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CASE REPORT

Intestinal obstruction due to giant liver cyst: A case report

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Abstract

BACKGROUND

Congenital hepatic cysts are relatively rare but are now diagnosed earlier and more frequently with a routine prenatal ultrasound. Solitary liver cysts are divided into simple and solitary intrahepatic biliary cysts, depending on the biliary connection. While some solitary liver cysts are symptomatic in childhood, even in newborns, they are often found incidentally in adults.

CASE SUMMARY

A 3-mo-old female infant was admitted to Mogadishu Somali Training and Research Hospital with recurrent vomiting, respiratory problems, and abdominal bloating complaints. On examination, the abdomen was greatly distended and extremely tight. She had repeated vomiting for 3 d, no stool output, and decreased urine. The abdominal ultrasonography detected a solitary cystic lesion measuring 10 cm × 10 cm × 14 cm, extending from the liver or right kidney to the pelvis. In the magnetic resonance imaging examination of the patient, a solitary cystic structure of 10 cm × 10 cm × 14 cm in the right abdomen was observed, extending to the pelvis and possibly originating from the liver. The patient was operated *via* fenestration after her fluid and electrolytes improved. Oral nutrition was initiated on the 2nd postoperative day, and the drain was removed on the 5th postoperative day. The patient visited the outpatient clinic control 1 mo later with no clinical complaints.

CONCLUSION

Congenital liver cysts are usually followed without complications. They rarely reach gigantic dimensions and may cause respiratory distress, intestinal obstruction and recurrent vomiting. Surgery can provide quite successful outcomes in the treatment of giant sized simple liver cysts.

Key Words: Congenital liver cyst; Simple liver cyst; Fenestration; Pain; Intestinal obstru-

ction; Case report

Core Tip: Liver simple cysts are a common disease; however, neonatal congenital ones are very rare and are usually followed without complications. Our patient presented with a giant simple liver cyst that caused serious complications. Unfortunately, for some of these patients surgical treatment is not curative, and deaths as a result of ongoing bile leakage are reported. Our patient, who underwent the appropriate surgical procedure, did not experience bile leakage and experienced definitive recovery.

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INTRODUCTION

Simple liver cysts are the most common benign disease of the liver. Usually retention cysts originate from the biliary tract. In general, simple liver cysts are four times more common in women and seen in approximately 3%-4% of the population. The cysts are filled with clear fluid and do not contain bile, cells, or bacteria (*i.e.*, sterile). The color of the cyst fluid can vary from clear, light yellow to brown[1]. The thin capsule of the simple liver cyst consists of dense fibrous tissue on the outside and the inside is lined with a single layer of columnar or cuboidal epithelium. The epithelial layer is present in most simple liver cysts but absent in a few. There is no mesenchymal stroma nor cellular atypia in the cyst wall. Characteristically, simple liver cysts are usually located in the right lobe of the liver and they do not open into the biliary tract. Size can range from a few millimeters to several decimeters. Very large (giant) simple liver cysts may cause atrophy in one lobe and hypertrophy in another[2].

Congenital hepatic cysts are relatively rare but are now diagnosed earlier and more frequently with a routine prenatal ultrasound. Solitary liver cysts are divided into simple and solitary intrahepatic biliary cysts, depending on the biliary connection. While some solitary liver cysts are symptomatic in childhood, even in newborns, they are often discovered incidentally in adults[3].

Simple liver cysts (especially small ones) are usually asymptomatic. When symptoms do occur, however, they can be elaborated as abdominal pain and/or a feeling of fullness in the abdomen along with nausea. The larger the cyst, the more likely it is to cause complaints. Case reports of spontaneous hemorrhage, infection, compression of the inferior vena cava, rupture, and biliary obstruction have been reported; although, these reports are rare among the literature, reflecting the rare nature of the cases themselves. The complications themselves are mainly observed in cases wherein the simple liver cysts reach large size. Most adult congenital liver cysts are asymptomatic and detected incidentally at autopsy or laparotomy. However, congenital liver cysts are extremely rare in infants and children. Usually, simple liver cysts in pediatric patients are treated (surgically) without complications[4]. Here, we present a 3-mo-old infant with a giant (10 cm × 10 cm × 14 cm) liver cyst leading to intestinal obstruction, vomiting and respiratory problems.

