

Large Omental Cyst: A Case Report and Review of the Literature

Mohammad Reza Motie and Mehdi Asadi

Department of Surgery, Surgical Oncology Research Center, Imam Reza Hospital, Faculty of Medicine,
Mashhad University of Medical Sciences, Mashhad, Iran

Received: 20 Jan. 2011; Received in revised form: 12 Apr. 2011; Accepted: 5 May 2011

Abstract- Omental cysts occur rarely. Patients with Omental cysts usually present with abdominal distention and a painless abdominal mass. In children it may present as an acute abdomen due to intestinal obstruction. The most common physical finding of an omental cyst is a freely movable abdominal mass, which should be considered in differential diagnosis of these cases. The diagnostic procedures include ultrasonography and computed tomography (CT) scans. Complete excision of the cyst is considered as the treatment of choice. Recurrence and malignant deterioration of omental cysts are rare. We describe a 32-year-old female who presented with complaints of vague abdominal pain and distension. The patient underwent laparotomy with preoperative diagnosis of the ovarian cyst. The diagnosis of omental cyst was established by intraoperative findings. Thus, complete excision of the cyst was performed. The diagnosis was confirmed by pathological examination.

© 2011 Tehran University of Medical Sciences. All rights reserved.

Acta Medica Iranica, 2011; 49(10): 690-693.

Keywords: Omentum; Mesenteric cyst; Abdominal mass

Introduction

Mesenteric and omental cyst are the rare intra-abdominal pathologies occurring in approximately one of 105,000 to 140,000 hospitalized patients (1,2). Only 2.2% of these cysts are omental cysts (3). The omental cysts are rarer, with only about 150 cases reported till now, 25% of which presented in children less than 10 years of age (4). Some Japanese literature indicate that omental cysts develop more frequently in men than in women whereas in Western countries there is a female predominance (5). The first report of an omental cyst was published in 1852 by Gairdner (6).

Case Report

A 32 year-old female with complaints of vague abdominal pain and distension came to our clinic. She had a history of continuous abdominal distension over the last recent years. A severely tense distended abdomen without tenderness and a non-mobile 20×16 cm mass with no pain was noted. There were no other remarkable findings on physical examination.

The laboratory tests showed normal CBC, β HCG, α Fpr, CEA and Ca 125. Ultrasonography (US) revealed a huge multicystic mass occupying the whole abdominal cavity (Figure 1).

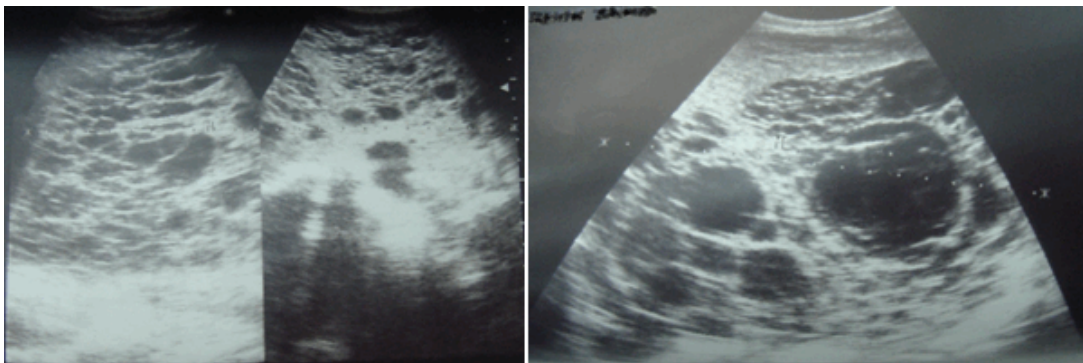


Figure 1. Ultrasonography (US) scan demonstrating a huge multicystic mass occupying the whole abdominal cavity.

