

MESENTERIC AND OMENTAL CYSTS IN CHILDREN*

Analysis of Nineteen Cases

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SUMMARY: Şenocak ME, Gündoğdu H, Büyükpamukçu N, Hiçsönmez A. Department of Pediatric Surgery, Hacettepe University Faculty of Medicine, Ankara, Turkey). Mesenteric and omental cysts in children: analysis of nineteen cases. Turk J Pediatr 1994; 36: 295-302.

Mesenteric and omental cysts are infrequently encountered, benign, intraabdominal tumors. Nineteen new patients were analysed. The most common presenting symptoms were abdominal distension (74%) and abdominal pain (63%). A palpable abdominal mass was found in 58 percent of cases. A correct preoperative diagnosis was established in 91 percent of the patients who were examined by abdominal ultrasonography. Of 19 cases documented at laparotomy, 14 patients (74%) had mesenteric, and five patients (26%) omental cysts. Eleven of the former were located in the small bowel mesentery. All of the cysts were completely removed, and in eight of them bowel resection was required. Subtotal gastrectomy was performed in one case. The mortality rate was 0%. After a mean follow-up period of five years, no recurrence was observed. Our study showed that abdominal ultrasonography by experienced professionals is the most reliable diagnostic tool for detecting these lesions. *Key words: mesenteric cysts, omental cysts, intraabdominal cysts, intraabdominal cystic lymphangiomas.*

Mesenteric and omental cysts are uncommon, clinically confusing, unilocular or multilocular, endothelium-lined, intraabdominal, benign lesions that contain either chylous or serous fluid¹.

Many etiologic theories propose that these cysts arise from a congenital developmental abnormality of the lymphatic system, which results in ectopic lymphatic tissue that proliferates and collects fluid owing to a lack of communication with the central lymphatic system¹.

Because these cysts are seen so infrequently, very little information about them is available². Only a few cases are documented in the literature. For these reasons, our relatively large surgical experience with these cysts has been reviewed to aid other clinicians in the diagnosis and treatment of these uncommon pathologies.

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Table I: Clinical Summary of the Patients

Case No.	Age (Year)	Sex	Presenting Complaints	Palpable Mass	Type	Localization	Surgical Procedures	Complications and treatment	Results
1	8/12	M	Abdominal pain	Present	MC	Descending colon	Resection and anastomosis	Early adhesive ileus, Adhesiolysis	Recovered
2	6	F	Abdominal distension	Present	MC	Ileum	Simple excision	—	Recovered
3	6	F	Abdominal pain and distension	Absent	MC	Ileum	Simple excision	—	Recovered
4	4	F	Abdominal pain	Absent	MC	Jejunum	Resection and anastomosis	—	Recovered
5	14	F	Abdominal distension	Present	MC	Ileum	Resection and anastomosis	—	Recovered
6	3	M	Abdominal distension	Present	OC	Omentum major	Simple excision,	Pyloric obstruction,	Recovered
					OC	Omentum minus	Subtotal gastrectomy	Pyloroplasty	
7	2 1/2	M	Abdominal distension	Absent	MC	Sigmoid colon	Resection and anastomosis	—	Recovered
8	3	F	Abdominal pain, vomiting	Present	MC	Ileum	Resection and anastomosis	—	Recovered
9	3 1/2	M	Abdominal pain and distension	Present	OC	Omentum major	Simple excision	—	Recovered
10	1 1/2	M	Abdominal pain and distension	Present	MC	Ileum	Simple excision	—	Recovered
11	12	M	Abdominal pain and distension	Absent	OC	Omentum major	Simple excision	—	Recovered
12	7	M	Abdominal distension	Present	MC	Ascending colon	Simple excision	—	Recovered
13	12	F	Abdominal pain, vomiting	Absent	MC	Ileum	Resection and anastomosis	—	Recovered
14	4	F	Abdominal pain and distension	Present	MC	Jejunum	Resection and anastomosis	—	Recovered
15	8 1/2	M	Abdominal pain	Absent	MC	Jejunum	Simple excision	—	Recovered
16	3	M	Abdominal pain and distension	Absent	OC	Omentum major	Simple excision	—	Recovered
17	6	M	Abdominal pain and distension, vomiting	Present	OC	Omentum major	Simple excision	—	Recovered
18	6	M	Abdominal distension	Absent	MC	Jejunum	Resection and anastomosis	—	Recovered
19	9	M	Abdominal distension	Present	MC	Jejunum	Simple excision	—	Recovered

Abbreviations: MC, mesenteric cyst; OC, omental cyst.

