

A Giant Liver Cyst with Biliary Communication Successfully Treated With Laparoscopic Deroofing: A Case Report

Dhaivat Vaishnav¹, Somesh Chandra², Tushar Lakhia³

Abstract

Introduction: Benign hepatic cysts are commonly observed in the general population, however, they rarely cause symptoms. Among various types of treatment options for a liver cyst, deroofing of the cyst is recommended as a safe and reliable procedure. Recently, it has been possible to perform deroofing laparoscopically because of the advances in laparoscopic techniques. However, the place of laparoscopic deroofing is controversial when the cyst has a biliary communication. We report a patient with a giant hepatic cyst with cystobiliary communication and elevated serum and cyst fluid CA19-9 level.

Case Report: A fifty seven year old male presented with complaint of upper abdominal fullness of 3 month duration. On clinical examination, a large 15x15 cm size intra-abdominal well defined lump in the right hypochondriac region, continuous with liver dullness was palpable. Computed tomography indicated a cyst in the right lobe of the liver, showing homogeneous water density without any mural nodules with 16 x 21 cm size most probably simple liver cyst. Patient was planned for laparoscopic de-roofing of the cyst. Cyst was decompressed. Laparoscopic de roofing of the cyst was done. After de roofing, around 2 mm size biliary leak became evident, which was closed using vicryl 4.0 suture. Cyst fluid CA 19-9 was >60,000 u/ml, but final histopathology report was simple biliary cyst.

Conclusion: A large liver cyst can lead to atrophy of liver due to compression. Laparoscopic removal of giant cysts is feasible. Biliary communication must be ruled out in any liver cyst at time of surgery. Cyst fluid CA 19-9 is not specific.

Keywords: Giant Liver cyst, biliary communication, laparoscopy.

Introduction

Benign hepatic cysts are commonly observed in the general population, however, they rarely cause symptoms. Simple hepatic cysts are generally stable in size over time, but may grow slowly and occasionally become symptomatic due to mass effect, rupture, hemorrhage, and infection. Among various types of treatment options for a liver cyst, deroofing

of the cyst is recommended as a safe and reliable procedure. Recently, it has been possible to perform deroofing laparoscopically because of the advances in laparoscopic techniques. However, the place of laparoscopic deroofing is controversial when the cyst has a biliary communication. Besides, it is difficult to diagnose the presence of the cystobiliary communication preoperatively or even during operation.

Overlooking the cystobiliary communication leads to postoperative bile leakage, which is a serious complication. We report a patient with a giant hepatic cyst with cystobiliary communication and elevated serum and cyst fluid CA19-9 level.

Case Report

A fifty seven year old male presented with complaint of upper abdominal fullness of 3

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Author's Photo Gallery

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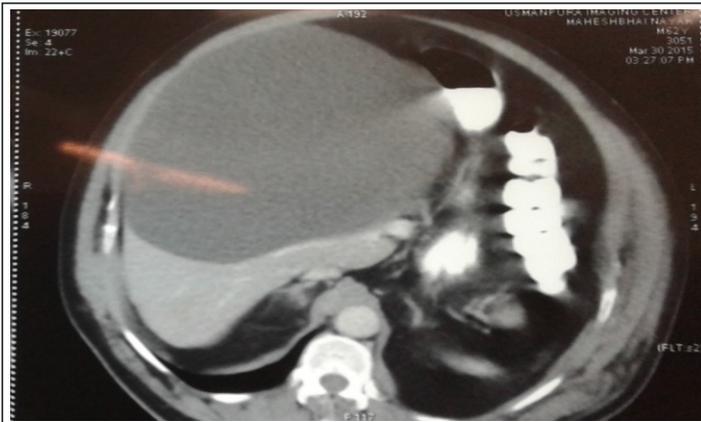


Figure 1. CECT abdomen showed homogeneous cyst replacing right lobe of liver



Figure 2. Preoperative abdominal girth

month duration. He had feeling of abdominal mass of 15 days duration. He had no history of anorexia, weakness or weight loss. He had no other comorbidities. On clinical examination, a large 15x15 cm size intra-abdominal well defined lump in the right hypochondriac region, continuous with liver dullness was palpable. USG abdomen reported, a large 15 x 21 cm size homogeneous cyst replacing right lobe of liver, suggestive of simple liver cyst. Gall bladder had multiple stones. The blood cell count and serum chemistry showed no abnormalities. Computed tomography indicated a cyst in the right lobe of the liver, showing homogeneous water density without any mural nodules with 16 x 21 cm size most probably simple liver cyst. However, his serum CA 19-9 was 67 u/ml. As patient was symptomatic, after due fitness, he was planned for laparoscopic de-roofing of the cyst. Ports were placed laterally as cyst was reaching up to umbilicus. First cyst was aspirated and Hydatid cyst was ruled out. Thereafter cyst was decompressed. Laparoscopic de roofing of the cyst was done. After de roofing, around 2 mm size biliary leak became evident, which was closed using vicryl 4.0 suture. No other leak detected. Laparoscopic cholecystectomy was completed. He had uneventful recovery in the postoperative period. Cyst fluid CA 19-9 was >60,000 u/ml, but final histopathology report was simple biliary cyst.

