



Laparoscopic Management of a Recurrent Simple Giant Hepatic Cyst

Rebecca Brady, Niloy Ghosh and Izi Obokhare*

Department of Surgery, Texas Tech University Health Sciences, USA

Abstract

A 29-year-old female presented to the emergency department with abdominal bloating, early satiety, anorexia, and associated postprandial discomfort localized to the epigastric region for 1.5 months. She had a similar episode 2 years prior. Abdominopelvic CT scan done then showed a simple hepatic cyst measuring 17.2 cm × 16.5 cm × 12.0 cm in size. It was drained percutaneously by interventional radiology. The cyst then resolved and the patient was discharged home. On the current visit, abdominopelvic CT was significant for a recurrent hepatic cyst measuring 19.5 cm × 18.3 cm × 11.9 cm extending into the portal region and interposed between the left lobe of the liver, the stomach, and the body of the pancreas with mass effect. Lipase was mildly elevated at 165. After extensive counseling and discussion of non-operative management, the patient underwent laparoscopic cystectomy. Cystic fluid was negative for neoplasm or infection. Upon most recent follow up, the patient was asymptomatic.

Background

Giant hepatic cysts are an uncommon phenomenon thought to be congenital in origin. Most are simple cysts, which on their own are benign, but can become symptomatic due to mass effect, rupture, hemorrhage, or infection. Larger cysts can present as a palpable abdominal mass and present with right upper quadrant pain. Thought to be triggered by Chromosome 16, these simple cysts arise as an aberration of bile duct development in utero [1]. At this point, management protocol is not well agreed upon, but can include percutaneous aspiration, fenestration (laparoscopic or open), and surgical cystectomy [2]. However, current literature suggests that aspiration has fallen out of favor recently due to high recurrence rates (near 100%) and that laparoscopic fenestration has become widely accepted as a safer and more effective alternative method of treatment [3,4]. Another method of treatment is a Single Incision Laparoscopic Surgery (SILS), which has been described briefly in literature [5]. In this paper, we describe the case and management of a recurrent giant hepatic cyst in a 29 year old female presenting with mass effect.

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*Correspondence:

Izi Obokhare, Department of Surgery,
Texas Tech University Health Sciences,
Center School of Medicine 1400 S
Coulter St. Amarillo, TX 79106, USA,
E-mail: izi.obokhare@ttuhsc.edu

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Case Presentation

Patient is a 29 year-old Caucasian female who presented to the hospital in April 2018 with a complaint of abdominal bloating, early satiety, anorexia, and associated postprandial discomfort for 1.5 months. The abdominal pain was localized to the epigastric region. She had a similar episode 2 years prior. Abdominopelvic CT scan done at that time showed a hepatic lesion measuring 17.2 cm × 16.5 cm × 12.0 cm in size. It was drained percutaneously by interventional radiology. The cyst then resolved and the patient was discharged home.

She now presented again with similar symptoms. After a complete history and physical examination, CT revealed a recurrent hepatic cyst measuring 19.5 cm × 18.3 cm × 11.9 cm (Figure 1). The mass was interposed between the left lobe of the liver, the stomach, and the body of the pancreas. There was associated mass effect on the liver, the stomach, the pancreas, and the transverse colon. The mass was noted to extend into the portal region and varices are noted in the left upper quadrant. The rest of the history, examination and liver function tests were negative except for a mildly elevated lipase at 165. After counseling and discussion of non-operative management, the patient was taken for laparoscopic cystectomy with placement of indwelling Blake drain in the left upper quadrant. Cystic fluid was negative for neoplasm or infection. The patient was discharged on POD #1. Upon most recent follow up, the patient was asymptomatic.

