



Case Report

Obstructive Jaundice and Hepatic - Portal Vein Fistula Caused by Hepatic Cyst

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Abstract

Patient concerns: In October 2023, a male patient aged 87 was referred to our department for a comprehensive physical examination. The reason for the referral was the presence of a abdomen pain , jaundice and itchy skin that had been observed.

Diagnosis: The Enhanced CT of the abdomen displayed a cyst situated in the liver, and confirmed hepatic-portal vein fistula.

Interventions: An open surgery was conducted on the patient to puncture the hepatic and repair the hepatic- portal vein fistula.

Outcomes: The patient underwent a successful operation and demonstrated positive recovery after the 3-month follow-up period.

Introduction

Hepatic cysts consist of various clinical causes, with the majority being benign, uncommon, and typically without symptoms. Symptoms may arise in cases of abdominal pain, hemorrhage, obstructive jaundice, or a consumptive coagulopathy. The most suitable surgical approach for hepatic cysts, such as laparoscopic cyst fenestration, depends on the size and location of the cyst. Hepatic cysts are a diverse group of clinical conditions, with the majority being benign, uncommon, and typically not causing any symptoms. However, in cases where symptoms do occur, they can manifest as abdominal pain, hemorrhage, obstructive jaundice, or a consumptive coagulopathy. The surgical approach to managing symptomatic hepatic cysts depends on factors such as the size and location of the cyst. One common method is laparoscopic cyst fenestration, which involves creating a small opening in the cyst wall to drain fluid and alleviate symptoms [1].

Case Report

87 years old male was admitted to the hospital in October

2023 due to progressive painless yellow staining of the skin and sclera for more than half a month, accompanied by skin itching, strong tea colored urine, no fever, abdominal pain, and other discomforts. The patient did not receive treatment, and the above-mentioned skin and sclera yellowing and skin itching gradually worsened upon arrival at the hospital. Physical examination in the hospital: The skin and sclera of the whole body are significantly yellow stained, the abdomen is flat and soft, and there is slight tenderness under the xiphoid process in the right upper abdomen and upper abdomen, without rebound pain. Murphy's Sign (-), Courvoisier's Sign (-). Ultrasound of liver, gallbladder, spleen, and pancreas: Multiple cysts in the liver, widened intrahepatic bile ducts, and thickened gallbladder wall. Liver biochemical examination: TBL418.41 μ Mol/L, DBL 385.32 μ Mol/L, ALT 77.60 U/L, AST 108.77 U/L. Hepatitis virus markers negative; Tumor marker CA19-9349.93U/mL. Blood routine and coagulation function are generally normal. I reported discovering a liver cyst 15 years ago, and it has been increasing year by year since re examination. However, it has not been treated. Chronic cholecystitis, liver

cyst. To clarify the cause of biliary obstruction, a comprehensive abdominal CT scan revealed multiple intrahepatic cysts; The intrahepatic bile duct is significantly dilated. Magnetic Resonance Cholangiopancreatography (MRCP) shows significant dilation of the intrahepatic bile duct, with a focus on the left lobe and hilum of the liver, consistent with signs of high-level biliary obstruction.

