



BMH Med. J. 2025;12(2):17-20. **Case Report**

Pleural effusion as an extrahepatic manifestation of Hepatitis A infection in a child

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Abstract

Acute viral hepatitis A is a common infection among children in developing countries. It is usually a self-limiting infection, but rarely can be associated with hepatic complications like fulminant liver failure as well as extrahepatic manifestations such as pleural effusion, acalculous cholecystitis, pancreatitis and acute kidney injury. Pleural effusion is an extremely rare extrahepatic complication reported in literature. We report here a case of a small child where acute viral hepatitis A was complicated by bilateral pleural effusion. The child was managed conservatively and showed complete resolution of the effusion.

Keywords: Hepatitis A virus infection, pleural effusion, extrahepatic manifestations

Introduction

Hepatitis A (HAV) infection in children is typically an acute, self-limited illness associated with nonspecific symptoms such as fever, malaise, vomiting, abdominal pain and diarrhoea [1]. Symptomatic hepatitis occurs in approximately 30 percent of infected children younger than six years and the symptoms usually lasts for less than two weeks. However, hepatic and rarer extrahepatic manifestations can complicate typical cases of acute viral hepatitis. Pleural effusion is a rare extrahepatic complication which can present during the early stages of the disease [2]. The first case of HAV infection complicated by pleural effusion was reported by Gross and Gerding in 1971 [3].

Case Description

A previously well small child presented with complaints of fever, vomiting of 8 days duration followed by cough and breathing difficulty of 2 days duration. On examination, the child was icteric, febrile and had increased work of breathing, intercostal indrawing and grunting. Systemic

examination revealed decreased air entry over right infra-axillary and infra scapular areas and tender hepatomegaly. Blood investigations showed normal blood counts, and deranged liver function tests (Total bilirubin/Direct bilirubin (mg/dl) - 8.3/5.3, SGOT/SGPT (U/L) - 325/1382) with normal coagulation profile. Serology for HAV was positive. Chest X-ray showed bilateral pleural effusion (right>left) [Figure 1]. USG Abdomen showed hepatomegaly and minimal ascites,. Patient was admitted in pediatric high dependency unit and managed with nasal prong oxygen, IV fluids, antibiotics and liver supportive measures. Pleural effusion was monitored by serial bedside USG done daily which showed gradual resolution. Respiratory distress also improved and was weaned off oxygen and shifted to room by day 5. Biochemical parameters also showed recovery in liver function tests (Table 1). Child was discharged on day 7 and USG Chest done on follow up visit (day 10) showed complete resolution of pleural effusion.

Parameter	Day 1	Day 3	14/08	Day 7	Day 10
Serum Bilirubin	8.3/5.3	6.1/3.8	3.9/2.0	3.1/1.3	2.0/0.8
Total/Direct (mg/dL)					
SGOT/SGPT (U/L)	325/1382	99/565	77/343	55/220	41/52
Albumin (g/dL)	2.8	3.2	3.5	4.1	4.2
PT/INR	13 s/1.3	11s/1.0	-	-	13 s/1.3
S. Amylase (U/L)	75	-	80	-	-

Table 1: Trend of Liver function tests and Serum Amylase

Discussion

HAV is the most common cause of acute hepatitis in children and is a major public health concern in low-income countries. In 2024, there was outbreak of HAV in various parts of Kerala, with increased incidence of acute liver failure and mortality. Extrahepatic manifestations can also complicate typical cases of acute viral hepatitis which include pleural effusion, acalculous cholecystitis, pancreatitis, acute kidney injury, autoimmune hemolytic anemia, aplastic anemia and glomerulonephritis. Among the extrahepatic manifestations, pleural effusion is a rare complication that is scarcely reported in literature (20 published case reports). It is notable that most cases of HAV infection with pleural effusion reported in literature were from the pediatric population with average age of 9 years. In the case reported here, HAV infection was complicated by bilateral pleural effusion (right>left) early in the course of illness. Pleural effusions complicating HAV infection has been mostly reported in the right side (50%), followed by bilateral effusion (45%) and rarely on left side alone (5%) [4]. Hepatomegaly and ascites occurred concurrently with pleural effusion in 80% and 70% of the reported patients. Most of the previous reports with a Pleural fluid analysis showed a transudative nature of the effusion [5].

Discussion

HAV is the most common cause of acute hepatitis in children and is a major public health concern in low-income countries. In 2024, there was outbreak of HAV in various parts of Kerala, with increased incidence of acute liver failure and mortality. Extrahepatic manifestations can also complicate typical cases of acute viral hepatitis which include pleural effusion, acalculous cholecystitis, pancreatitis, acute kidney injury, autoimmune hemolytic anemia, aplastic anemia and glomerulonephritis. Among the extrahepatic manifestations, pleural effusion is a rare complication

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Figure 1: Chest X-ray of the child at admission showing pleural effusion

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The exact mechanism of pleural effusion associated with HAV infection is unknown. The proposed mechanisms include direct viral invasion of pleura, immune complex deposition and the associated ascites contributing to the effusion via diaphragmatic lymphatics [6]. As in the index case, review of previous reports shows that pleural effusion due to HAV infection may be a benign early complication and does not require any medical or invasive interventions [7].

Spontaneous resolution was observed in all previous reported cases except one child with chylothorax, where chest tube insertion was needed [8].

Conclusion

Pleural effusion is a rare, benign and early extrahepatic complication of acute HAV infection with a juvenile predilection. Physicians and paediatricians need to be aware of this rare association in order to avoid unnecessary investigations and interventions.

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