

The Disappearing Abdominal Mass: Mesenteric Pseudocyst

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ABSTRACT

Introduction: *Mesenteric pseudocyst* is a term used to describe an abdominal cystic mass with an unknown abdominal origin. They are rare intra-abdominal masses, with a reported incidence of approximately 1 per 100,000 to 250,000 hospital admissions. Most cysts are benign and they may present differently, such as a disappearing mass or a mass that changes locations, thus posing a diagnostic challenge to the clinician.

Case Report: We describe a case of a 29-year-old woman who presented with a 2-year history of feeling a large mass within her abdomen, which would then disappear for several days and would frequently change position and be felt in different quadrants of her abdomen. Computed tomography scan of the abdomen revealed a large cystic structure, and a computed tomography–guided biopsy was inconclusive. Diagnostic laparoscopic surgery revealed a firm mass arising from the jejunal mesentery; the patient underwent an en bloc resection. Histopathologic examination of the resected mass revealed a rare diagnosis of mesenteric pseudocyst. Mesenteric pseudocyst should be kept high on the list of differential diagnoses when a patient presents with a disappearing mass and/or an abdominal mass that changes location.

Key Words: Mesenteric pseudocyst, Mesenteric cyst, Benign mesenteric tumor, Small bowel, Pseudocyst.

INTRODUCTION

Mesenteric pseudocysts are rare intra-abdominal masses, with a reported incidence of approximately 1 per 100,000 to 250,000 hospital admissions.^{1,2} *Mesenteric pseudocyst* is a term used to describe an abdominal cystic mass without knowledge of its abdominal organ of origin.³ It has been classified according to etiology, embryological origin, and histology. The term has also been used to describe lesions such as lymphangioma, pseudocyst, enteric duplication cyst, enteric cyst, and mesothelial cyst.⁴ In adults, mesenteric cysts occur primarily in the fourth decade of life,⁵ and they occur with almost equal incidence in both genders.^{1,6}

Most mesenteric cysts are benign, with a reported incidence of malignancy of approximately 3%.¹ Mesenteric or retroperitoneal cysts do not cause specific symptoms.^{1,7} The occurrence of a patient's symptoms depends on the size of the lesion; smaller cysts often remain asymptomatic. These lesions are often diagnosed incidentally during abdominal imaging for other medical reasons. Sometimes the patient can present with nonspecific complaints of abdominal pain, distension, discomfort, nausea, vomiting, flatulence, constipation, or diarrhea.⁸ In rare cases, the cyst can rupture or become infected and may warrant immediate surgical intervention.

Most often, the cysts are present in the small bowel mesentery (50–80%), followed by the large bowel mesentery (15–30%), and in the retroperitoneal space (7–20%).⁹ The cysts may develop when the mesenteric leaves fail to fuse, and they can also arise as a consequence of lymph node degeneration or malformation, as well as malposition or obstruction of the lymphatic vessels.¹⁰

The complete excision of the cyst is the preferred treatment of choice. The first description in the literature of a partial mesenteric cyst excision was by Tillaux in 1880 and Slocum.¹¹ Over the years, cyst excision was done by laparotomy, and Mackenzie et al reported the first laparoscopic excision in 1993.¹²

We report an interesting case of a young woman who had been repeatedly evaluated for a palpable abdominal mass that would disappear and then reappear in different locations within her abdomen.

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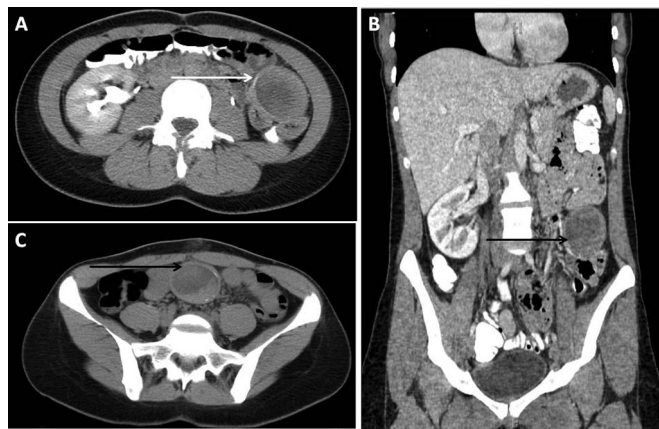


Figure 1. **A** and **B**, Different views of the CT scan of the patient's abdomen, showing a large 6 × 5-cm cystic mass in the left abdomen (arrows). **C**, An axial view of the CT scan showing the cystic mass at the time of CT-guided biopsy in the lower abdomen (arrow).