The common hepatic duct and bile duct are not visualized, and the cystic mass in the hilum of the liver is closely related to the junction of the left and right hepatic ducts. To relieve obstructive jaundice and further clarify the diagnosis, the patient planned to undergo PTC, during which the pigtail tube was inserted under ultrasound guidance. In the larger cystic mass, a clear and transparent puncture fluid of about 60mL was extracted and no bile was found. During the operation, it was considered that there was a possibility of obstruction caused by compression of the bile duct in the hepatic hilum by a liver cyst, so drainage tube was inserted after puncture the cyst. The patient returned to the ward, and after one month the drainage tube was removed. A total of about 120mL of clear and pale yellow fluid was extracted, and no bile or bloody fluid was found. Intermittent postoperative follow-up of bilirubin showed a progressive decrease, and the tumor marker CA19-9 significantly decreased after re-examination of abdominal CT and MRCP showed significant reduction in common bile duct dilation and cyst collapse. After injection of contrast agent through the pigtail tube, an abdominal X-ray was immediately taken in an upright position, and suspected leakage of the contrast agent was observed. After 2 hours of injection, a re-examination showed no imaging agent around the cyst. On the same day, DSA dynamic cyst imaging was performed, and when 30mL of contrast agent was injected, the cyst showed no contrast agent leakage. When injecting 70mL, it was observed that the contrast agent overflowed into the portal vein and hepatic vein, and upon re-examination, it was found to be dark bloody fluid. There was no obvious bleeding after surgery. Clear diagnosis: liver cyst with obstructive jaundice, liver cyst with hepatic vein and portal vein fistula. Considering the patient's advanced age and concomitant total heart failure, they were discharged with catheterization. In 2023, CA19-9 was rechecked to be normal, total bilirubin was normal, and the drainage tube was removed. As of October 2023 (1 month later patient discharged), there were no abnormalities, and there was no further yellow staining of the skin and sclera. The patient refused to undergo imaging re-examination due to physical reasons.

Discussion

Hepatic cysts can be categorized into three main types: simple benign non-parasitic cysts, parasitic cysts, and neoplastic cysts. There are different classifications for hepatic cysts, including those that are benign and non-parasitic, those caused by parasites, and those that are neoplastic in nature [2]. Hepatic cysts

are typically classified as either simple benign non-parasitic cysts, parasitic cysts, or neoplastic cysts, each with their own distinct characteristics and implications for treatment. There are various classifications for hepatic cysts, which are cysts that occur in the liver. These classifications include simple benign non-parasitic cysts, which are harmless cysts that do not involve any parasites [3]. Another classification is parasitic cysts, which are cysts caused by parasites. Lastly, there are neoplastic cysts, which are cysts that are associated with tumors or cancerous growths. By categorizing hepatic cysts into these different types, medical professionals can better understand and diagnose the specific characteristics and potential risks associated with each type of cyst. Non-parasitic liver cysts are the most common benign cystic tumors of the liver in clinical practice, mostly solitary and with rare clinical symptoms, usually only having large cysts. Liver cysts can only cause symptoms such as abdominal pain, bloating, and vomiting due to compression of adjacent organs, and there are few reports of jaundice [4]. Previous reports have also mostly focused on the compression of bile ducts caused by giant liver cysts or polycystic liver disease.

If the cyst size in this case is only 5cm and causes severe obstruction, jaundice is rare. There is currently no team report on patients with liver cysts and obstructive jaundice complicated by hepatic vein and portal vein fistula. In the early stage of diagnosis and treatment of liver cysts combined with obstructive jaundice, it is often necessary to distinguish them from congenital cholangiodilation and malignant biliary tumors. In this case, congenital cholangiodilation can be ruled out by ultrasound-guided puncture and the characteristics of the drainage fluid. Combined with continuous postoperative monitoring of the drainage fluid and dynamic monitoring of changes in CA19-9, malignant biliary tumors can be ruled out. In previous domestic and foreign reports, there have been similar confusions as in this case. The final diagnosis was made through MRCP, ERCP, or application of interventional techniques [5]. Through literature review, it was found that in 2011, Yamakawa et al. reported a case of obstructive jaundice caused by a 2cm hepatic cyst in the hepatic hilum, which is the smallest case of lesion-induced jaundice to date. In 2016, Saavedra-Perez et al [2]. reported a case of a hepatic cyst in the hilar region, which had a communicating passage with the common hepatic duct. The cyst wall herniated into the bile duct, resulting in obstructive jaundice. Report and analysis of cases of liver cysts combined with intracystic hemorrhage in the past [6]. The cause of the cyst combined with hepatic vein and portal vein fistula may be similar to that in this case. In terms of treatment, early cases of jaundice caused by huge liver cysts are often treated with cyst fenestration and drainage surgery. In recent years, ultrasound-guided puncture+sclerotherapy has become increasingly widely used, with sclerotherapy mainly using