Material and Methods

Nineteen patients with mesenteric ($n = 14$) and omental ($n = 5$) cysts treated in the Pediatric Surgery Department of Hacettepe University Faculty of Medicine between January 1973 and January 1989 have been reviewed. Twelve patients were male and seven were female. The ages of the patients ranged between 8 months and 14 years, with a median age of 5.87 ± 1.81 years. The clinical history of the disease was learned from the parents and the patients themselves.

After a general physical examination and routine laboratory studies (e.g. complete blood count, urinalysis, plain radiographs of the abdomen and chest), intravenous pyelography (IVP) and barium enema were obtained to rule out the existence of a mass originating from the gastrointestinal (GI) or genitourinary tract. Abdominal ultrasonography has been performed as a first diagnostic study since 1983 and was used in 11 cases presented here.

All of the patients underwent laparotomy, and all of the cysts were removed completely. Clinical data of the cases are summarized in Table I.

Results

According to the statistical records, there were approximately 1,471,968 admissions to Hacettepe University Children's Hospital between 1973 and 1989. Nineteen patients with mesenteric and omental cysts were treated during this 16-year period.

Abdominal distension and pain were chief presenting symptoms in 14 and 12 of the patients, respectively, while these symptoms coexisted in seven patients. One patient presented with an acute mechanical obstruction of the small bowel as a result of firm adhesions between the intestinal segments and omental cyst. Two patients presenting with intermittent vomiting had partial intestinal obstruction due to compression of the bowel stretched over the cyst in the ileal mesentery.

On physical examination, an abdominal mass could be palpated in 11 of the 19 patients (58%). Nine of those (82%) had protuberant abdomens.

Plain radiographs of the abdomen showed a mass effect that is gasless, homogenous, and of water density displacing the intestinal tract gases in three (16%) patients (Fig. 1a). Abdominal calcification was not observed in any case. IVP was obtained in 10 cases and was interpreted as normal. Only two of the nine barium enemas revealed intraabdominal mass effect, displacing the sigmoid and ascending colon (Fig. 1b); the others were completely normal. Abdominal ultrasonography delineated the cystic mass in 10 of 11 patients examined (Fig. 2a-b).

On laparotomy, 14 mesenteric and six omental cysts were found. (One patient

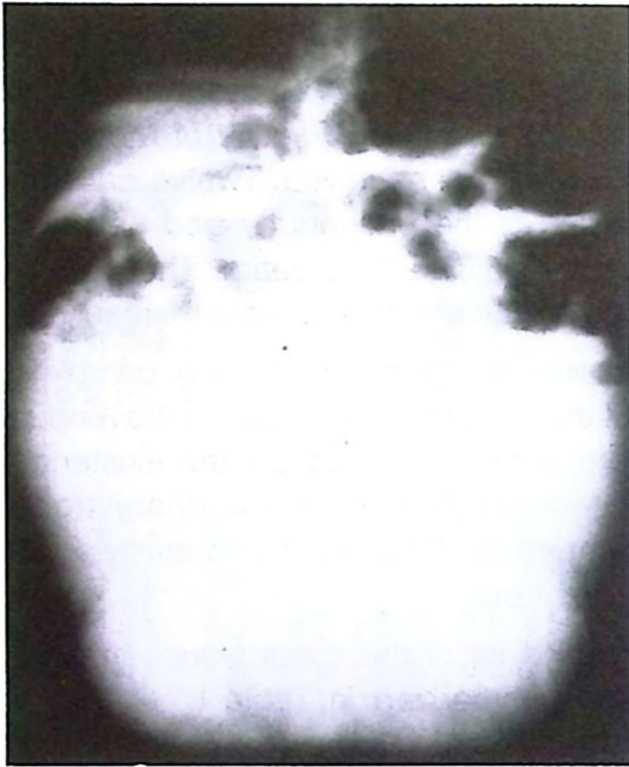


Fig. 1a) Plain abdominal radiograph showing space-occupying mass effect displacing the bowel gases.



Fig. 1b) The barium enema demonstrating an extrinsic mass impinging on the sigmoid and ascending colon.

