Case Report

Management of a Large, Recurrent Simple Cyst of the Liver by Total Excision: A Case Report

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Simple cysts are common benign lesions of the liver. Treatment is reserved for symptomatic patients. Current management includes percutaneous aspiration with instillation of sclerosing agents, wide excision or unroofing, or fenestration of the cyst wall (> 50%) either by open or laparoscopic surgery. Total excision of the cyst wall is infrequently mentioned. The authors report a case of a large, recurrent simple cyst of the liver that was successfully treated by total excision.

Keywords: *Simple liver cyst, Total excision*

J Med Assoc Thai 2011; 94 (4): 511-4
Full text. e-Journal: *http://www.mat.or.th/journal*

Total excision has been seldom mentioned as the treatment of choice of symptomatic simple cyst of the liver and its employment is reserved only in selected cases for fear of technical difficulty, biliary tract injury, and bleeding.

The authors present a patient who had a large, symptomatic simple cyst of the liver. She was initially treated by open surgical fenestration of the cyst wall but the cyst recurred in spite of re-operation with a wider excision of the cyst wall. She eventually underwent successful total excision of the cyst wall, a procedure infrequently recommended nowadays.

Case Report

A 31-year female patient had symptoms of progressive right upper abdominal pain and discomfort a few weeks before seeking medical advice at a private hospital. A large simple cyst of the liver was diagnosed by computed tomography (CT) scan of the abdomen. She subsequently underwent open surgical fenestration (excision of a portion of the cystic wall) on February 1, 2005. The pathological reports of the cyst wall revealed a diagnosis of simple cyst of the liver. Postoperatively, her symptoms disappeared for two weeks and then the mass was felt again at her right costal margin with symptom of abdominal discomfort. She was then referred to King Chulalongkorn Memorial Hospital for surgical consultation. Abdominal CT scan on March 14, 2005 demonstrated a large recurrent cyst of the liver (15 x 10 x 17 cm in size) occupying the segment IVA, IVB, V, VI and VIII (Fig. 1). She underwent re-operation at King Chulalongkorn Memorial Hospital on April 4, 2005. Excision of a large portion of the inferior aspect of the cyst wall (approximately 50-60% of the total area of the cyst wall) was performed. She had an uneventful postoperative course.

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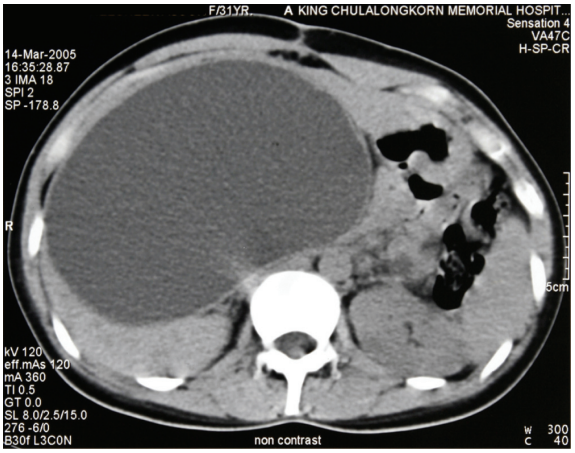

Fig. 1 CT scan of the abdomen on 14th March 2005, 6 weeks after partial excision of the cyst wall at the first operation. Recurrent large cystic lesion of the liver (15 x 10 x 17 cm in size) was demonstrated