CASE REPORT

A 29-year-old woman presented with a 2-year history of feeling a large mass in her abdomen. The mass would disappear for several days and would frequently change position and could be felt in different quadrants of the abdomen. Except for vague abdominal discomfort, the patient denied any other symptoms. She had been evaluated by two physicians over time who could find nothing wrong because they were unable to palpate the mass and she was asymptomatic.

Because the surgeon at our institution had a high degree of suspicion of an abdominal mass, a computed tomography (CT) scan of the abdomen was done and revealed a large 6 × 5-cm cystic mass in the left abdomen (**Figure 1, A and B**). At repeat examination, the mass was not palpable and a CT-guided biopsy of the mass was scheduled. The position of the mass at the time of the CT-guided biopsy was found to be in the lower mid-abdomen (**Figure 1C**). Aspiration of the mass revealed thick yellowish material that could not be characterized. Blood sample results, including those for tumor markers CEA, CA 19–9, and CA 125, were within normal limits.

Subsequently, the patient underwent a diagnostic laparoscopy, which revealed a large, smooth white-to-yellow rubbery mass on the mesenteric side of the jejunum (**Figure 2**). Because the size of the mass required a larger incision to remove it, an 8-cm upper abdominal midline incision was made by increasing the supraumbilical port site incision. A small-sized Alexis wound retractor (Applied Medical, Ran-

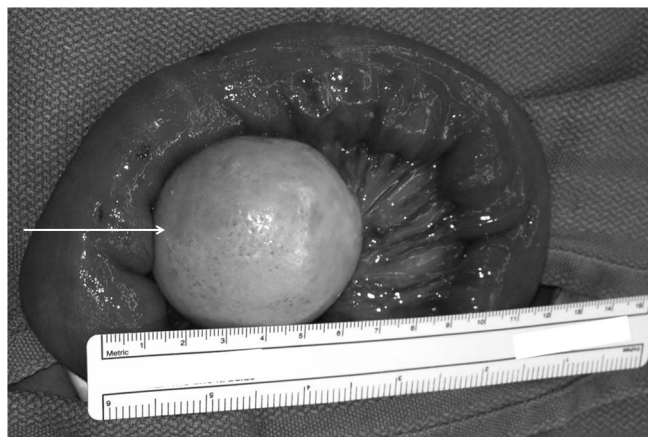


Figure 2. An image of the large smooth mass found on the mesenteric side of the jejunum.

cho Santa Margarita, California) was inserted. The mesenteric mass, along with the small bowel, was brought out through the incision site after grasping the mesentery close to the mass with laparoscopic guidance. An open en bloc resection of the mass along with the jejunal loop and the mesentery was performed, followed by a side-to-side functional end-to-end anastomosis of the jejunum using a GIA stapler through the Alexis port. Postoperatively, the patient recovered well and was discharged home on the third postoperative day. On follow-up, she remains asymptomatic.

On opening the mass, a unilocular cystlike structure was found that was filled with white-yellow pasty material surrounded by a thick fibrous capsule. Histopathologic examination of the excised mass revealed a benign fibrous-walled mesenteric pseudocyst with no epithelial lining. Masson trichrome staining on the sections of the cystic wall showed that it was predominantly fibrous connective tissue and not smooth muscle, thus ruling out an intestinal duplication cyst.

DISCUSSION

Mesenteric cysts are rare intra-abdominal masses generally omitted or briefly reported in textbooks. They have been detected in all age groups, with the highest incidence reported in the 40 to 70 years age-group.¹³ Histopathologically, they are classified as:

1. Cysts of lymphatic origin—lymphatic (hilar cyst) and lymphangiomas

2. Cysts of mesothelial origin—benign or malignant mesothelial cysts
3. Enteric cysts or enteric duplication cysts
4. Cysts of urogenital origin
5. Dermoid cysts
6. Pseudocysts—traumatic or infectious etiology¹⁴

They may be localized throughout the mesentery from the duodenum to the rectum and may extend from the base of the mesentery into the retroperitoneum. They are found primarily in the ileum and the right colon mesentery (>70%).¹⁵

Most cysts are asymptomatic and may be discovered incidentally during diagnostic imaging tests or surgery for other medical reasons. Abdominal symptoms caused by cysts, such as abdominal pain (55–82%), palpable abdominal lumps (44–61%), and abdominal distention (17–61%), may be observed.¹⁶ Rarely, infection, hemorrhage, volvulus, perforation, or bowel obstruction may develop and present as an acute abdomen.¹⁶

Similarly, our patient presented with a palpable mass, but the characteristic feature was that the mass could not be palpable over long periods and would later reappear at a different location. Because the cyst was found to be located in the mesentery, the mobile jejunum resulted in the mass presenting at different locations. When the mass could not be palpated, it had moved down into the pelvis. This confusing presentation led to the delayed diagnosis and a lot of potentially avoidable workups and investigations for the patient.

