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Giant complex hepatic cyst causing pseudocystitis: A case report

Giant Complex Hepatic Cyst Presenting as Pseudocyst

Abstract

BACKGROUND

Hepatic cysts are common benign liver tumors that are typically asymptomatic. However, larger cysts, particularly giant liver cysts, can potentially induce symptoms. If the diameter of the cyst exceeds 10 cm, it can exert pressure on adjacent organs, leading to manifestations of corresponding symptoms. Here, we report the case of a complex giant hepatic cyst that caused pseudocystitis.

CASE SUMMARY

A 16-year-old girl was admitted to our hospital with frequent and urgent urination. An ultrasonography revealed no obvious uterine adnexal abnormalities but showed a hypoechoic, cystic mass (173 × 84 × 138 mm) with clear boundaries, and an unclear blood flow signal in the abdominal cavity (extending from the lower edge of the left lobe of liver to the upper edge of the bladder). Abdominal contrast-enhanced computed tomography revealed a giant cystic mass in the abdominal and pelvic cavities, possibly originating from the liver, and a small amount of free fluid in the pelvic cavity (Figure 1), which a subsequent magnetic resonance imaging confirmed. The imaging characteristics were consistent for a benign lesion (Figure 2). Patient underwent laparoscopic resection of the giant liver cyst with partial liver resection. Post-surgery her symptoms urinary symptoms were relieved completely and she was discharged on the sixth postoperative day.

CONCLUSION

Our patient presented with symptoms suggestive of pseudocystitis, stressing the need for considering possibilities of other etiologies and differential diagnoses.

Key Words: Giant hepatic cyst; Pseudocystitis; Symptoms; Case report

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Core Tip: Giant hepatic cysts can cause symptoms upon reaching a significant size. We present a case of a complex giant liver cyst presenting as pseudocystitis in a 16-year-old girl with frequent and urgent urination. Imaging revealed a large cystic lesion in the liver. Laparoscopic resection with partial liver resection was performed, resulting in the resolution of the urinary symptoms. Therefore, clinicians should consider the possibility of giant liver cysts in patients presenting with similar symptoms.

INTRODUCTION

Liver cysts are common, asymptomatic benign tumors, with an incidence of 4.5%–7.0%^[1, 2], and a female preponderance (1.5:1)^[3, 4]. Liver cysts are mostly diagnosed in adults aged around 40 years and are usually detected incidentally during imaging using computed tomography and/or ultrasonography^[5-7]. Frequent and urgent micturition in women, especially married women, is mostly caused by urinary tract and gynecological pathologies. Liver cysts do not cause symptoms related to other abdominal organs unless they expand in size, and cause compression on adjacent structures and symptoms subsequent to that^[8, 9]. Pseudocystitis resulting from a liver cysts is rare. Here, we report a case of pseudocystitis caused by a giant liver cyst.

CASE PRESENTATION

Chief complaints

Frequent and urgent urination and discovery of abdominal mass

History of present illness

A 16-year-old girl was admitted to our hospital with frequent and urgent urination. She had no abdominal masses, nausea, vomiting, abdominal pain, or feeling of bloating. Gynecological examination using an ultrasonography revealed no obvious uterine adnexal abnormalities. A hypoechoic cystic mass measuring approximately 173 × 84 × 138 mm with clear boundaries, and an unclear blood flow signal was observed in the abdominal cavity, ¹ extending from the lower edge of the left liver lobe to the upper edge of the bladder.

History of past illness

The patient is in good health condition, with no history of acute or chronic infectious diseases, no history of drug or food allergies, no history of surgery or trauma, and no history of blood transfusion. Vaccination follows society.

Personal and family history

The patient had a history of pancreatitis in the previous year, no history of hypertension or diabetes, and no family history of liver or renal cysts. Family members have no similar medical history. Furthermore, He denied any hereditary diseases in his family.

Physical examination

Physical examination revealed the following: temperature: 36.8 °C, heart rate: 108 beats/min, respiratory rate: 18 beats/min, and blood pressure: 114/82 mmHg. There were no yellowing of the skin or sclera, or swelling of superficial lymph nodes throughout the body. Neck was soft, and chest symmetrical, with no obvious abnormalities heard during cardiac and pulmonary auscultation. Abdomen was flat. A

mass measuring approximately 12 × 10 cm was palpated in the lower abdomen. The mass was soft in texture, with smooth surface, rounded edges, clear boundaries, and had a range of motion, and could be pushed forward without tenderness. It did not extend to the liver or spleen under the ribs, and Murphy's sign was negative. There was no pain on percussion in the renal area and no bilateral lower limb edema. Her examination was negative for shifting dullness, and bowel sounds were normal.