CASE PRESENTATION

Chief complaints

A 3-mo-old female infant was admitted to Mogadishu Somali Training and Research Hospital with recurrent vomiting, respiratory problems, and abdominal bloating complaints.

History of present illness

The patient was born at-home in Somalia *via* spontaneous vaginal delivery to a 22-year-old mother who had no prenatal care. The parents had 2 prior children, a male and a female, both of whom were also born at-home and reported as healthy. The parents were unable to provide data on the patient's birth weight, first urination, first stool, time from birth to first cry, or time of first flatulence. The parents reported that the infant had not attended any other clinical visit, as they did not have the resources for such.

History of past illness

The parents reported witnessing no other issues since birth.

Personal and family history

There was no relevant personal or family history.

Physical examination

The abdomen was greatly distended and extremely tight (Figure 1A). The patient had experienced repeated vomiting for 3 d, no stool output, and decreased urine.

Laboratory examinations

At admission, the infant's lab values were as follows: sodium: 128 mEq/L; potassium: 4.15 mEq/L; calcium: 8.1 mg/dL; albumin: 2.8 g/dL; white blood cell count: 21300/mL; C-reactive protein: 11.97 mg/L; platelets: 353000 mc/L; hemoglobin: 10.1 g/dL; hematocrit: 30.7%.

Imaging examinations

In standing direct abdominal X-ray (Figure 1B), it was observed that there was no intestinal gas passage. A complete obstruction was detected due to possible cystic pressure, and the intestines were shifted to the left lateral region of the abdomen. Abdominal ultrasonography (USG) detected a solitary cystic lesion measuring 10 cm × 10 cm × 14 cm, extending from the liver or right kidney to the pelvis. It was determined that it was causing displacement of the liver, right kidney, and intestines. In magnetic resonance imaging (MRI) examination, a solitary cystic structure of 10 cm × 10 cm × 14 cm was observed in the right abdomen, extending to the pelvis and possibly originating from the liver (Figure 2).

FINAL DIAGNOSIS

Giant-size simple liver cyst.

TREATMENT

Operation was decided as an emergency intervention. The patient was given standard treatment for fluid and electrolytes' improvement, and then operated on *via* fenestration. While we had presurgical suspicion of pathology related to the bile ducts, we found no evidence intraoperatively for choledochal cyst. Instead, a large, unilocular, thick-walled, transparent cystic structure was observed. Surrounding adhesions and vascular connections were evaluated. The cyst was attached to the vena cava and portal vein, causing compression. Adhesions were removed without damaging the vascular structures and the cyst itself had prolobes (Figure 3). The cyst involved both the right and left lobes of the liver and grew in an extrahepatic streamlined direction. The gallbladder was located normally, and it was observed that the cyst was not related to the right kidney. Adhesions in the hilar area were removed without damage.

The cystic structure was opened by scalpel incision, and approximately 500 ccs of amber-colored liquid were aspirated. The cystic fluid did not change when exposed to atmospheric air. The liver-associated wall of the cyst was smooth. The sac wall adhering to the liver parenchymal structure and hilar structures was left intact, and the excised sac was turned with the help of LigaSure Retractable L-hook Laparoscopic Sealer/Divider, 44 cm (LF5644; Covidien, Dublin, Ireland) and sent to pathology. During the operation, there was approximately 50 ccs of blood loss, and the procedure was terminated by placing a drain.

OUTCOME AND FOLLOW-UP

Oral nutrition was initiated on the 2nd postoperative day, and the drain was removed on the 5th postoperative day. The patient visited the outpatient clinic control 1 mo later with no clinical complaints.

