Obstructive Jaundice Caused by Non-Parasitic Hepatic Cyst Treated with Percutaneous Drainage and Instillation of Minocycline Hydrochloride as a Sclerosing Agent

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We report a case of obstructive jaundice caused by a large hepatic cyst which was successfully treated by percutaneous drainage and instillation of minocycline hydrochloride. An 88-year-old man presented with obstructive jaundice and upper abdominal fullness. Abdominal CT and ultrasonography revealed a large hepatic cyst and intrahepatic bile duct dilatation. After the percutaneous drainage of the cyst, minocycline hydrochloride was instilled as a sclerosant via a catheter into the cyst cavity. Liver enzyme levels returned to normal and the jaundice disappeared. Nine months after the treatment, the large cyst and dilatation of the intrahepatic bile duct had disappeared. The patient has remained healthy without symptoms.

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Key words: non-parasitic hepatic cyst, obstructive jaundice, sclerotherapy, minocycline hydrochloride

Introduction

Non-parasitic hepatic cysts are usually asymptomatic and are only occasionally associated with clinical symptoms which include upper abdominal distension and discomfort (1-3). Obstructive jaundice is another rare complication of solitary hepatic cyst (4, 5). We successfully treated obstructive jaundice which was caused by non-parasitic hepatic cyst by percutaneous drainage and instillation of minocycline hydrochloride as a sclerosing agent.

Case Report

An 88-year-old man was admitted to Saga Medical School Hospital on July 5, 1994. He complained of upper abdominal discomfort, jaundice and general fatigue which developed over the 2-month period prior to admission. Hepatic cyst had been diagnosed 4 years earlier, and he had visited a community hospital. Two years before admission, he had undergone ultrasound-guided cyst aspiration because the cyst had gradually increased in size. The attempt, however, was not successful and was complicated by secondary peritonitis. On admission to our hospital, physical examination revealed profound jaundice without signs of chronic liver disease. The liver edge extended 3 cm below the right costal margin. Total bilirubin was 8.2 mg/dl, direct bilirubin 4.6 mg/dl, ALP 3,840 IU/ (normal value 86 to 218), ALT 257 IU/ (normal value <35), AST 210 IU/ (normal value <35). Ultrasonography (US) and computed tomography (CT) showed a noncalcified cyst in the region of the porta hepatis, measuring 11 × 9 × 16 cm. The left and right intrahepatic bile ducts were dilated and the common bile duct could not be precisely identified (Figs. 1, 2).

The patient then underwent a trial of percutaneous drainage with a 7-French pigtail catheter. During the first 3 days, 1,340 ml of clear and straw-colored fluid was drained. The fluid obtained from the cyst was negative for cytology, culture and parasite tests. After drainage, the size of the cyst diminished rapidly and the jaundice improved. We suspected that the bile duct had been compressed by the large cyst at the porta hepatis. Cystography, 3 days after the insertion of the drainage tube, showed no leakage or communication between the cyst and the intrahepatic bile duct (Fig. 3). Then 10 ml of 1% xylocaïne and 500 mg of minocycline hydrochloride diluted in 10 ml of saline were instilled through the catheter into the cyst cavity. The patient was rotated through several positions and the minocycline solution was then removed. The drainage catheter was left in place to ensure complete drainage of all the fluid. Moderate fever occurred on the day of instillation and disappeared spon-
Transverse ultrasonography showed a large simple cyst adjacent to the lower surface of the liver. The left intrahepatic bile duct was dilated.

CT scan demonstrated a solitary hepatic cyst that measured 11 x 9 x 16 cm at the porta hepatis. The cyst showed no nodularity of the wall or septum formation. The right and left intrahepatic bile ducts were dilated without dilation of the common bile duct.

Cystography, performed 3 days after the insertion of the drainage tube, showed no leakage or communication between the cyst and the biliary tract.

Enhanced CT scan 9 months after the treatment. The large hepatic cyst at the porta hepatis had disappeared. Small hepatic cyst at the right lobe and gall bladder were seen.

Discussion

Non-parasitic hepatic cysts are usually asymptomatic and only occasionally associated with upper abdominal discomfort, nausea, vomiting, and abdominal distension because of compression of adjoining organs (1-3). Obstructive jaundice caused by a hepatic cyst is rare. Sanfelippo et al (4) reported that only 2 patients among 82 cases with solitary hepatic cysts were associated with jaundice. Terada et al (5) showed that in a series
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Of 16 cases with obstructive jaundice due to hepatic cyst, the cysts were located at the porta hepatis and compressed the common bile duct in most patients. In the present patient, the cyst was located at the porta hepatis, and the intrahepatic bile duct was dilated without dilatation of the gallbladder and common bile duct. Although an endoscopic retrograde cholangiography could not be performed due to the patient's refusal, jaundice disappeared and liver enzyme levels returned to normal after percutaneous cyst drainage and sclerotherapy. Nine months after the treatment, the patient was healthy with no symptoms such as jaundice and abdominal fullness, and the hepatic cyst and dilation of the intrahepatic bile duct had disappeared on CT scan. These findings suggest that the obstructive jaundice in this patient was due to the compression of the common bile duct by the large non-parasitic hepatic cyst in the region of the porta hepatis.

The treatment for symptomatic solitary hepatic cyst varies from percutaneous aspiration to surgical treatment (1, 6-10). Cyst aspiration to treat bile duct obstruction due to a large hepatic cyst has been reported (4) and appears to be an adequate method. However, if no attempt at ablation of the cyst wall is made, recurrence of the cyst may occur, and an infection may develop (7). In recent years, symptomatic hepatic cysts have been treated percutaneously with drainage and instillation of a variety of sclerosing agents, including 95% alcohol, Pantopaque, and doxycycline (8-10). Tetracycline has been administered by intrapleural route for the management of malignant pleural effusion (11). Ito et al (12), and Hirata and Nishimura (13) reported cases of hepatic cyst cured by injection of minocycline hydrochloride with percutaneous drainage and Hagiwara et al (14) reported a patient with a solitary hepatic cyst who was successfully treated by bolus dose instillation of minocycline hydrochloride, and that its efficacy was related to the extremely low pH of the minocycline hydrochloride in solution which thereby destroyed the mesothelial cells which was secreting the effusate. Furthermore, Rubinison and Bolooki (11) suggested that the antibiotic action of tetracycline could provide some protection against infection after instillation. In this case, we successfully performed percutaneous sclerosing of hepatic cyst associated with obstructive jaundice by using 500 mg of minocycline hydrochloride. There was no major complication during the sclerotherapy and the large hepatic cyst completely disappeared nine months after the treatment. Ninety-five percent alcohol has been recommended as the most preferred compound among several agents for sclerosing complicated hepatic cysts. Minocycline hydrochloride also can be recommended as a useful alternative sclerosant.

References