Discussion

Because of the low incidence of symptomatic liver cysts, uniform guidelines for their management have not been established. The simplest method of

treatment is percutaneous aspiration, which may be effective for the immediate palliation of symptoms but invariably results in cyst recurrence^{1,2} particularly when the cyst exceeds 10 cm in diameter². Attempts at improving percutaneous treatment have included the instillation of sclerosing agents into the cyst. This procedure, despite being more effective than aspiration alone, may lead to irreversible sclerosing cholangitis, and is not indicated for cases, such as ours, with biliary communication². Several surgical procedures, including cystectomy, partial liver resection, cystojejunostomy, and fenestration, have also been used to treat liver cysts. To remove a liver cyst, normal hepatic resection is necessary, but this procedure is considered too invasive. Cystojejunostomy is well suited for use for cysts with biliary communication. However, the recurrence rate of cysts following cystojejunostomy is approximately 50%³, and this procedure may carry the danger of ascending infection¹. Fenestration of a liver cyst was first reported by Lin et al. in 1968⁴. The fenestration procedure involved deroofing, drainage of the cyst fluid, and ablation of the remnant cyst wall. Endoscopic surgery has advanced markedly over the past Liver Cyst Treated with Laparoscopic Deroofing several

years. Its indications have expanded markedly following advances in operative techniques. Laparoscopic fenestration was first performed in 1991, and, thereafter, the operation has become widespread. Laparoscopic fenestration is reported to be as safe and effective^{5,6}. Alternative to fenestration with open surgery for patients with solitary liver cysts^{5,7}. Laparoscopic fenestration is the optimal procedure as the primary operation for treating symptomatic liver cysts⁵. Laparoscopic fenestration is a suitable treatment for solitary liver cysts or polycystic liver disease without malignancy or biliary communication^{1,8}.

Cases of liver cysts with biliary communication are rare, and in such cases, if the biliary communication is not blocked, bile leakage may occur. In such cases drainage can be achieved with Roux-Y cystojejunostomy¹⁰. There is only one report of the usefulness of laparoscopic deroofing for liver cysts with biliary communication¹⁰. Imaging modalities such as CT and ultrasound are highly

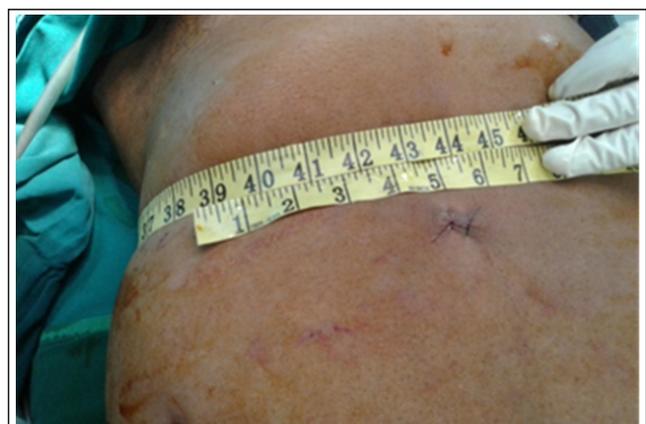


Figure 3. Postoperative abdominal girth

accurate for diagnosing simple hepatic cysts, however, the distinction between cystadenoma and a simple hepatic cyst complicated by intracystic hemorrhage has been reported to be difficult [11]. The measurement of serum and cyst fluid CA19-9 levels has been reported to be helpful in distinguishing between a hemorrhagic simple cyst and cystadenoma or cystadenocarcinoma. However both serum as well as cyst fluid CA19-9 level is not specific for diagnosis of malignancy. We believe that for the treatment of such

benign but symptomatic cysts, the goal should be to achieve symptomatic relief and that we should not choose to perform highly invasive surgery simply because small biliary communication is detected.

Conclusion

Laparoscopic deroofing is recommended as the first choice for treatment of simple liver cysts even in the presence of cystobiliary communication, which can be closed by laparoscopic suturing. Cyst fluid CA 19-9 is not specific for predicting

malignancy.

Clinical Message

- 1, A large liver cyst can lead to atrophy of liver due to compression.
- 2, Laparoscopic removal of giant cysts is feasible.
- 3, Biliary communication must be ruled out in any liver cyst at time of surgery.
- 4, Cyst fluid CA 19-9 is not specific to predict malignancy.

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