Rare disease

A 77-year-old female with a giant hepatic cyst

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A 77-year-old female presented with high blood pressure noted at home. She was having abdominal pain and distension for several years but attributed it to old age and ignored the symptoms. CT scan revealed a giant hepatic liver cyst. The cyst was subsequently excised via laparoscopic unroofing. The patient did well post op and her symptoms were alleviated.

BACKGROUND

Solitary hepatic cysts occur in less than five percent of the general population but only rarely grow to giant sizes. Several treatment options exist for simple hepatic cysts. Simple aspiration is associated with a 100% recurrence rate. High success rates with minimal complications have made laparoscopic unroofing of hepatic cysts a reasonable treatment option.

CASE PRESENTATION

A 77-year-old female with a history of hypertension, presented to the emergency department with high blood pressure noted at home.

Upon examination, the patient was found to have a blood pressure of 233/107 and was subsequently given antihypertensive medications. Repeat measurement noted a dramatic drop in blood pressure to 80/48, which raised suspicion of an abdominal aortic aneurysm. An urgent CT of the abdomen and pelvis was obtained, which did not reveal an abdominal aneurysm but incidentally showed

a strikingly large (20 cm diameter), spherical liver mass which appeared to arise from the inferior surface of the liver (figure 1).

The patient reported decreased appetite, lower extremity swelling, bloating and increased weight for several years. Review of systems was positive for nausea and constipation. Physical examination revealed a soft, distended, non-tender abdomen with a large palpable mass on the right side of the abdomen. Aside from slight ptosis of the right eye, physical examination was otherwise benign. Laboratory test results showed normal complete blood count, serum electrolytes and liver enzymes.

The patient was taken to the operating room for a laparoscopic partial excision of the hepatic cyst. Upon entering the abdominal wall, a large cyst was encountered. Subsequently 5 litres of serous fluid was aspirated and approximately 90% of the cyst wall was excised using a harmonic scalpel. After the operation the patient reported relief of symptoms and is doing well to date.

Figure 1 (A) Abdominal CT image in coronal section, which shows a solitary, thin walled, cystic lesion which appears to arise from the inferior aspect of the liver. Hepatic mass occupies approximately 65% of the peritoneal diameter and measures 20 cm in diameter. (B) Abdominal CT image in axial view, which shows a solitary, thin walled, cystic lesion which crosses midline and occupies approximately 70% of the abdominal diameter.

Figure 2 Flow chart for the management of simple liver cysts.

INVESTIGATIONS

- ▶ CT abdomen and pelvis
- ▶ Complete blood count, basic metabolic panel, liver function panel.

DIFFERENTIAL DIAGNOSIS

Simple cyst, polycystic liver disease, hydatid cyst, hepatobiliary cystadenoma, hepatobiliary cystadenocarcinoma.

TREATMENT

Treatment options

- ▶ Simple aspiration
- ▶ Aspiration with sclerotherapy
- ▶ Radiofrequency ablation
- ▶ Internal drainage
- ▶ Marsupialisation
- ▶ Laparoscopic or open unroofing
- ▶ Complete excision
- ▶ Liver resection.

OUTCOME AND FOLLOW-UP

Cyst was successfully excised with no operative or post-operative complications. Patient was relieved of her symptoms and blood pressure was corrected.

Table 1 Morphologic differences between cystic lesions of the liver

	Simple	Parasitic	Tumour
Number	≥1	1	1
Wall	Thin	Thin	Thick/Nodular
Septa	Absent	Present	Present
Projections	Absent	Absent	Common
Debris	Absent	Absent	Present
Fluid	Serous	Serous	Mucinous

DISCUSSION

Hepatic cysts are generally divided into two categories, non-parasitic and parasitic. Non-parasitic cysts are the most common and may be subdivided into either simple or polycystic. Simple cysts are usually seen in less than five percent of the general population.¹ They are usually seen in patients older than 40 years of age, and reach giant sizes almost exclusively in those greater than 50 years of age.² Multiple cysts found in various organs may be a result of polycystic disease (i.e. autosomal-dominant polycystic kidney disease, tuberous sclerosis and von Hippel-Lindau disease). The second most common cystic lesion is the hydatid cyst which is most commonly encountered in

endemic areas like Mediterranean countries, Australia and South America.³ Hepatic cysts are more commonly found in females (F:M, 49:8) and usually occur in the right lobe of the liver.⁴ Note that hepatobiliary cystadenomas have a predilection for the left lobe of the liver (L:R, 7:1).⁵

Simple cysts are generally asymptomatic and not associated with abnormal liver function.⁶ Surgical intervention is not indicated unless the patient becomes symptomatic, develops complications or the cyst undergoes rapid growth (figure 2).³ Most hepatic cysts are found incidentally on sonogram examination and confirmed via CT. The most common symptomatic presentation is right-upper-quadrant pain resulting from stretching of Glisson's capsule.⁵ Although uncommon, complications include torsion of pedunculated cysts, haemorrhage into cyst, secondary infection, rupture of cyst and hepato-enteric fistula.² The most frequent complication is intracystic bleeding.