Corresponding Author: Mohammad Reza Motie

Surgical Oncology Research Center, Imam Reza Hospital, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
Tel: +98 511 8022677, Fax: +98 511 8525255, E-mail: motiem@mums.ac.ir

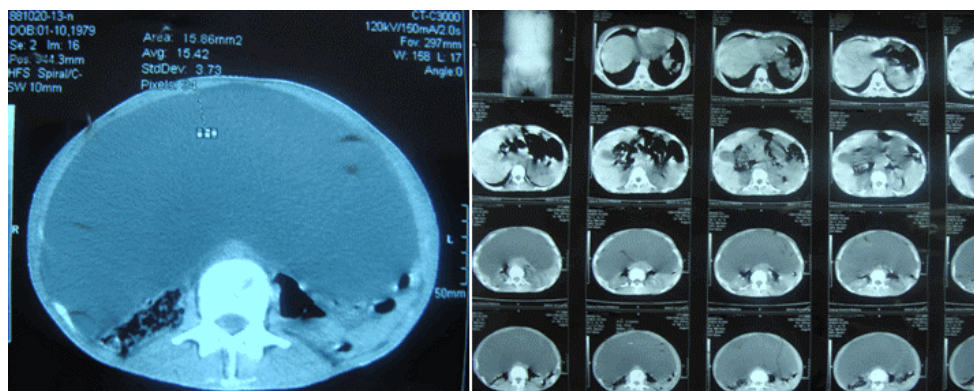


Figure 2. Computed tomography (CT) scan demonstrating a multicystic 231×161 mm mass occupying nearly the whole abdomen and pelvis.

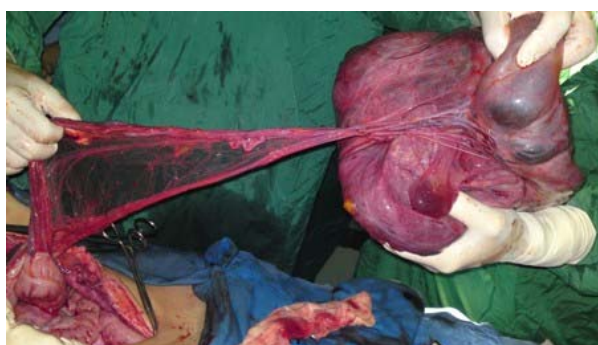


Figure 3. A multiloculated mass with a big solid part (7 kg) that was attached posterior to greater omentum with a vascular pedicle.

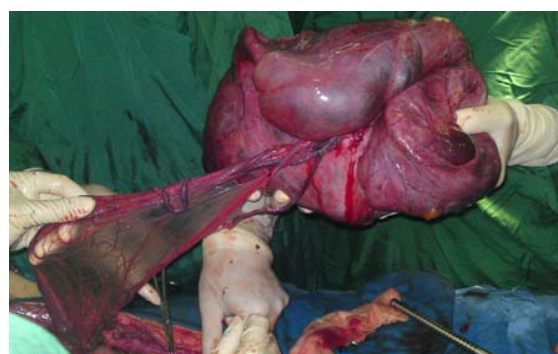


Figure 4. A multiloculated mass with a big solid part (7 kg) that was attached posterior to greater omentum with a vascular pedicle.

In computed tomography (CT) scan, a multicystic 231×161 mm mass which occupied nearly the whole abdomen and pelvis was detected (Figure 2).

The patient underwent surgery with probable diagnosis of ovarian cyst. The abdomen was opened in the midline. Intraoperative findings showed a very huge mass extending from the pelvis to the xiphoid process with a thin wall and adhesion to the peritoneum in the right and left upper quadrants. Because of the thin wall thickness it was impossible to release the adhesions. So the cyst was extracted and, approximately 7 L of serous fluid was drained.

The mass was thoroughly examined and palpated. There was a multiloculated mass with a big solid part (7 kg) that was attached posterior to greater omentum with a vascular pedicle (Figures 3&4). The tumor was totally excised and sent for pathological analysis.

Microscopic analysis of the mass demonstrated cystic structures of different sizes containing an acidophil material with one line of squamous epithelium.