DISCUSSION

In USG, simple liver cysts appear as round or oval, unilocular (one piece), anechoic (black) fluid-filled lesions. The cyst wall is very thin and is difficult to detect in USG. Acoustic enhancement is seen behind the cyst (white glow). In Doppler USG, there is no bleeding in the cyst. A simple liver cyst is observed on computerized tomography (CT) as a smooth and sharply circumscribed water density. When intravenous contrast is given, it does not accumulate in the cyst. The cysts are usually uncomplicated (without bleeding or infection). On MRI, simple liver cysts are recognized by water intensity. The cyst reflects hypointensity on T1-weighted images and hyperintensity on T2-weighted images. There is no increase in intensity after intravenous contrast (gadolinium) administration[5].

Hydatid cysts, liver abscesses, biliary cystadenoma, choledochal cysts, and necrotic hepatic metastasis should be considered in the differential diagnosis of congenital liver cysts. Generally, no treatment is required in asymptomatic patients. As malignant transformation does not occur in simple liver cysts, even follow-up is not required[6]. The simple liver cysts are usually incidentally detected and asymptomatic. When symptoms occur however, the most prominent is abdominal

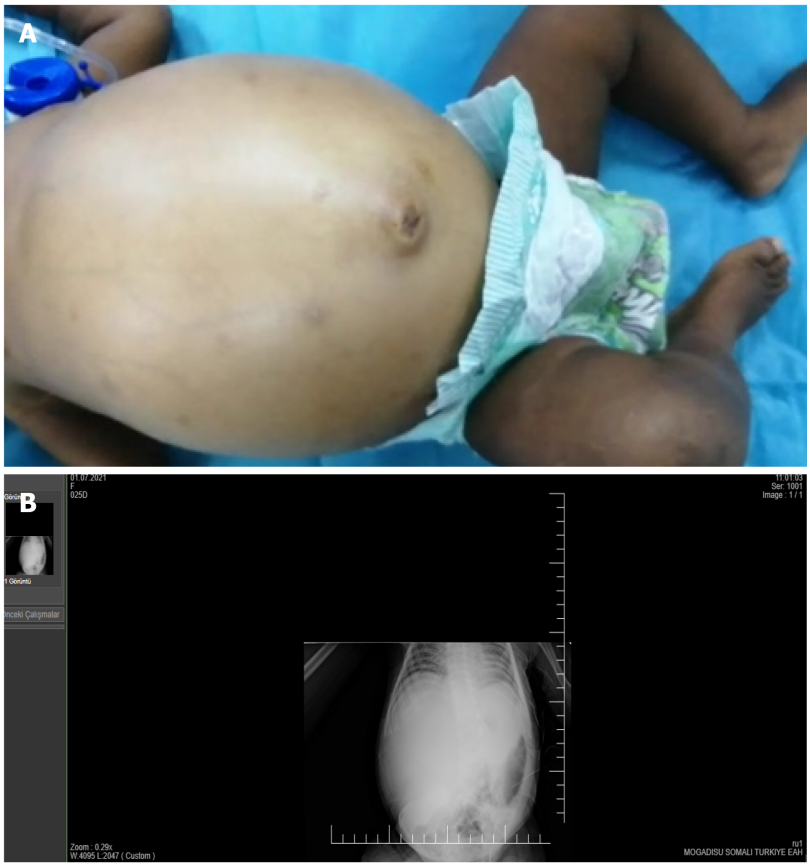

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Figure 1 Examination of physical and X-ray. A: Distension of the abdomen was apparent on physical examination; B: Direct abdominal X-ray.