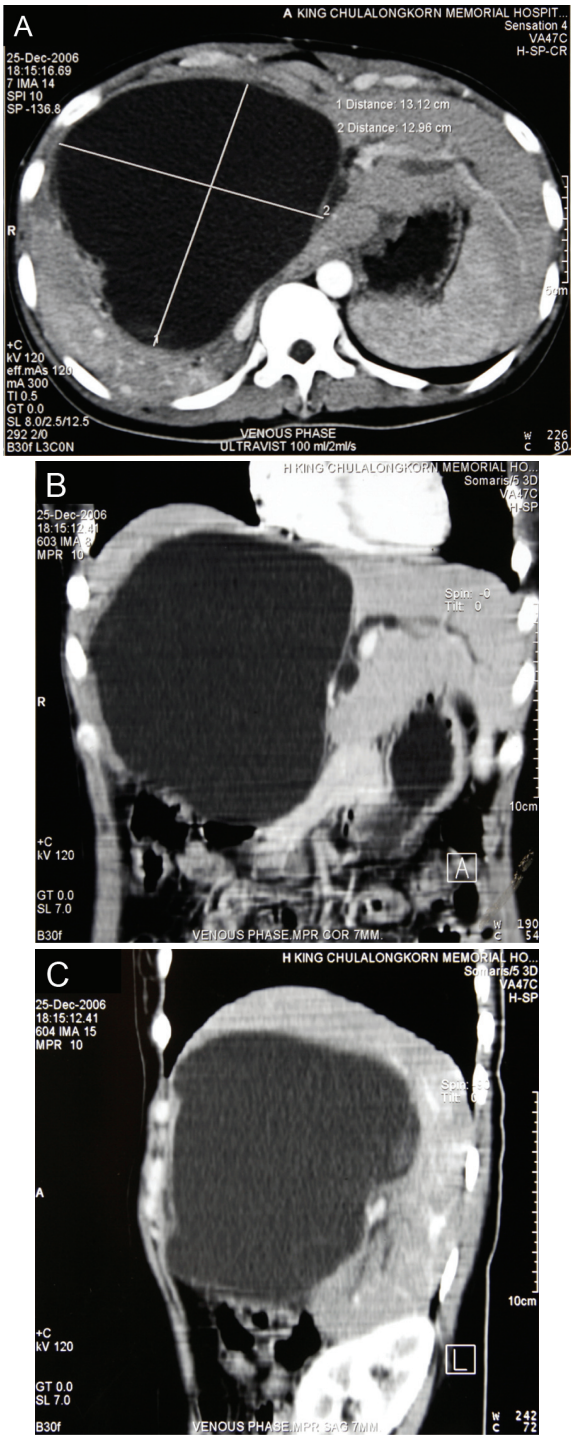

Fig. 2 CT scan of the abdomen on 25th December 2006, 20 months after re-operation (the second operation) and 50-60% cyst wall excision. Recurrent large cystic lesion of the liver (13.5 x 12.2 x 15.2 in size) was demonstrated. A) Horizontal plane, B) Frontal plane, C) Sagittal plane

She came back to us at King Chulalongkorn Memorial Hospital again on December 20, 2006 with symptoms of abdominal pain and discomfort. Abdominal CT scan on December 25, 2006 demonstrated a large recurrent cystic lesion of the liver, 13.5 x 12.2 x 15.2 cm in size (Fig. 2). Re-operation was considered necessary and was performed on January 4, 2007.

Operative findings

A large cystic mass occupying segment IV, V, VI, and VIII of the liver was found. The superior and lateral aspects of the cyst were surrounded by liver parenchyma. The inferior aspect of the cyst wall was surrounded by and adhered to the stomach, duodenum, and transverse colon (Fig. 3). The cystic fluid was clear and colorless. The inner surface of the cystic wall was smooth without any abnormal projections or masses.

Operative procedure

Total excision of the cyst was considered to be the operation of choice. The cyst wall was dissected from the surrounding superior and lateral liver parenchyma with the aid of the ultrasonic dissector (Cavitron Ultrasonic Surgical Aspirator, CUSA). Intermittent hepatic inflow occlusion (Pringle's

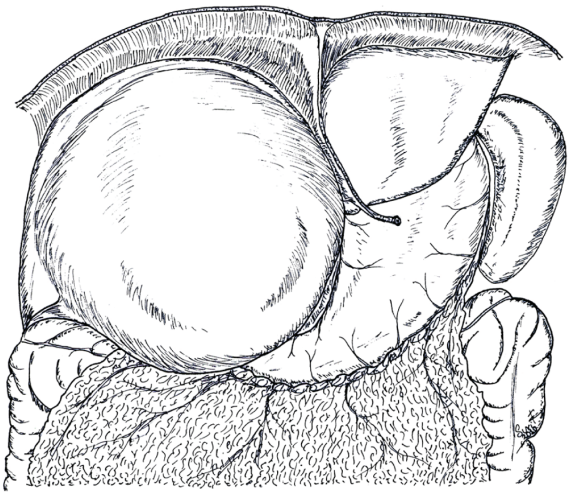

Fig. 3 Drawing of operative findings during the last operation on 4th January 2007 (the third operation). The superior and lateral aspects of the cyst were surrounded by liver parenchyma. The inferior aspect of the cyst wall was surrounded by and adhered to the stomach, duodenum and transverse colon

maneuver) was performed during dissection of the cyst wall from the liver parenchyma. Some parts of the inferior wall of the cyst were left attached to the surrounding stomach, duodenum, and transverse colon because of dense adhesions from previous operations. An inadvertent tear of the duodenum was repaired with one layer continuous suture of no. 4-0 polydioxanone (PDS). Two vacuum drains (Redivac) were placed in the raw surface of the liver bed. The total hepatic inflow occlusion time was 30 minutes. The operative time was 6 hours. The operative blood transfusion was three units. The pathological diagnosis of the cyst wall was simple cyst of the liver.