This finding correlates with multiloculated inclusion cyst of peritoneum. Immunohistochemical staining for S100, CD31 and calitirinin was done; and CD31 was found to be positive. Thus, the diagnosis of the ommental cyst was confirmed.

Discussion

Mesenteric and ommental cysts are thought to represent benign proliferations of ectopic lymphatics that lack communication with the normal lymphatic system that had failed to communicate normally with the lymphatic system (7). It is believed that these cysts arise from lymphatic spaces associated with the embryonic retroperitoneal lymph sac, making them similar to cystic hygromas, which arise in the neck in association with the jugular lymph sac. Lymphatic obstruction is another proposed etiology (8). Other etiologic hypotheses include: 1- failure of the embryonic lymph channels to join the venous system, 2- failure of the leaves of the

Large omental cyst

mesentery to fuse, 3- trauma, 4- neoplasia, and 5- degeneration of the lymph nodes (2).

Omental cysts are restricted to the lesser or greater omentum (9). The present case is a large omental cyst which has been developed on a pedicle from the greater omentum in the region of the transverse colon. Mesenteric and omental cysts can be simple or multiple, unilocular or multilocular, and may contain hemorrhagic, serous, chylous, or infected fluid (2,4). They range in size from 3cm to 30 cm in diameter (9). Our patient had a 20×16 cm multilocular cystic mass contained 7 L of serosanguinous liquid and a solid part of 7 kg.

Clinical presentations include an abdominal painless mass, abdominal distention, abdominal pain, and possible ascites (5,8). Compression of the portal vein and respiratory disorder are another symptoms caused by the massive enlargement of the cyst (5). The most common physical finding of a mesenteric cyst is a compressible abdominal mass, movable transversely but not longitudinally, whereas the omental cysts are freely movable (4,10). Between 11% and 19% of patients present with acute abdominal symptoms due to torsion, bleeding, or rupture of a cyst (5).

The most prevalent mode of acute presentation in children is that of a small bowel obstruction, which may be accompanied by intestinal volvulus or infarction (11). An irreducible inguinal hernia is a very unusual presentation of a mesenteric cyst (12). The differential diagnosis involves consideration of intestinal duplication cyst; ovarian, choledochal, pancreatic, splenic, or renal cysts; hydronephrosis; cystic teratoma; hydatid cyst; and ascites (8). A correct preoperative diagnosis of omental cyst has been made in only about 13-25% of the reported cases (5). The diagnosis requires a high index of clinical suspicion and a more careful examination, considering the classical signs of ascetic versus non ascetic abdominal distension (3).

Today, ultrasonography and CT scans enable us to diagnose this disease prior to surgical intervention (5). Ultrasonography is often the initial imaging modality of choice for making the diagnosis (7,13). It reveals fluid-filled cystic structures, commonly with thin internal septa and sometimes with internal echoes from debris, hemorrhage, or infection (7). Abdominal CT scanning adds minimal additional information, although it can confirm the organ of origin of the cyst such as the kidney, pancreas, or ovary (7). Our patient underwent CT scanning and US allowing us to locate the tumor precisely and identify its relation to the surrounding tissues, leading to the diagnosis of an ovarian cyst.

Complete excision of the omental cyst is now considered as the preferred treatment of choice (2,8,14). It is rarely necessary to resect the bowel, and recurrence is rare (8). The present case was cured by total resection of the cyst that was free of disease during the first year of follow-up. Even if the patient has no symptoms, cystectomy is usually indicated because of the possibility of torsion, rupture, bleeding and infection (5). Malignant deterioration of omental cyst is rare. There are only few reports of sarcoma and adenocarcinoma (8,15).

Laparoscopic management and hand assisted laparoscopic tumorectomy and aspiration for large cysts has been advocated by some authors, but emphasized the risk of spillage from the cyst if it is found not to be benign. A laparoscopic operation proves a suitable approach because of the advantages of lower costs and decreased operative morbidity and hospital stay comparable results to open surgery (9,10,16,17). Uramatsu *et al.* preferred open surgery to avoid the risk of spreading the cyst contents (5). Our patient was planned as open because of the very large cyst and no possibility for laparoscopic management.