Discussion

The most common presentation of a simple hepatic cyst is a small cyst, measuring a few

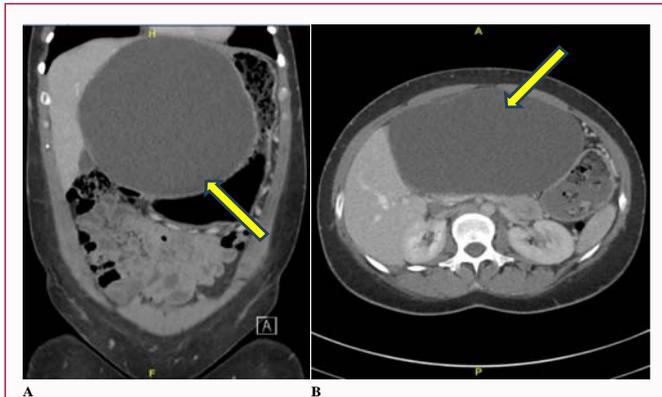


Figure 1: Coronal (A) and Sagittal (B) CT on most recent admission showing hepatic mass (see arrows) measuring 19.5 cm x 18.3 cm x 11.9 cm. Note interpositions between liver, stomach, and pancreas.

millimeters [6]. Hepatic simple cysts are relatively uncommon, presenting in up to 1% of adults. The work up for and diagnosis of a simple cyst can be complicated and is still widely debated, but distinction from other possible diagnoses can be made based on clinical presentation and radiographic findings [7]. Ultrasound is typically the first imaging modality as it can identify a simple cyst as an anechoic unilocular fluid-filled space with imperceptible walls and with posterior acoustic enhancement [8]. Additional testing with computed tomography would define a simple cyst by the appearance of a well-demarcated water-attenuated lesion that does not enhance following the administration of intravenous contrast. The same is also true for MRI images of a simple cyst following administration of Gadolinium. Based on these sonographic findings there is rarely a need for further work up involving aspiration. In this patient, the diagnosis was made primarily based on the imaging results due to the vague clinical presentation such as abdominal discomfort and anorexia, which can be present in any space occupying lesion in the abdominal cavity causing mass effect. Additionally, the literature surrounding the epidemiology of hepatic mucinous cystic neoplasms suggest that the conditions are more common in women and typically grow to sizes that require surgical intervention. Simple cysts can be differentiated from this diagnosis by the absence of septations, papillary projections, and regular borders. However, this distinction can be blurred by hemorrhage into a benign simple cyst that would give it the radiographic appearance of septations or heterogeneity which was absent in this patient [9]. Simple cysts of the liver contain only fluid components and do not communicate with the biliary tree. In this patient, this is supported by the normal lab values for biliary markers. However, larger cysts are more likely to cause symptoms and have a higher risk for complications such as spontaneous hemorrhage, torsion of a pedunculated cyst, rupture, or biliary obstruction. With the size of this simple cyst and its proximity to the biliary tree it is surprising that major lab abnormalities or complications were not seen.

The treatment of hepatic cysts is debated with current recommendations suggesting no treatment if the patient is asymptomatic and the cyst is <4 cm. If the cyst is >4 cm, follow up

with imaging studies is recommended at 3 months from the initial diagnosis date and 6 to 12 month intervals afterwards to monitor the growth of the cyst. However in a symptomatic patient with a growing hepatic cyst there is concern for neoplasm as generally simple cysts remain relatively stable in size over time. It is also important to rule out other common causes of abdominal discomfort and anorexia before surgical intervention is attempted. Though not widely accepted, percutaneous drainage of the cyst can be used for diagnostic and therapeutic reasons [10]. Various surgical procedures have also been suggested including drainage with or without injection of sclerosing agents, internal drainage with cystojejunostomy, wide unroofing, and liver resection though there are no prospective studies comparing the various approaches [3,11-13]. As such, treatment should be decided on a case by case basis. However, with the advent of laparoscopy and robotic surgery, a hepatic cystectomy can be performed with ease and with early discharge home. This patient was treated with laparoscopic hepatic cystectomy and the wall of the cyst and aspirate were both negative for neoplastic disease.

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