Laboratory examinations

Laboratory examination revealed the following: white blood cell count: $3.93 \times 10^9/L$; neutrophil percentage: 36.00%; neutrophil count: $1.421 \times 10^9/L$; hemoglobin concentration: 109.00 g/L; serum C-reactive protein level: 0.23 mg/L; β -human chorionic gonadotropin level: 0.23 mIU/mL; serum albumin level: 38.6 g/L; total bilirubin level: 21.0 $\mu\text{mol/L}$; and serum alanine aminotransferase level: 12.4 U/L. Bladder fluid bacterial culture: After two days of cultivation, no bacterial or fungal growth was observed. The remaining findings are shown in Table 1-5.

Imaging examinations

Abdominal contrast-enhanced computed tomography revealed a giant cystic mass in the abdominal and pelvic cavities, possibly originating from the liver.. Furthermore, a small amount of free fluid was observed in the pelvic cavity.

Magnetic resonance imaging revealed a large cystic mass in the abdominal and pelvic cavities, with features suggesting a benign lesion.

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CHIEF COMPLAINTS

Frequent and urgent urination and discovery of abdominal mass

FINAL DIAGNOSIS

Giant liver cyst.

TREATMENT

The patient underwent laparoscopic resection of the giant liver cyst along with partial liver resection. Her presenting symptoms of frequent or urgent urination were completely relieved post-surgery and she was discharged on the sixth postoperative day.

OUTCOME AND FOLLOW-UP

The patient recovered well, with no symptoms of frequent or urgent urination, and no specific discomfort was observed during follow-up at 0.5, 1, and 3 mo after discharge.

DISCUSSION

Liver cysts are a benign disease with genetic characteristics^[10, 11]. Simple liver cysts are typical cystic thin-walled masses that originate from abnormally developed bile duct cells during embryonic development^[5]. In most cases, cysts only occur in the liver, and patients generally have no obvious clinical symptoms. However, in some patients, the

expansion of liver cysts can cause abdominal symptoms, mainly due to a series of corresponding clinical symptoms caused by the compression of surrounding tissues or organs caused by oversized liver cysts^[12]. Asymptomatic simple liver cysts usually do not require treatment. The treatment of liver cysts with obvious clinical symptoms includes percutaneous puncture, aspiration, sclerotherapy, and surgery^[5].

Herein, we report a case of pseudocystitis caused by a giant complex liver cyst that was pathologically suggestive of a bile duct derived liver cyst and was different from a conventional liver cyst (Figure 3). There are no reports in the literature of complex liver cysts causing symptoms of pseudocystitis. Liver cysts are typically asymptomatic. An increase in cyst size, particularly in giant liver cysts, can initiate symptoms. If the diameter of the cyst exceeds 10 cm, it can expand and cause pressure effect on adjacent organs and corresponding symptoms may appear^[8], including abdominal pain, nausea, vomiting, obstructive jaundice, superior vena cava thrombosis, acute pulmonary embolism, and acute pancreatitis^[6, 13-15]. Such giant liver cysts should be differentiated from Caroli disease^[16], giant mesenchymal hamartomas of the liver^[17], teratomas ^[18], and other diseases^[19-21]. Our patient had previously experienced symptoms of pancreatitis. Therefore, we assumed that the pain was caused by a liver cyst. At the time of presentation, the liver cyst caused symptoms in distant organs that disappeared postoperatively. Thus, it was confirmed that the giant liver cyst caused the pain. These cysts usually require surgical intervention. In our patient, the giant cyst was located at the edge of the liver; thus, the liver was stretched and deformed under the influence of gravity. During the surgical process, we obtained biopsy samples of adjacent tissues to determine the possibility of further deterioration of liver architecture, and to rule out possible recurrence, which the liver cysts are prone to.

CONCLUSION

Our case report highlights that the diagnosis and treatment of complex giant liver cysts that cause pseudocystitis should be comprehensive and multidimensional. The

differential diagnosis of such abdominal masses should be considered before treatment. The patient was a young, unmarried girl, and a detailed plan was specified to minimize major trauma and achieve the best treatment outcomes. These patients require close follow-up because liver cysts are prone to recurrence.

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