pericatheter leak (8). Open surgical intervention is now advised for (a) Non-response to needle aspiration or catheter drainage; (b) large size of abscess; (c) when risk of rupture is high; (d) contained rupture and (e) presence of peritonitis. Surgical intervention is associated with complications such as respiratory infection, wound infection, ileus, intra-abdominal collections, wound dehiscence, hemorrhages, biliary fistula and increased mortality (9). We opted for open surgical drainage for our case as the patient had presented with a contained rupture of the liver abscess. However, with the introduction of antibiotic therapy, imaging studies and the drainage success, mortality rates have decreased to a large extent.

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