Introduction: Acute Hepatitis A Virus (HAV) infection is common in the developing countries among children, but hydrops of gallbladder due to hepatitis A infection is an uncommon presentation.

Case Presentation: A five-year-old boy was admitted in Namazi Hospital, Shiraz, Iran due to jaundice and severe abdominal pain for 10 days. Physical examination revealed a mass in the right upper quadrant with severe tenderness. Liver function tests were abnormal while other laboratory data such as blood urea nitrogen, serum creatinine, sodium, and potassium were within the normal range. Blood and urine cultures were negative. Abdominal ultrasonography showed that the gallbladder was very much distended and its fundus was near the iliac crest. Hydrops of the gallbladder was diagnosed. HAV IgM titer was high. After five days, without any specific treatment, his symptoms improved and he was discharged with good condition.

Conclusions: Acute acalculous gallbladder disease is a rare complication of HAV infection which should be suspected in any child with right upper quadrant abdominal pain, tenderness, and mass which can lead to surgical emergency in rare conditions.

Keywords: Gallbladder; Children; Hepatitis A
and antibiotics were stopped. Surgical intervention was not required in the patient. After five days, general condition and abdominal pain of and jaundice improved and he was discharged with close follow up.

Figure 1. Abdominal Ultrasonography

Abdominal ultrasonography showed normal size and echogenicity of the liver, with significantly distended gallbladder (span 150 × 50 mm); fundus of gallbladder was near iliac crest. The thickness of gallbladder wall was normal and no stone was detected. The hydrops of gallbladder was confirmed.

3. Discussion

Hepatitis A Viral infection is a wide spread infection throughout the world. In the developing countries, hepatitis A viral infection is common during childhood. In these countries, 92% to 100% of the 18-year-old people have serologic evidence of past infection (1). Infants and toddlers are more likely to be asymptomatic (anicteric hepatitis), whereas the majority of adults will develop clinically evident hepatitis (1). One of every 12 young children develops jaundice, and children are more likely than adults (60% vs. 20%) to have diarrhea, often leading to the mistaken diagnosis of infectious gastroenteritis (1). Gallbladder hydrops due to hepatitis A viral infection is uncommon and is exceptionally described in the literature (2-4).

Abdominal pain, vomiting, and RUQ mass in abdominal examination are the typical presentations of gallbladder hydrops. Kawasaki syndrome (5), mesenteric adenitis with pressure over cystic duct (5), streptococcal and staphylococcal infections with the associated toxin production (6), viral hepatitis, Henoch-Schoenlein purpura (7) and hypokalemia (8) had reported association with hydrops of gallbladder. Other etiologies include tumors, polyps or malignancy of the gallbladder, spontaneously resolved acute cholecystitis, congenital narrowing of the cystic duct, parasites such as ascaris (occasionally), prolonged parenteral nutrition, typhoid, leptospirosis, and appropriate response to ceftriaxone therapy (1). Although the etiology is unclear, invasion of the gallbladder and bile duct epithelial by hepatitis A viral infection and cell-mediated immunologic response are proposed in the pathogenesis of cholecystitis resulted from HAV infection (9).

Low grade fever, colicky abdominal pain, vomiting, right sub costal tenderness, and a palpable tender mass in RUQ are common (1). A mild, direct hyperbilirubinemia may also be present. If the infection left untreated, it can rapidly progress to gallbladder gangrene and perforation leading to peritonitis, sepsis, and shock. In uncomplicated acute cholecystitis, liver function tests are normal or there is only slightly liver enzyme elevation. Mild cholestatic abnormalities (increased bilirubin up to 4 mg/dL and elevated alkaline phosphatase) are common, probably indicating the mechanical obstruction of the cystic duct resulting from intrinsic inflammation of the biliary tract (10). The diagnosis of hydrops is generally made by abdominal ultrasonography demonstrating a markedly distended, echo-free gallbladder with normal wall thickness and a normal-caliber biliary tree. Serial ultrasonographic examination is useful to monitor the patient and detect the resolution (10).

Surgery should be reserved for the exceedingly rare complications of gallbladder perforation. Symptomatic abdominal pain may resolve after one or two days (11). The treatment of gallbladder hydrops varies depending on the clinical condition. Most cases are self-limited and size of the gallbladder may spontaneously become normal with treatment of the underlying disease within approximately two weeks (1). In conclusion, in the case of hepatitis A viral infection with severe abdominal pain and specially RUQ abdominal mass, hydrops of gallbladder should be kept in mind as a possible complication and abdominal ultrasonography should be done accordingly.

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Authors’ Contributions

Mahmoud Haghighat is responsible for literature search and manuscript editing; Seyed Mohsen Dehghani was the supervisor and followed the case; Mitra Aldaghi wrote the draft and collected data.

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