Patients with suspicion of mesenteric cyst can undergo ultrasonography, computed tomography, or magnetic resonance imaging. Ultrasonography can be useful because it may reveal details suggesting the character of the lesion. The occurrence of septa implies that the entity should be considered as a pseudocyst. Moreover, the existence of a thick-walled cyst merged with the muscle layer of the bowel may suggest enteric duplication. Internal echoes are present in mucous or infectious cysts.¹⁷ Both ultrasonography and CT scan can help determine the size and topography of the cystic lesion, as well as help to distinguish the content as liquid or solid. Unfortunately, both methods can fail to find the location of the lesion's origin. In our case, a CT scan was done because the clinician was unsure of the diagnosis, and although CT did diagnose a cystic structure, it could not determine its origin and character.

Excision or enucleation is the procedure of choice in patients with a mesenteric cyst/pseudocyst and can

sometimes require additional resection of neighboring organs.¹⁷ Drainage or marsupialization is no longer advised because of the high rate of recurrence and infection.¹⁸ Recent studies have shown that laparoscopic surgery may be a good alternative to open surgery and can be the initial step in helping to diagnose the origin of the cyst. In our patient, we had to do an en bloc resection of the mass with the jejunal loop because resecting the mass alone would have resulted in a loss of blood supply to that particular segment of the jejunum.

CONCLUSION

In evaluating a patient who presents with a disappearing mass and/or an abdominal mass that changes location, a mesenteric cyst/pseudocyst should be kept high on the list of differential diagnoses. A correct preoperative diagnosis can help to obviate the patient's anxiety, avoid unnecessary further investigations, and help in formulating a precise surgical intervention.

References:

1. Kurtz RJ, Heimann TM, Holt J, Beck AR. Mesenteric and retroperitoneal cysts. *Ann Surg.* 1986;203:109–112.
2. Vaughn AM, Lees WM, Henry JW. Mesenteric cysts. *Surgery.* 1948;23:13–19.
3. Gallego JC, González JM, Fernández-Virgós A, del Castillo M. Retrorectal mesenteric cyst (non-pancreatic pseudocyst) in adult. *Eur J Radiol.* 1996;23:135–137.
4. Ros PR, Olmsted WW, Moser RP Jr, Dachman AH, Hjermstad BH, Sobin LH. Mesenteric and omental cysts: histologic classification with imaging correlation. *Radiology.* 1987;164:327–332.
5. Pantanowitz L, Botero M. Giant mesenteric cyst: a case report and review of the literature. *Internet J Pathol.* 2001; 1:2.
6. Akinola O, Adejuyigbe O, Dare F. Mesenteric cysts in Nigerians. *Centr Afr J Med.* 1989;35:513–517.
7. Walker AR, Putman TC. Omental, mesenteric and retroperitoneal cysts: a clinical study of 33 new cases. *Ann Surg.* 1973; 178:13–19.
8. Dulger C, Adali E, Avcu S, Kurdoglu Z. Large mesenteric cyst mimicking tuberculous ascites. *Case Report Med.* 2010;2010: 725050.

9. Saviano MS, Fundaro S, Gelmini R, et al. Mesenteric cystic neoforations: report of two cases. *Surgery Today*. 1999;29:174–177.
10. Rauch RF. Retroperitoneal lymphangioma. *Arch Surg*. 1959;78:45–50.
11. Slocum MA. Chylous mesenteric cyst. *Am J Surg*. 1948;41:463–473.
12. Mackenzie DJ, Shapiro SJ, Gordon LA, Ress R. Laparoscopic excision of a mesenteric cyst. *J Laparoendosc Surg*. 1993;3:295–299.
13. Sato M, Ishida H, Konno K, et al. Mesenteric cyst: sonographic findings. *Abdom Imaging*. 2000;25:306–310.
14. Deperrot M, Brundler M. Mesenteric cyst toward less confusion? *Dig Surg*. 2000;17(4):232–238.
15. Chung MA, Brandt ML. Mesenteric cysts in children. *J Pediatr Surg*. 1991;26:1306–1308.
16. Sardi A, Parikh KJ, Singer JA, Minken SL. Mesenteric cysts. *Am Surg*. 1987;53:58–60.
17. Trompetas V, Varsamidakis N. Laparoscopic management of mesenteric cysts. *Surg Endosc*. 2003;17:2036.
18. Vu JH, Thomas EL, Spencer DD. Laparoscopic management of mesenteric cyst. *Am Surg*. 1999;65:264–265.