Hepatic Cyst Marsupialization

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Current treatment

The initial surgical approach was determined based on the size of the lesion and the degree of intrahepatic depth. The faliform ligament may be utilized to mobilize the liver laparoscopically and to gain better visualization of the anteromedial planes of the left lobe. One method involves decompression of the cyst through aspiration with a long laparoscopic needle. Another method uses suction or an irrigator into the cyst. However, this procedure increases the likelihood of fluid loss into the peritoneum. Following cyst decompression, marsupialization of the cyst wall is performed. This process is possible, which includes the creation of an opening in the wall cyst, to reduce the chance of recanalization (Fig. 2).

Differential Diagnoses

Polycystic Liver Disease

❖ Polycystic Liver Disease (PLD) is a rare inherited disorder that occurs as a result of embryonic ductal plate malformation. It occurs in two forms: in isolation, where cysts are only on the liver or in autosomal dominant polycystic liver disease, in which cysts are on the liver and kidney. The latter is more common. The risk factors for polycystic liver disease include male sex, African American ancestry, a positive family history, and pregnancy. Symptoms of PLD include abdominal pain, palpable liver, and anemia. PLD is treated by an abdominal percutaneous puncture, where a catheter is inserted into the cysts and the fluid is drained, laparoscopic fenestration, and liver transplant as a last resort due to increased morbidity and mortality. Echinococcus Cysts of the Liver

❖ Echinococcus cysts of the liver occur in approximately two-thirds of patients infected with the larval form of Echinococcus granulosus. Primary infection is typically acquired during childhood. However, the cysts usually remain asymptomatic until the cyst reaches at least 10 cm in diameter. Therefore, clinical manifestations often occur in adulthood. Diagnosis can be obtained by imaging and serology. ELISA is the most sensitive and specific assay for Echinococcus granulosus. Indications for surgery include a size greater than 10 cm and possible future complications. However, alternative treatment has replaced surgery. If surgery is necessary, attendance is given one week before surgery, followed by four weeks after surgery.

Squamous Cell Carcinoma in Benign Hepatic Cysts

❖ Benign nonparasitic congenital hepatic cysts are the most common hepatic cysts, which is what this patient presented with. They are thought to originate from Von Meyenburg complexes, which are dilated bile ducts that are surrounded by fibrous stroma. Squamous cell liver cancer is an extremely rare complication that can arise from a solitary benign hepatic cyst which has affected less than 10 patients in all reported cases. It is important to keep this diagnosis on the differential list since it can be grave and literature states that a survival rate seldom surpasses 6 months. Vague upper quadrant pain is a common presentation that can lead to a high index of suspicion and upon pathological examination, the diagnosis can be discovered. This is the reason why pathology specimens should be sent to be examined post-operatively to ensure no cancer is detected.

Chief Complaint: Hepatic History of Present Illness: 63 male with past medical history of alcoholism and smoking presents to clinic because of two hepatic cysts found incidentally on chest CT (lung cancer screening) followed up by MRI. Wax told that cyst is likely benign, but large (15 x 10 x 9cm) and compressing a major blood vessel. Denies abdominal pain, difficulty swallowing, jaundice, edema, shortness of breath. Reports long history of alcohol use (since ~age 20), which has increased since he retired ~2 years ago. Now drinks 8 beers daily including an eye-opener. Has lost ~10 lbs on cut down on consumption before, but un成功usefully. Reports tremors, but no hallucinations or seizures on withdrawal.

Past Medical History: None
Past Surgical History: Excision of ganglion of knee, Tonsillectomy and Adenoidectomy, Hand surgery.
Medications: Amlodipine 5 mg once daily
Allergies: None documented
Social History: Current daily smoker, self-described “alcoholic”, has tried to cut down unsuccessfully before.

Review of Systems: Constitutional
No fevers. No chills. No night sweats. No loss of appetite.

Review of Systems: Cardiovascular
No chest pain. Gastrintestinal: No nausea, No vomiting, No abdominal pain.
Immunologic System
No recurrent fevers, no night sweats.

Integumentary System
No skin rashes. No swelling.

Neurologic System
No numbness, No tingling.

Psychiatric System
No anxiety, No depression.

Eye
No blurry vision, No eye redness.

Ears
No hearing loss.

Nose
No stuffiness.

Dental
No oral lesions.

Diagnosis

The diagnosis was made after the patient went for a routine chest CT and the cyst was visualized. The patient is a heavy smoker, so a CT was a normal part of his plan of care. Evidence behind regular CT scans for early detection of lung cancer also helps with smoking cessation (74%). Once assessed, the cyst had to be unroofed via laparoscopy due to its large size (Fig 1). Current protocol is surgical intervention for cysts that are larger than 8 cm with patient presenting with labored.

Indications for surgery include a size greater than 10 cm and possible future complications. However, alternative treatment has replaced surgery. If surgery is necessary, attendance is given one week before surgery, followed by four weeks after surgery. Special thanks to Dr. Zielenki for his guidance and mentorship.

Alternatrive Treatments

Laparoscopic Fenestration

Laparoscopic fenestration is another plausible treatment options for symptomatic hepatic cysts either solitary or in context of polycystic liver disease (PLD), however parasitic cysts should be treated alternatively to avoid any complication by cyst growth or rupture. If imaging demonstrates abnormality indicative of a cystic tumor, a resection will be warranted. Fenestration surgical technique, indication, and efficacies of use are debated. A recent systematic literature search (1950-2017) was conducted and findings supported the use of laparoscopic fenestration as a first line intervention for the treatment of hepatic cysts. The symptomatic relief post laparoscopic fenestration was 90.2% (95% CI 84.3-94.9) and the symptomatic recurrence was low, 9.6% (95% CI 6.9-12.8). Robotic Fenestration

Robotic fenestration is another relatively new alternative option for removal of hepatic cysts. This procedure can be safely performed and offers definite advantages in comparison to the laparoscopic approach for treatment of hepatic cysts at the expense of increased operating time and cost. Data from current research shows that the da Vinci robotic surgery system is well suited for laparoscopic surgery, especially for large hepatic cysts. A large benefit of the robotic is the associated rapid recovery rates seen in comparison to the traditional endoscopic approach. Additionally, the robotic approach may help overcome certain limitations in surgery such as the limit mobility with straight laparoscopic instruments, and the limited 2-dimensional view.

Conclusion

The diagnosis of Hepatic Cyst was made due to an incidental finding on a chest CT. Due to the size and possible complications of nature, surgery was suggested. Laparoscopic marsupialization was chosen for this minimally invasive surgery which consisted of unroofing the cyst and allowing it to drain into the peritoneal sac. Social history was just as important to know to ensure the best way to dose anesthetics correctly. In this case, surgery was recommended due to the size, if it had been smaller and asymptomatic surgery would not be suggested until later.

References