Postoperative period

The patient recovered well with minor bile leakage from the drains for a few weeks. The bile leakage ceased spontaneously. Abdominal CT scan on July 29, 2007 (6 months postoperatively) showed near total disappearance of the cystic lesion of the liver. She was allowed for pregnancy and delivered a healthy female newborn in August 2009. CT scan of the abdomen on December 28, 2009 (3 years after total excision of the cyst) revealed complete healing of liver parencyma (Fig. 4).

Discussion

Most simple cysts are asymptomatic and do not require any form of treatment. A very large simple cyst may cause symptoms of abdominal pain or discomfort and should be appropriately treated. Current treatment of symptomatic cyst includes non-operative management by ultrasound-guided aspiration of the cyst with or without instillation of sclerosing agent such as absolute alcohol and operative management by fenestration of the cyst wall by open or laparoscopic surgery[1-5].

Hepatic resection or total excision is rarely mentioned as a definitive treatment of symptomatic simple cyst of the liver in present-day surgical practice. The explanations may be one or more of the following reasons. Firstly, total excision is a major operative procedure with potential risks of bleeding and biliary tract injuries. Secondly, total cyst excision is a technically demanding surgical procedure and thirdly, acceptable results are currently achieved with other less aggressive procedures. However, hepatic resection or total cyst excision (cystectomy or complete cyst wall resection) is still recommended for treatment of symptomatic cysts in certain situations by some investigators[5-10].

For the presented patient, all treatment modalities except total cyst excision were considered unsuitable at the last operation. Aspiration of the cyst with instillation of sclerosing agent, preferably absolute alcohol, would require a large amount of agent with a high risk of complications. Open surgery and partial

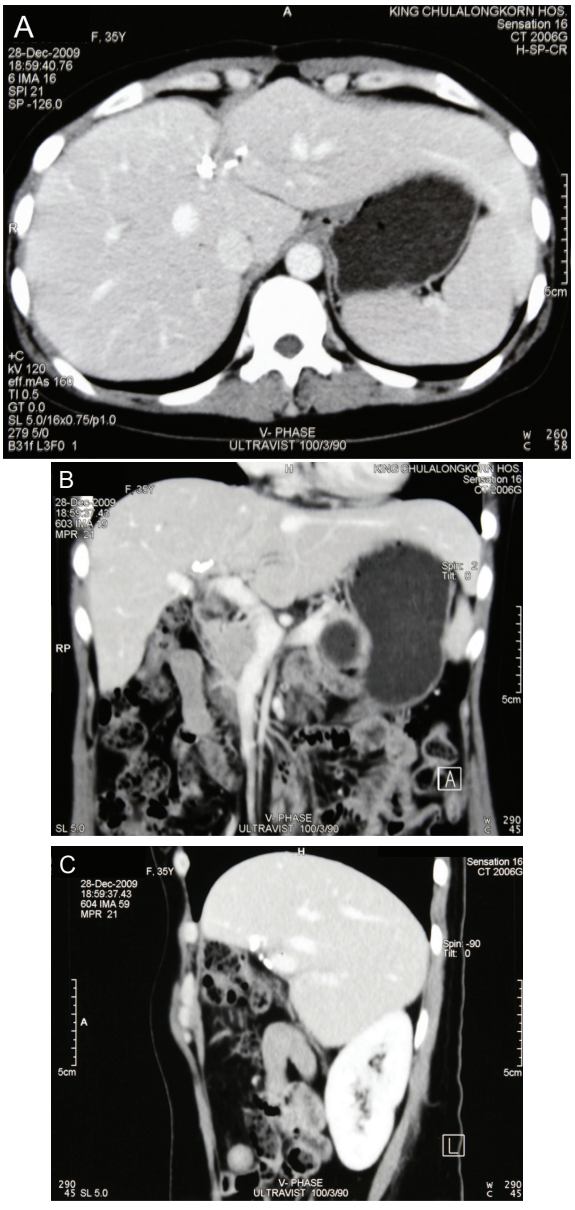

Fig. 4 CT scan of the abdomen on 28th December 2009, 3 years after total excision of the cyst. Complete healing of the liver parenchyma was noted. A) Horizontal plane, B) Frontal plane, C) Sagittal plane

excision of the cyst wall (unroofing, fenestration) was not chosen because of previous repeated failure. The authors thought that another recurrence would be very difficult to treat and would be very dangerous. Hence, total excision of the cyst was selected as an appropriate procedure.