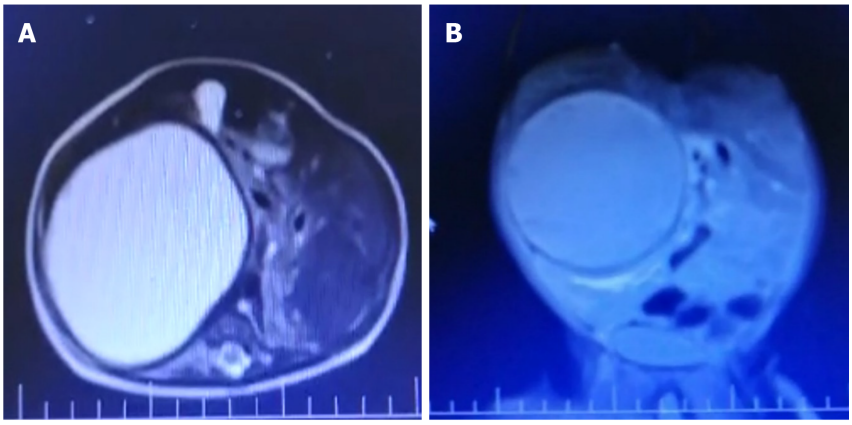

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Figure 2 A solitary cystic structure of 10 cm × 10 cm × 14 cm was observed by magnetic resonance imaging in the right abdomen, extending to the pelvis and possibly originating from the liver. A: Axial image; B: Coronal image.

pain and can be attributed to the cyst if the simple liver cyst is larger than 4 cm in diameter. Otherwise, the pain may be mixed with cholelithiasis, gastroesophageal reflux, and/or peptic ulcer[7].

Growing simple liver cysts should be evaluated for treatment, as enlarged cysts may not be simple liver cysts (they may be mucinous cystic carcinomas, benign or malignant). Aspiration of the cyst is rarely used for diagnostic purposes, but rather more so for therapeutic ones. When the cyst is drained percutaneously with a needle, the patient's symptoms disappear, but they almost always relapse quickly. Sclerotherapy aims to damage the cyst's epithelium and prevent fluid production. PAIR (percutaneous aspiration, installation of absolute alcohol) can be performed as a first-line treatment, and is safe and effective. However, the amount of alcohol (95% ethanol) administered into the cyst should be 100-120 mL. Alcohol intoxications have been reported following 240-3500 mL ethanol injections. Minocycline hydrochloride is also a good alternative to ethanol[8].

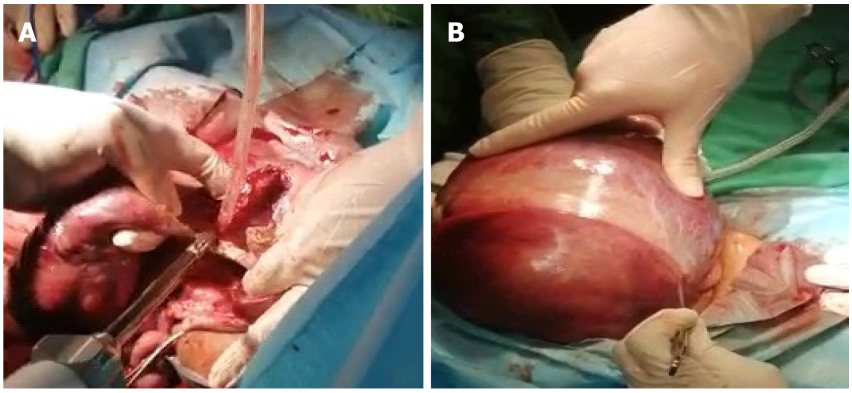

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Figure 3 Removal of the cyst adhesions without damaging the vascular structures. A: Gross appearance of the liver cyst; B: Perioperative view of the excision of the cyst wall.

