

Gallbladder Hydrops Associated with an Episode of Acute Liver Toxicity in the Adult: May It Be Considered a Surgical Emergency or Not?

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ABSTRACT

Introduction: Gallbladder hydrops is an increase in the volume of the gallbladder without any inflammatory sign, bacterial infection or the presence of any abnormalities of the biliary ducts or of the gallbladder. **Case presentation:** A 52-year-old man presented at the Department of Internal Medicine complaining of moderate intensity pain in the right upper quadrant, low fever, fatigue, general weakness, symptoms stemming from an excessive intake of food (a meal abundant in animal proteins, fats, and alcohol) which appeared following a 6-week period of food restriction. On examination, the patient presented a globular abdomen, sensitive to deep palpation in the right upper quadrant, the liver and spleen being impalpable. Blood tests performed on admission showed liver-specific pathological changes. Abdominal ultrasound revealed hepatomegaly with homogeneous echostucture, slightly increased echogenicity with rear attenuation, with no focal images, intrahepatic biliary duct dilatation, or dilated suprahepatic veins. The gallbladder looked dropsical, with slender walls, with images of hyperechoic infundibular calculi with a posterior shadow cone, the largest having 14 mm. The portal vein and bile duct were normal in appearance. **Conclusions:** Gallbladder hydrops is a disorder commonly seen in children. Its occurrence in adults is uncommon, moreover since it occurs simultaneously with an episode of acute toxic hepatitis. Surgery for this patient was possible only after normalization of liver function tests, on admission there being no subjective complaints of marked intensity that required immediate surgery.

Keywords: gallbladder hydrops, acute toxic hepatitis, surgery

INTRODUCTION

Gallbladder disease is classified into acute and acalculous, acalculous ones can be further subclassified into gallbladder hydrops and acalculous cholecystitis. Gallbladder hydrops is defined as an increase in the volume of the gallbladder without any inflammatory sign, bacterial infection, or the presence of any abnormalities of biliary ducts or of the gallbladder.¹

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The absence of inflammation is one of the characteristics of a good prognosis and it differentiates gallbladder hydrops from acute acalculous cholecystitis.² Gallbladder hydrops is sometimes reported in children.³ We present the rare case of a male patient with calculous gallbladder hydrops simultaneous with an episode of acute toxic hepatitis.

CASE PRESENTATION

A male patient, VA, from a rural area, aged 52 years, was admitted to the Department of Internal Medicine for one week complaining for approximately 3–4 days before admission of moderate pain in the right upper quadrant, low fever, fatigue, general weakness, symptoms stemming from an excessive food intake (meals abundant in animal protein, fat, and alcohol), which appeared after a food restriction of 6 weeks (religious fasting). The patient's history included significant hypertension diagnosed in 2005, under chronic treatment with antihypertensives.

Physical examination revealed the following: height 1.8 m, weight 124 kg and waist size 130 cm. Inspection showed a globular abdomen, sensitive to deep palpation in the right upper quadrant, with impalpable liver and spleen. Blood tests performed at admission, during hospitalization and at discharge (the patient was hospitalized for a week): GGT 754 U/L, AST 381 U/L, ALT: 446 U/L, direct Bi: 2.37 mg%, total Bi: 1.72 mg%, platelet count: 72,000/mm³; during hospitalization: GGT 602 U/L, AST 145 U/L, ALT 274 U/L, direct Bi: 2.04 mg%, total Bi: 2.94 mg%, platelet count: 96,000/mm³; and before discharge: GGT 558 U/L, AST: 96 U/L, ALT: 175 U/L, direct Bi: 0.42 mg%, total Bi: 0.8 mg%, platelet count: 151,000/mm³.

Abdominal ultrasound revealed the following features: hepatomegaly with homogeneous echostructure, slightly increased echogenicity with rear attenuation, with no focal images, intrahepatic biliary duct dilation, or dilated suprahepatic veins. The gallbladder looked dropsical, long axis: 12 cm, short axis: 4 cm, slender walls, with images of hyperechoic infundibular calculi with a posterior shadow cone, the largest having 14 mm. The portal vein had normal size and hepatopetal flow in the main portal vein. The main biliary duct also had normal size.