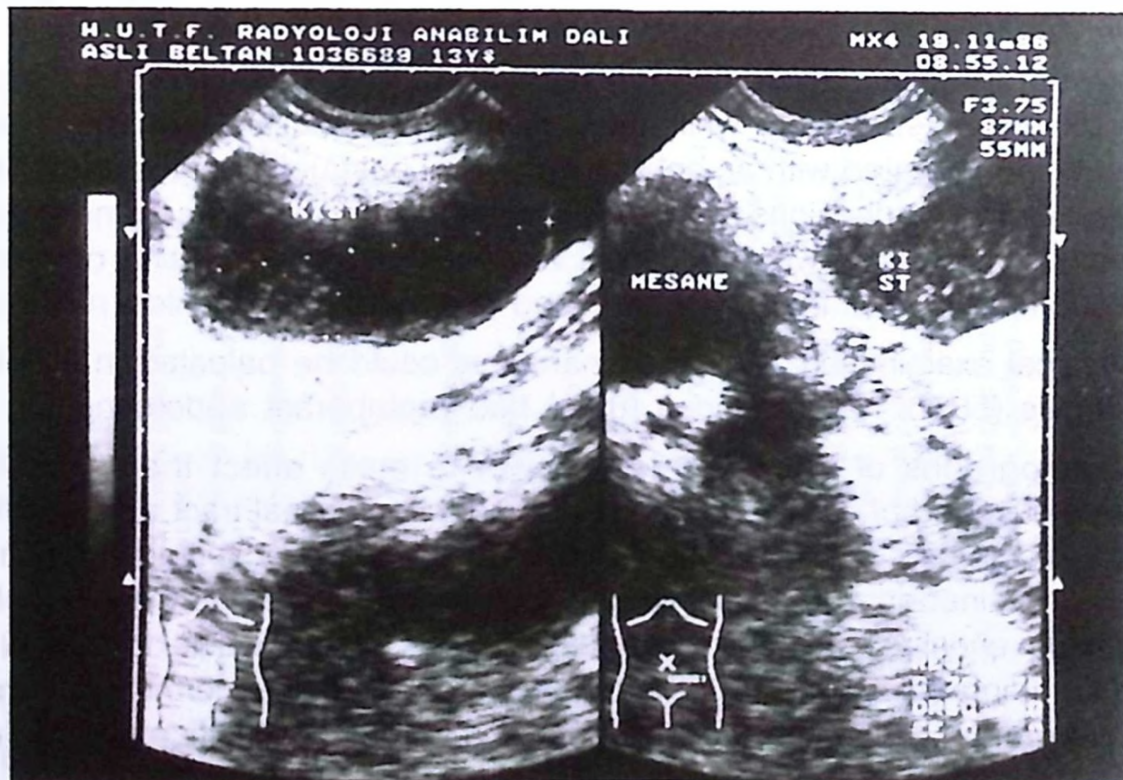


Fig. 2a) Abdominal ultrasonography showing an intraabdominal cystic mass filled with fluid.