anhydrous alcohol and polyvinylidene alcohol, and there have also been cases of using minocycline hydrochloride sclerotherapy. In this case, we considered the characteristics of the patient's advanced age, total heart failure, and prolonged progression of the cyst condition leading to jaundice [7]. Combined with imaging prediction of the potential risk of venous fistula sclerotherapy, we did not undergo cyst sclerotherapy. This case was followed up for 6 months without any symptoms or signs of obstructive jaundice, and the effect was satisfactory. Follow up observation will continue in the future. The patient had a large central hepatic cyst that was causing obstructive jaundice. Due to concerns about the cause of the cyst, an open cyst fenestration procedure was performed. The elevated transaminitis levels on presentation indicate possible hepatocellular damage, which could be related to vascular obstruction caused by the cyst and cholangitis from biliary obstruction. It is important to conduct thorough pre-operative laboratory and imaging evaluations before deciding on surgical management for obstructive jaundice caused by a liver cyst. The size, location, and potential causes of the cyst should be carefully considered when choosing the surgical approach [8] (Figure 1,2).

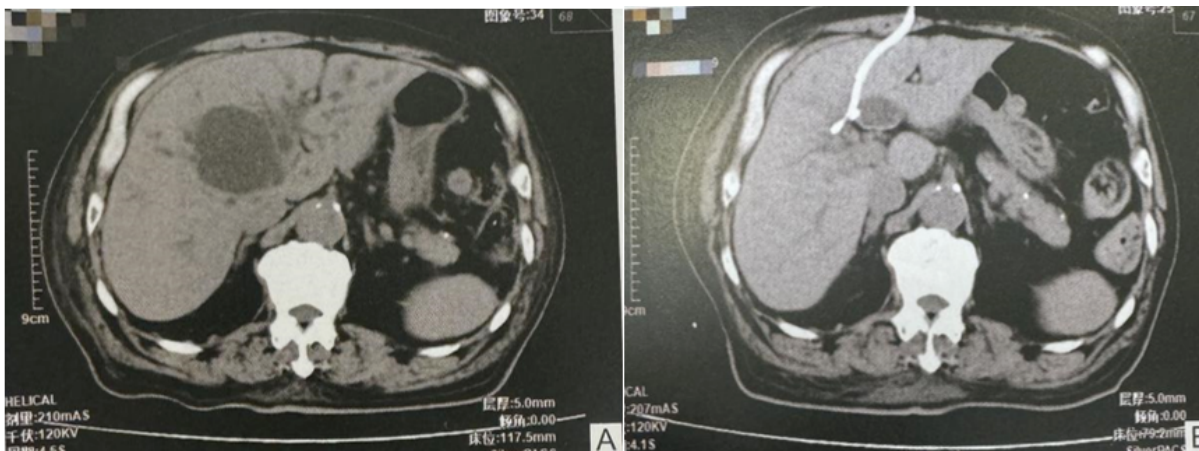


Figure 1: Figure A Preoperative CT showed hepatic cyst and intrahepatic bile duct dilation. Figure B CT scan after puncture showed hepatic cyst collapse with no significant dilation of the interahepatic bile duct.