One week after the discharge from the Department of Internal Medicine the patient was admitted to a surgical department where laboratory tests were repeated: ESR 7 mm/h, INR: 0.98, platelet count: 162,000/mm³, direct Bi: 0.35 mg%, total Bi 0.81 mg%, AST: 25 U/L, ALT: 41 U/L, GGT: 64 U/L. The patient underwent surgery (laparoscopic cholecystectomy) and the surgeon described the

following intraoperative aspects: distended gallbladder with signs of pericholecystic and multiple lax cholecysto-jejunal posterior and infundibular adhesions. The gallbladder was about 15 cm long and 5 cm in transverse diameter, with a thin wall, containing a semi-transparent fluid (about 300 ml).

DISCUSSIONS

Cholelithiasis does not always have clinical symptoms and may be found occasionally when performing an abdominal ultrasound. From an epidemiological point of view, about 1–4% of patients may experience yearly symptoms, the most common presentation is biliary colic (56%), or acute cholecystitis (36%).⁴ More than 90% of the cases of acute cholecystitis are due to cholelithiasis. Most patients are asymptomatic.⁵ Of the 1–4% of cases, about 20% develop clinical symptoms.⁶ Such patients are often elderly ones and some have bouts of acute cholecystitis with no previous bile symptoms.^{7–9} After an attack of acute cholecystitis, symptoms such as pain or inflammation are common.¹⁰ Although gallstone disease is more common in the elderly, the incidence of acute cholecystitis has dropped, because patients are operated on by laparoscopic cholecystectomy when gallstone symptoms occur.¹¹ Regarding the frequency of acute cholecystitis according to gender, 60% of patients are women and half of these cases are due to gallstones, but the one occurring in men tends to be more severe.^{12,13} In our case the symptoms presented by the patient were uncharacteristic and vague, suggesting a hepatobiliary condition. We could rule out the possibility of an acute cholecystitis because the inflammatory and infectious factor were not present. The essential factor for the development of acute cholecystitis is cystic duct obstruction in the presence of a cholesterol-saturated gallbladder.¹⁴ The immediate effect is pain, but inflammation occurs within hours. The gall bladder expands by inflammation, its wall thickens and becomes hyperemic and a pericholecystic exudate can develop.⁵ Although initially sterile, the content of the gallbladder is quickly infected with microorganisms of enterobacteriaceae and anaerobic enterococci, and the wall of the gallbladder may show necrosis or gangrene may appear (gangrenous cholecystitis), ultimately leading to perforation of the bladder.^{15,16} The peculiarity of this case is that, although a week had passed after the onset of clinical symptoms, the patient showed no local inflammation or biliary infection. According to the 2007 Tokyo guidelines which state that edematous cholecystitis may occur in 2–4 days, necrotizing cholecystitis after 3–5 days, and suppurative

cholecystitis after 7–10 days, the patient did not present any of these forms of acute cholecystitis, ultrasound examination revealed only the expansion of the gallbladder (gallbladder hydrops).¹⁷

Frequently, a slight increase in transaminases and bilirubin can occur in cases of acute calculous cholecystitis.¹⁸ Here we had a large increase in serum transaminases with normal bilirubin. According to the guidelines for acute hepatitis, ALT (SGPT) values between 50–2,000 IU are considered significant, while in our case the highest value was recorded for gamma-GT, which is suggestive for the effect of ethanol on liver function.¹⁹ The toxic effect of ethanol on liver function is well known. We consider this case an episode of acute hepatitis caused by acute alcohol consumption, and not a chronic one. This was also proved by liver transaminase levels, which tended to normalize within a short time of about a week, and by ultrasound examination, which revealed no hepatic steatosis typical for a chronic consumer of ethanol.

Feverishness, moderate pain in the right upper quadrant, nausea are common symptoms of clinical hepatitis and gallbladder disease. In uncomplicated acute cholecystitis liver tests are normal or slightly elevated.²⁰ After a sparing diet, antibiotic treatment (ampicillin), hepatoprotective medication and bed rest, the clinical outcome and laboratory tests were favorable.

CONCLUSIONS

A condition seen most often in children, gallbladder hydrops can be encountered in adults less frequently, moreover it occurs simultaneously with an episode of acute toxic hepatitis. Surgery was performed only after normalization of liver function tests and it was not imposed urgently by the patient's clinical condition and laboratory test results. This case demonstrates the need for flexible medical judgment at the bedside, and not a strictly standardized one according to medical guidelines.

CONFLICT OF INTEREST

Nothing to declare.

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