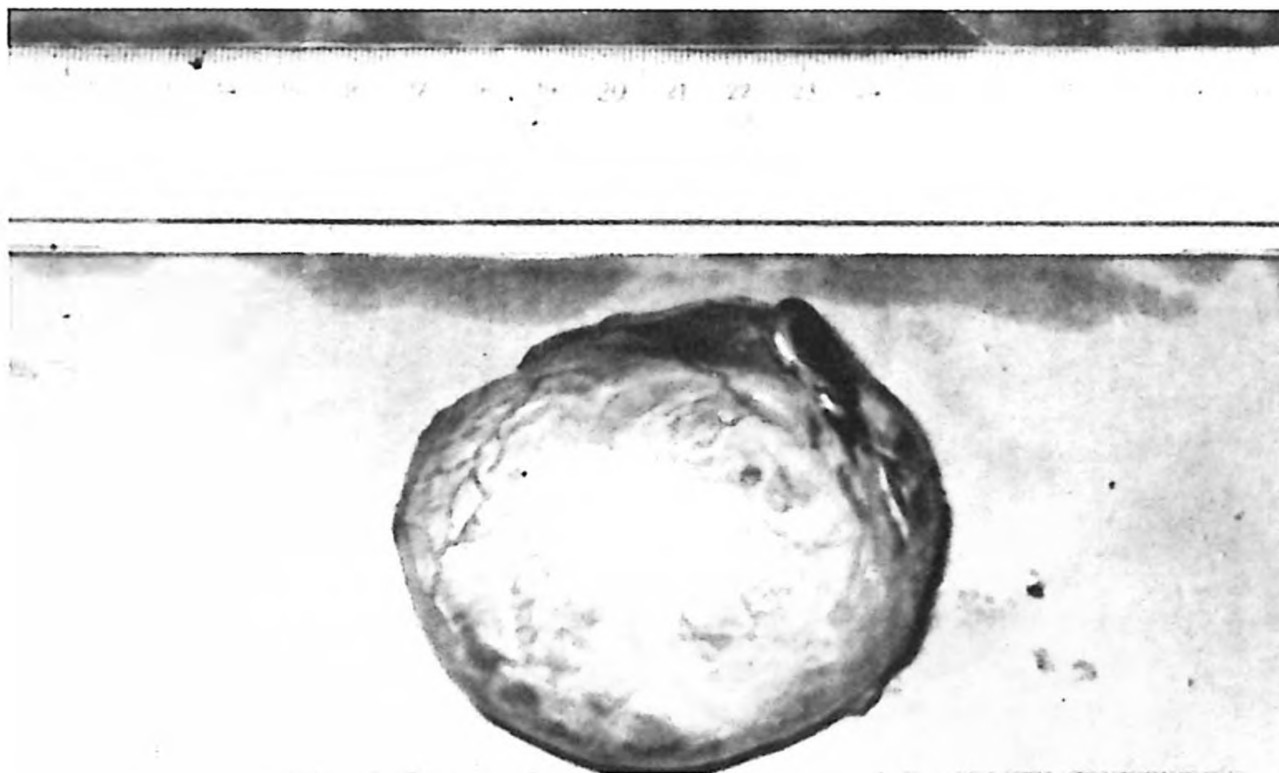


Fig. 2b) Gross surgical specimen of the same patient: the mesenteric cyst has been totally excised with adjacent bowel segment.

had two omental cysts in the omentum minus and major). Of the mesenteric cysts, six were ileal, five were jejunal, and three were in the large bowel mesentery (Table I). All of the omental cysts were serous. Two of the mesenteric cysts contained chylous fluid (Fig. 3 a-b).

Five omental and six mesenteric cysts were simply excised. In eight cases, the overlying bowel was resected along with the cyst, and primary end-to-end anastomosis was performed. Subtotal gastrectomy was performed to remove the cyst located in the omentum minus in one case. Seventeen of the patients had uneventful recoveries. Early adhesive ileus requiring surgical intervention developed in one patient on the seventh postoperative day, and adhesiolysis was performed. Another patient who had a subtotal gastrectomy was readmitted with evidence of pyloric obstruction 16 days after the initial operation, and pyloroplasty was performed. None of the patients developed a recurrence of the cyst and required a second operation after a mean follow-up period of five years.

Microscopic examination of the specimens showed simple cysts with a lining composed of either fibrous tissue or single-layered endothelial cells in all cases. Cyst wall calcification was not detected in any of the patients, and none of the cysts was malignant.