The differential diagnosis for a simple hepatic cyst includes liver abscess, tumour, haemangioma, haematoma, parasitic cyst and polycystic liver disease. On imaging simple cysts are generally sharply defined; contain serous fluid, and lack septations, papillary projections and calcifications. Simple cysts are easily differentiated from infectious and vascular aetiologies via clinical background, ultrasound and CT images which do not appear as sharply defined, fluid filled areas. Differentiating hydatid and tumorous cysts may be more difficult because the defining qualities of each may not be present. Generally hydatid cysts will have septations, appear calcified and may communicate with the biliary tree; features usually not seen in simple cysts. Cystadenomas usually occur as a singular lesion in the left lobe, have septations, papillary projections and contain mucinous cyst fluid (table 1; adapted from 2).

Interventions include simple aspiration, aspiration with sclerotherapy, radiofrequency ablation, cyst fenestration (Lin procedure), internal drainage with cyst jejunostomy, wide unroofing and varying degrees of liver resection.⁷ Simple aspiration results in a 100% recurrence rate and is generally not indicated. Aspiration with sclerotherapy is relatively successful treatment option with a success rate of 70–90% and a recurrence rate of less than 17%. Laparoscopic unroofing is associated with a success rate of 75–100%, recurrence rate of less than 17% and mild complications which occur in less than 15% of procedures.¹

Surgical complications of the laparoscopic approach include shoulder pain, pleural effusion, ascites, haemorrhage, infection and subhepatic bile collection. Superior or posteriorly located cysts may not be amenable to laparoscopic unroofing and thus open approach should be considered.⁸ The cyst wall should always be examined intraoperatively for septations or irregularities that may indicate cystadenoma or cystadenocarcinoma and if found total cyst excision is indicated.³ In conclusion, liver cysts are common and only rarely require surgical intervention. Laparoscopic partial cyst excision is a reasonable approach in select cases of cystic hepatic lesions.

Learning points

- ▶ Giant hepatic liver cysts occur in 5% of the population and are more common in females.
- ▶ Giant cysts almost exclusively occur in patients over the age of 50.
- ▶ Laparoscopic partial cyst excision is a reasonable approach for the resection of giant hepatic liver cysts.

Competing interests None.

Patient consent Obtained.

REFERENCES

1. **Nagorney DM**, Sarmiento JM. *Surgical management of cystic disease of the liver. Surgery of the Liver, Biliary Tract and Pancreas*. Philadelphia, PA: Saunders Elsevier 2007:1021–31.
2. **Farges O**, Vilgrain V. *Non-parasitic cystic diseases of the liver and intrahepatic biliary tree. Surgery of the Liver, Biliary Tract and Pancreas*. Philadelphia, PA: Saunders Elsevier 2007:1005–20.
3. **Kathkouda N**, Mavor E. Laparoscopic management of benign liver disease. *Surg Clin North Am* 2000;**80**:1203–11.
4. **Regev A**, Reddy KR, Berho M, *et al*. Large cystic lesions of the liver in adults: a 15-year experience in a tertiary center. *J Am Coll Surg* 2001;**193**:36–45.
5. **Ricciardi S**, Giansini R, Mion E, *et al*. Laparoscopic treatment of giant solitary hepatic cyst in a geriatric patient. *BMC Geriatrics* 2009;**9**:A45.
6. **Sanders DM2nd**, Garrett JM. Solitary hepatic cyst: case reports. *South Med J* 1968;**61**:256–61.
7. **Lin TY**, Chen CC, Wang SM. Treatment of non-parasitic cystic disease of the liver: a new approach to therapy with polycystic liver. *Ann Surg* 1968;**168**:921–7.
8. **Gagner M**, Rogula T, Selzer D. Laparoscopic liver resection: benefits and controversies. *Surg Clin North Am* 2004;**84**:451–62.

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