Laparoscopic removal of a part of the cyst (*e.g.*, wide unroofing, wide fenestration) is another treatment alternative. Laparoscopic wide-opening of the cyst, or better complete removal of its free edges, is easy, safe and highly effective, and recurrence rate is low. The removed cyst wall is sent to pathology, and the liver surface is examined for signs of tumor formation. Fluid continues to be produced from the remaining cyst wall (epithelium) but is reabsorbed by the peritoneal cavity. Some authors recommend cauterizing the remaining cyst wall in the liver with argon laser or electrocautery. Complete resection or excision of the cyst is almost never necessary[1].

Fenestration is appropriate treatment for very large hepatic cysts, as in our patient. This approach involves removing the cystic wall to establish a contact area. Close proximity of the cyst to the liver tissue and of the cyst wall to the parenchymal and hilar structures prevent the total removal of the cyst wall[1].

According to the European Association for the Study of the Liver 2022 Guideline, ultrasound is the imaging modality of choice to diagnose a simple hepatic cyst. If the cyst is diagnosed *via* USG, then CT and MRI might be unnecessary. Congenital hepatic cysts rarely induce compression of bile ducts. The peripheral bile duct dilatation-inducing cyst is usually centrally located (*i.e.*, in liver segment 4). These patients may present with elevated alkaline phosphatase level and even jaundice[9].

CONCLUSION

Congenital liver cysts are usually followed without complications. They rarely reach gigantic dimensions, at which point they may cause respiratory distress, intestinal obstruction and recurrent vomiting. Surgery can provide quite successful outcomes in the treatment of giant sized simple liver cysts.

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REFERENCES

1 **Du CX**, Lu CG, Li W, Tang WB. Congenital hepatic cyst: Eleven case reports. *World J Clin Cases* 2022; **10**: 9112-9120 [PMID: 36157675 DOI: 10.12998/wjcc.v10.i25.9112]
2 **Sharbidre K**, Zahid M, Venkatesh SK, Bhati C, Lalwani N. Imaging of fibropolycystic liver disease. *Abdom Radiol (NY)* 2022; **47**: 2356-2370 [PMID: 35670875 DOI: 10.1007/s00261-022-03565-7]
3 **Sakakibara S**, Yamaguchi K, Hosokawa Y, Kohashi N, Ueda I, Sakamoto Y. Purification and some properties of rat liver cysteine oxidase (cysteine dioxygenase). *Biochim Biophys Acta* 1976; **422**: 273-279 [DOI: 10.1016/0005-2744(76)90138-8]
4 **Bhosale M**, Singh D. Giant congenital solitary nonparasitic cyst of the liver causing respiratory distress in a neonate. *J Indian Assoc Pediatr Surg* 2016; **21**: 72-74 [PMID: 27046978 DOI: 10.4103/0971-9261.161032]
5 **Alshaikhli A**, Al-Hillan A. Liver Cystic Disease. 2023 Apr 24. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan- [PMID: 33620816]
6 **Cullen N**, Alagtal MA, Byrne AT, Antao B. Surgical Dilemma: Exomphalos Major with Accessory Liver Lobe and Congenital Liver Cysts. *J Indian Assoc Pediatr Surg* 2022; **27**: 485-487 [PMID: 36238339 DOI: 10.4103/jiaps.jiaps_111_21]
7 **Garcea G**, Rajesh A, Dennison AR. Surgical management of cystic lesions in the liver. *ANZ J Surg* 2013; **83**: E3-E20 [PMID: 22537174 DOI: 10.1111/j.1445-2197.2012.06096.x]
8 **Phancharoenkit N**, Thienhiran A, Burasakarn P, Fuengfoo P, Hongjinda S. Acute cholangitis caused by a huge hepatic simple cyst: a case report. *J Surg Case Rep* 2023; **2023**: rjad056 [PMID: 36824694 DOI: 10.1093/jscr/rjad056]
9 **European Association for the Study of the Liver**. EASL Clinical Practice Guidelines on the management of cystic liver diseases. *J Hepatol* 2022; **77**: 1083-1108 [PMID: 35728731 DOI: 10.1016/j.jhep.2022.06.002]

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