Omental cysts occur very rarely, but when encountering an abdominal mass it should be taken into consideration. The initial diagnosis should be made by performing CT scanning and ultrasonography. If the diagnosis is confirmed, the main treatment would be surgery. Laparoscopic resection of the small cysts can be performed by an experienced surgeon, but in large types or in case of any doubt of malignancy, open surgery is strongly recommended.

Acknowledgment

The authors gratefully acknowledge the contribution of Ms. M. Hassanpour for editing the manuscript.

References

1. Tan JJ, Tan KK, Chew SP. Mesenteric cysts: an institution experience over 14 years and review of literature. *World J Surg* 2009;33(9):1961-5.
2. Egozi EI, Ricketts RR. Mesenteric and omental cysts in children. *Am Surg* 1997;63(3):287-90.
3. Moralioglu S, Sonmez K, Turkyilmaz Z, Basaklar AC, Kale N. A child with a giant omental cyst. *Acta Chir Belg* 2007;107(6):724-5.
4. Vanek VW, Phillips AK. Retroperitoneal, mesenteric, and omental cysts. *Arch Surg* 1984;119(7):838-42.

5. Uramatsu M, Saida Y, Nagao J, Takase M, Sai K, Okumura C, Nakamura Y, Nakamura Y, Kusachi S, Kajiwara H, Asai K, Sumiyama Y, Takahashi K. Omental cyst: report of a case. *Surg Today* 2001;31(12):1104-6.
6. Kurtz RJ, Heimann TM, Holt J, Beck AR. Mesenteric and retroperitoneal cysts. *Ann Surg* 1986;203(1):109-12.
7. Kumar S, Agrawal N, Khanna R, Khanna AK. Giant lymphatic cyst of omentum: a case report. *Cases J* 2009;2:23.
8. Hebra A, Brown MF, McGeehin KM, Ross AJ 3rd. Mesenteric, omental, and retroperitoneal cysts in children: a clinical study of 22 cases. *South Med J* 1993;86(2):173-6.
9. Conzo G, Vacca R, Grazia Esposito M, Brancaccio U, Celsi S, Livrea A. Laparoscopic treatment of an omental cyst: a case report and review of the literature. *Surg Laparosc Endosc Percutan Tech* 2005;15(1):33-5.
10. Kuriansky J, Bar-Dayan A, Shabtai M, Barshach I, Rosin D, Ayalon A. Laparoscopic resection of huge omental cyst. *J Laparoendosc Adv Surg Tech A* 2000;10(5):283-5.
11. Kosir MA, Sonnino RE, Gauderer MW. Pediatric abdominal lymphangiomas: a plea for early recognition. *J Pediatr Surg* 1991;26(11):1309-13.
12. Mohanty SK, Bal RK, Maudar KK. Mesenteric cyst: an unusual presentation. *J Pediatr Surg* 1998;33(5):792-3.
13. Nett MH, Vo NJ, Chapman T. Large omental cyst. *Radiol Case Rep (RCR)* 2010;5(2):388.
14. Shackelford GD, McAlister WH. Cysts of the omentum. *Pediatr Radiol* 1975;3(3):152-5.
15. Rahman GA, Abdulkadir AY, Olatoke SA, Uwaezuoke S, Yusuf IF, Braimoh KT. Giant neoplastic omental cyst masquerading as ascites: a case report. *Cases J* 2009;2:6482.
16. Horiuchi T, Shimomatsuya T. Laparoscopic excision of an omental cyst. *J Laparoendosc Adv Surg Tech A* 1999;9(5):411-3.
17. Conlon KC, Dougherty EC, Klimstra DS. Laparoscopic resection of a giant omental cyst. *Surg Endosc* 1995;9(10):1130-2.