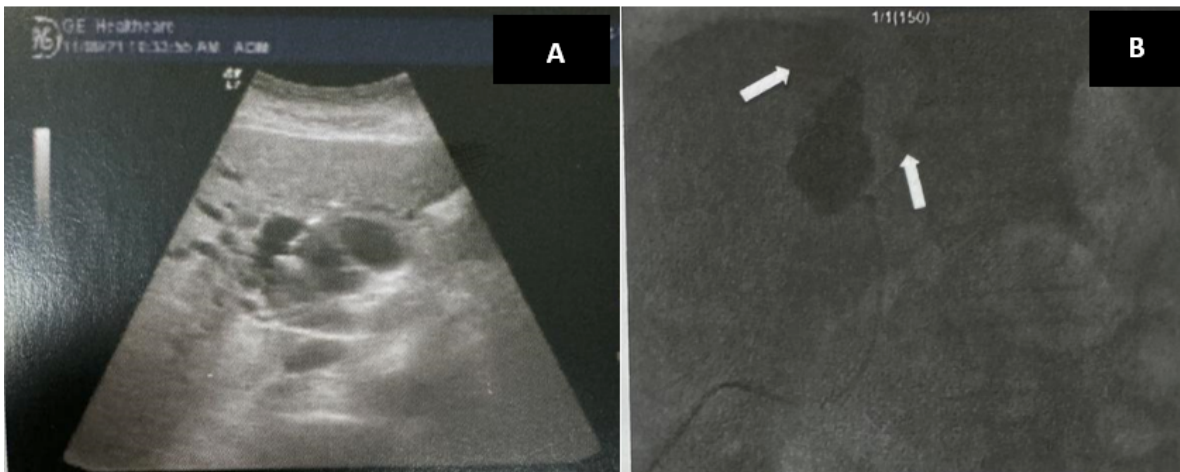


Figure 2:Figure A Ultrasound guided puncture showed the placement of trocar into a hepatic cyst. Figure B Hepatic cyst DSA Image of showed hepatic venous fistula.

Conclusion

The diagnosis and treatment of obstructive jaundice combined with liver cysts, the possibility of cyst compression causing jaundice should be considered, especially for cysts in the hepatic hilum area; However, it is extremely rare for liver cysts to combine with hepatic vein and portal vein fistulas. Before sclerotherapy and surgical treatment, this possibility should be considered for hepatic portal

area cysts. If necessary, diagnostic puncture and imaging should be performed to avoid blind surgery or excessive sclerotherapy causing iatrogenic bleeding, sclerotherapy injection, and other iatrogenic injuries.

Reference

1. Baron TH, Lappas BM (2021) Successful EUS-guided cystoduodenostomy of a large hepatic cyst causing biliary obstruction. *Gastrointest Endosc* 93: 981-982.
2. Saavedra-Perez D, Quer X, de Cozar J, de Caralt E (2017) Bilateral intrahepatic bile duct compression by giant non-parasitic hepatic cyst: A rare cause of obstructive jaundice. *Cir Esp* 95: 293.
3. Mehtsun WT, Patel MS, Markmann JF, Hertl M, Vagefi PA (2015) Obstructive jaundice caused by a giant non-parasitic hepatic cyst. *Ann Hepatol* 14: 267-269.
4. Yamakawa M, Kawamoto S, Kouda M, Inaba F, Kindaichi S, et al. (2011) Therapeutic sclerosis of a small liver cyst that caused obstructive jaundice. *J Vasc Interv Radiol* 22: 695-698.
5. Bracha M, Khoury T, Marom G, Gazla SA, Adeleh M, et al. (2019) Successful Embolization of Hemorrhagic Hepatic Hydatid Cyst Followed by Surgical Resection: Report of Two Cases and Review of the Literature. *Ann Vasc Surg* 60: 474.e1-474.e5.
6. Fong ZV, Wolf AM, Doria C, Berger AC, Rosato EL, et al. (2012) Hemorrhagic hepatic cyst: report of a case and review of the literature with emphasis on clinical approach and management. *J Gastrointest Surg* 16: 1782-1789.
7. Lin CL, Chang JJ, Lee TS, Lui KW, Yen CL. Gallbladder polyp as a manifestation of hemobilia caused by arterial-portal fistula after percutaneous liver biopsy: a case report. *World J Gastroenterol* 11: 305-307.
8. Tucker ON, Smith J, Fenlon HM, McEntee GP (2005) Giant solitary non-parasitic cyst of the liver. *Ir J Med Sci* 174: 60-62.