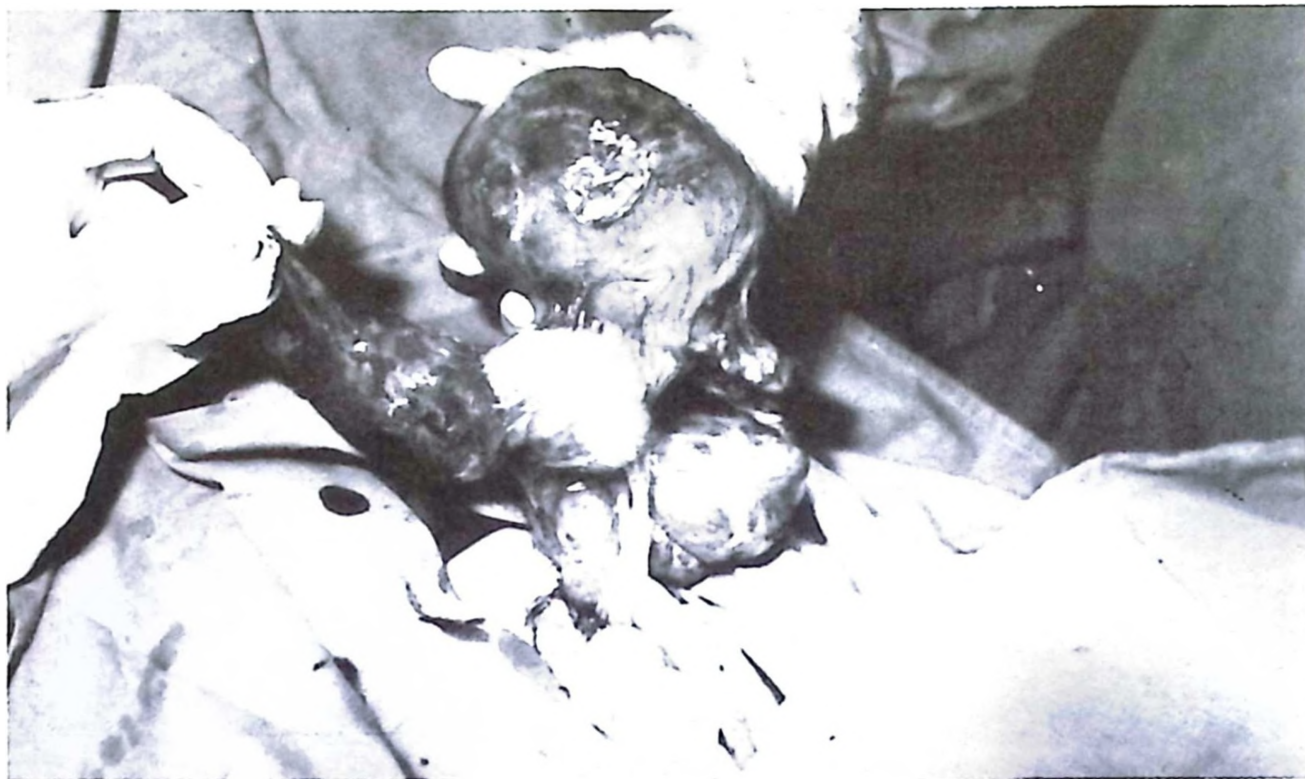
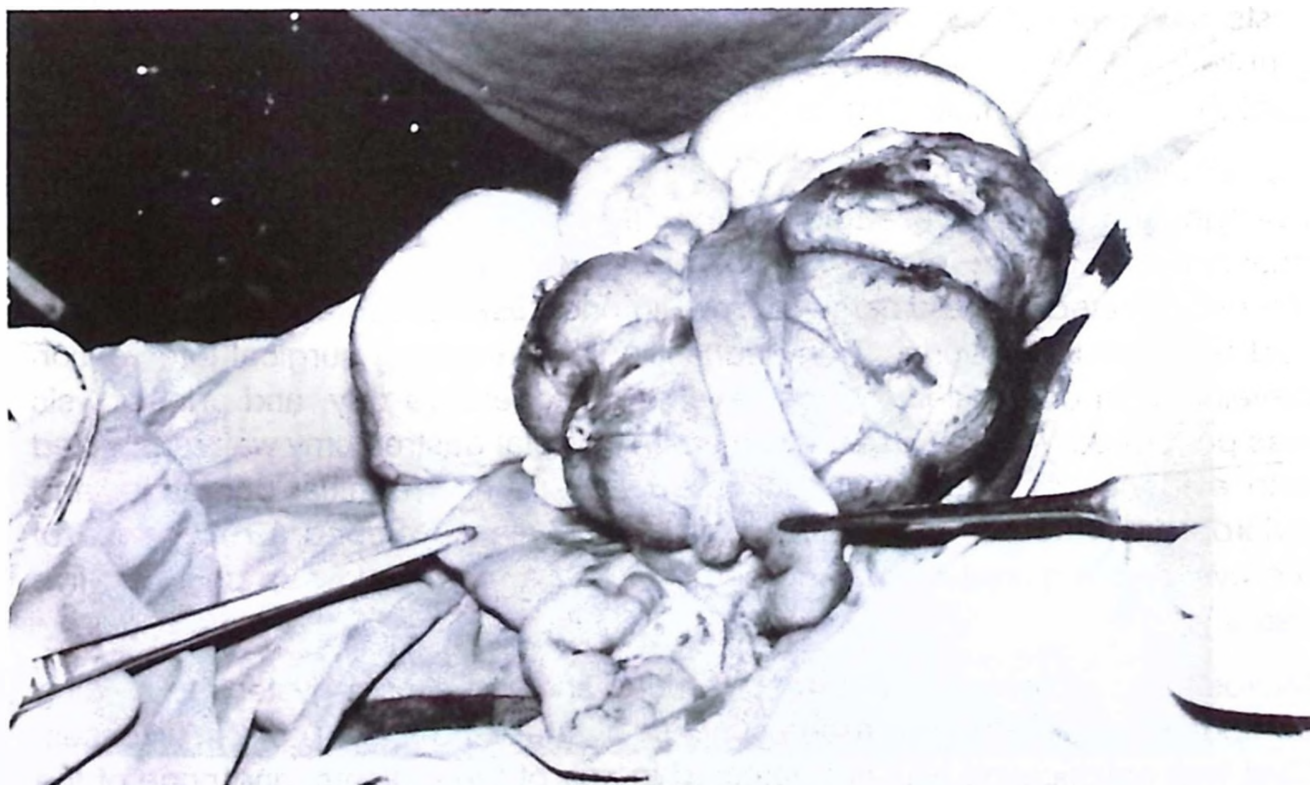