Total excision of the simple liver cyst has long been recommended by some investigators[5,10]. Its popularity declined with time and was replaced by other less complex procedures. However, some investigators still supported its use in a recent report[6]. Total excision of the cyst, theoretically, contributes the lowest recurrent rate with preservation of the functional liver tissue[5-10]. The use of ultrasonic dissector and intermittent inflow occlusion decreases the blood loss and assists the surgeon to dissect along the proper plane between the cyst wall and the liver parenchyma. The authors concluded that total excision of symptomatic simple cyst of the liver is an attractive alternative when other treatment modalities fail.

Potential conflicts of interest

None.

References

1. Katkhouda N, Hurwitz M, Gugenheim J, Mavor E, Mason RJ, Waldrep DJ, et al. Laparoscopic management of benign solid and cystic lesions of the liver. Ann Surg 1999; 229: 460-6.
2. Gigot JF, Metairie S, Etienne J, Horsmans Y, van Beers BE, Sempoux C, et al. The surgical management of congenital liver cysts. Surg Endosc 2001; 15: 357-63.
3. Regev A, Reddy KR, Berho M, Sleeman D, Levi JU, Livingstone AS, 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.
4. Ammori BJ, Jenkins BL, Lim PC, Prasad KR, Pollard SG, Lodge JP. Surgical strategy for cystic diseases of the liver in a western hepatobiliary center. World J Surg 2002; 26: 462-9.
5. Martin IJ, McKinley AJ, Currie EJ, Holmes P, Garden OJ. Tailoring the management of nonparasitic liver cysts. Ann Surg 1998; 228: 167-72.
6. Tocchi A, Mazzoni G, Costa G, Cassini D, Bettelli E, Agostini N, et al. Symptomatic nonparasitic hepatic cysts: options for and results of surgical management. Arch Surg 2002; 137: 154-8.
7. Madariaga JR, Iwatsuki S, Starzl TE, Todo S, Selby R, Zetti G. Hepatic resection for cystic lesions of the liver. Ann Surg 1993; 218: 610-4.
8. Sanchez H, Gagner M, Rossi RL, Jenkins RL, Lewis WD, Munson JL, et al. Surgical management of nonparasitic cystic liver disease. Am J Surg 1991; 161: 113-8.
9. Edwards JD, Eckhauser FE, Knol JA, Strodel WE, Appelman HD. Optimizing surgical management of symptomatic solitary hepatic cysts. Am Surg 1987; 53: 510-4.
10. Jones WL, Mountain JC, Warren KW. Symptomatic non-parasitic cysts of the liver. Br J Surg 1974; 61: 118-23.

การรักษาถุงน้ำของตับโดยการตัดผนังออกทั้งหมด

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ถุงน้ำของตับเป็นพยาธิสภาพไม่ร้ายแรงที่พบบ่อย ส่วนใหญ่ไม่มีอาการและไม่ต้องการการรักษาใด ๆ การรักษาจะทำต่อเมื่อผู้ป่วยมีอาการอันเนื่องมาจากถุงน้ำมีขนาดใหญ่หรือมีการติดเชื้อ การรักษาในปัจจุบันมีตั้งแต่ใช้เข็มเจาะดูดของเหลวในถุงน้ำออก และใส่สารที่มีผลทำให้เกิดปฏิกิริยาของเยื่อบุผิวของถุงน้ำ (sclerosing agents), ตัดผนังของถุงน้ำบางส่วนออก (มากกว่าร้อยละ 50 ของผนังทั้งหมดของถุงน้ำ) ด้วยวิธีส่องกล้อง หรือ เปิดผ่าตัด จนถึงการตัดตับหรือตัดผนังถุงน้ำออกทั้งหมด สำหรับการผ่าตัดเอาผนังของถุงน้ำออกทั้งหมดจะทำเมื่อมีความจำเป็นต่อเมื่อวิธีอื่นไม่ได้ผล ผู้นิพนธ์ได้รายงานการรักษาถุงน้ำขนาดใหญ่ของตับโดยวิธีตัดเอาผนังของถุงน้ำออกทั้งหมดเป็นผลสำเร็จในผู้ป่วยที่ได้รับการผ่าตัดเอาผนังของถุงน้ำบางส่วนออก 2 ครั้ง และมีการเกิดใหม่ทั้ง 2 ครั้ง