Fig. 3: a) Operative view of a multiloculated omental cyst causing intestinal obstruction.



b) A huge multiloculated mesenteric cyst containing chylous fluid.

Discussion

Mesenteric and omental cysts are infrequent intraabdominal lesions. Several series have indicated that 25 percent of reported cases have been in children¹. The estimated incidence in our series (1 / 77,472) is quite similar to the previously reported incidences²⁻⁴.

There are no pathognomonic signs and / or symptoms of mesenteric and omental cysts². They may be asymptomatic or may cause abdominal distension and / or pain or may present acute symptoms secondary to complications such as obstruction (volvulus, extrinsic compression or entrapment in pelvis), rupture, hemorrhage into cyst, or infected cyst or abscess^{1,3}. The clinical history and findings on physical examination may suggest the possibility of a cyst. Although these findings are nonspecific, when the patient also presents with a long duration of symptoms, an intraabdominal mass should be suspected. Abdominal pain and distension have been reported as the most common presenting symptoms². In our series, abdominal distension was present in 74 percent of the cases and abdominal pain in 63 percent. Only one of the patients presented with acute symptoms due to intestinal obstruction.

The cysts may be located anywhere within the abdomen. Mesenteric cysts are most common in the small bowel mesentery, especially in the ileum³. We also identified a great number of mesenteric cysts (79%) in the small bowel mesentery.

Some of the lesions (such as large ovarian cysts, pancreatic, choledochal cysts or enteric duplication) and ascites (if loculated in the midabdomen) may be difficult to differentiate from these cysts. Only one patient with an extremely large omental cyst had been misdiagnosed with ascites. A correct preoperative diagnosis was made in only 25 percent of previously reported cases². In our series, 79 percent of the patients were diagnosed preoperatively. This result has been attributed to the existence of a palpable mass in 58 percent of patients. Plain radiographs of the abdomen infrequently show nonspecific abnormalities, such as intraabdominal calcifications and / or displacement of the bowel gases, suggesting a space-occupying mass. GI tract contrast studies (upper GI series, barium enema) may reveal an extrinsic mass effect in a small number of cases, but these are not more efficient than plain radiographs of the abdomen. IVP may also exclude genitourinary cysts and tumors. With these studies, the diagnosis of an intraabdominal mass was made in five of the patients (26%) in our series. According to our experience, abdominal ultrasonography is the most reliable diagnostic study in experienced hands; 91 percent of our patients were correctly diagnosed by ultrasonographic examination. In suspected cases, the diagnosis should be confirmed with computed tomography (CT). We had no need for CT.

The surgical goal is complete excision of the cyst. Simple excision is feasible in many patients; however, resection of the adjacent bowel may also be required in some mesenteric cysts in intimate contact with the bowel. We removed all of the cysts completely, and bowel resection with the cyst was necessary in 57 percent of patients. With successful excision, recurrence is exceedingly rare. We had no recurrence in a mean follow-up period of five years.

Malignant neoplasm of the cyst wall is also extremely rare, but several cases of sarcoma and a few cases of adenocarcinoma have been reported in only adults^{2,3}. Among our cases, no cyst wall malignancy was encountered.

Currently, expected mortality has been reported as zero to eight percent with simple excision and three to 15 percent with accompanying bowel resection³. Our mortality rate (0%) is also in agreement with the literature.

Finally, we emphasize that mesenteric and omental cysts are uncommon though not rare lesions. With a high index of suspicion and the use of ultrasonography and CT, the correct preoperative diagnosis may be made in almost all cases.

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