



## Case Report

# Mesenteric Cyst in Young Adult Patient: A Case Report

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### Abstract

*Mesenteric cysts are rare benign abdominal lesions that possess the risk of malignant transformation in 3% of reported cases. Most cysts are asymptomatic and diagnosed incidentally or during the management of their complications. They may be localized all over the mesentery, from duodenum to rectum, however, they are mostly found in the ileum and right colon mesentery. We present a case report of a 23-year-old female with an abdominal mesenteric cyst. Cyst was excised by laparotomy and resection of some part of small gut also done, without any complications.*

**Keywords:** Mesenteric cyst, Excision surgery, Histopathology.

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### Introduction

Mesenteric cysts are rarely benign growth found in the abdomen, with a 3% risk of becoming malignant<sup>1</sup>. They typically exhibit a wide range of vague symptoms and 40% of cases are discovered accidentally during routine general physical exams or imaging techniques<sup>2</sup>. Mesenteric cysts (MCs) are rare intra-abdominal diseases, with an incidence of 1/100,000 admissions in adults and 1/20,000 in children<sup>3</sup>. Their symptomatology can mimic almost any abdominal disease making diagnosis treble some. They are present in the first decade of life<sup>4</sup>. These are uncommon, benign intra-abdominal tumors that affect individuals of all ages. The incidence of these tumors has been reported to be 1/100,000 in adults and 1/20,000 in children, with a 2:1 female to male ratio<sup>5</sup>. They are mostly found incidentally but patients with these cysts can sometimes present with non-specific complaints of abdominal pain and distension or an abdominal mass<sup>6</sup>.

Although cysts can develop in any part of mesentery, they most commonly start in the mesentery of the small intestine (ileum: 60%) and the mesocolon (ascending colon: 24%)<sup>7</sup>. The diagnosis is extremely difficult since its symptomatology can resemble any abdominal disease. Clinical manifestations are extremely varied and nonspecific, from asymptomatic patients to severely ill patients with peritonitis, perforation and death<sup>8</sup>. Mesenteric cysts are characterized by their location and overall appearance, describing any cyst that forms in the mesentery<sup>9</sup>.

The following types of cysts can occur in the mesentery:

1. **Lymphatic cysts and lymphangiomas:** These are the most common type of mesenteric cysts, accounting for 50-70% of all cases. They are usually benign and arise from the lymphatic system.
2. **Mesothelial cysts:** These are rare and arise from the mesothelial cells lining the peritoneum. They are usually benign but can be malignant in rare cases.
3. **Enteric cysts:** These are rare and arise from the embryonic gut. They can be lined with either enteric or respiratory epithelium.
4. **Teratomas:** These are rare and arise from germ cells. They may include a range of tissues, such as teeth, bones, and hair.
5. **Pseudocysts:** These are rare and can arise from trauma or infection. They are not true cysts as they lack an epithelial lining.

Mesenteric cysts are rare, with a reported incidence of 0.5-1 per 100,000-250,000 admissions<sup>10</sup>. Although the exact cause of mesenteric cysts is unknown, a communication failure of the lymph nodes with the venous or lymphatic systems or the blockage of the lymphatic system because of previous pelvic surgery, trauma, pelvic inflammatory disease, infection, endometriosis, or neoplasia have been suggested as contributing factors<sup>11</sup>. Hemorrhagic, serous, chylous, or infected fluid may be present in mesenteric cysts, which can be single or multiple, unilocular or multilocular.

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They can range in size from a few millimeters to a few cm in diameter, however, at times may be so large that it may mimic tubercular ascites<sup>12</sup>. Patients have very good prognosis, and mesenteric cysts rarely come back once they are removed.

The absence of distinct symptoms and the rarity of this disorder make accurate pre-operative diagnosis challenging. Because of the different complications that can arise from inadequate surgical management, it is crucial to understand these lesions<sup>10</sup>. To diagnose these cysts, patients often require radiological investigations such as ultrasonography (USS), computed tomography (CT) and magnetic resonance imaging (MRI).

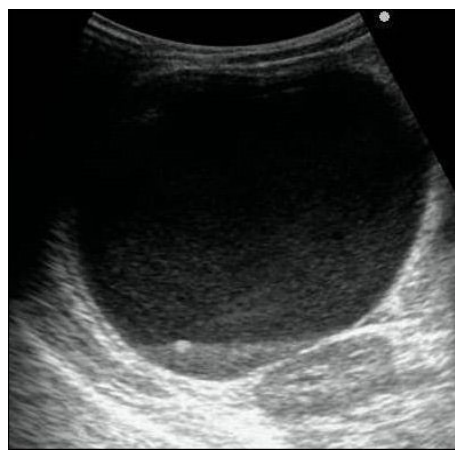
Depending on their symptoms and location, these cysts can either be treated conservatively, but the main treatment option is complete surgical excision. This can be achieved by laparoscopy or laparotomy<sup>13</sup>. The development of laparoscopic surgery has made it possible to remove these cysts without requiring a complete laparotomy<sup>14</sup>. After insufflation with a Veress needle, laparoscopic exploration is performed via four ports, and the cyst is excised using blunt dissection and cautery scissors. Following that, the cyst is extracted using endobags. A laparoscopic excision enables a patient to return to work earlier<sup>15</sup>. Histological examination is often required to identify the origin of the cyst.

### Case Presentation

A young 23-year-old married female consulted our Eastern Medical College and Hospital, for abdominal swelling in the left lower abdomen for last 10 months, increasing gradually in size, and associated with pain. There was no history of anorexia, nausea, vomiting, altered bowel habit, hematemesis, melena or urinary problems. There was also no history of abdominal trauma or fever. She had no history of weight loss, some degree of pallor without a history of dizziness or palpitations. Her menstrual cycles were regular. The patient was married for 7 years, had no history of using any contraceptive and was trying for conception. There was no history of congenital defects, cancer or a comparable mesenteric disorder in the family. She had no notable medical history prior to this, never having undergone surgery or taken medication.

During the clinical examination, she was conscious and oriented, with vital parameters within normal limits. During the examination of the abdomen, a circular, movable cystic mass was felt in the left umbilical and hypogastric regions, which was more prominent when she lay on her left side. The mass was not tender and measured approximately 11 × 10 cm; bowel sounds were present. There were no dilated veins or changes to the skin. A digital rectal examination revealed no external pathologies, no

palpable masses, and no palpable lymph nodes. An ultrasound scan of the pelvis was arranged which found a (116 × 104 × 76) mm<sup>3</sup> cystic lesion probably from the left ovary (Figure-1). Test results for blood showed a normal hemoglobin level of 10.0 g/dl. Tests for liver function revealed direct bilirubin levels of 0.02 mg/dl, total bilirubin of 0.23 mg/dl, alanine aminotransferase (ALT) of 12 IU/L and aspartate aminotransferase (AST) of 15 IU/L, serum creatinine 0.46 and serum TSH 1.7 μIU/ml. A CT scan of whole abdominal showed a large well-defined cystic lesion (116 × 104 × 76 mm<sup>3</sup>) with a peripherally enhancing wall seen in the left lower and middle quadrant abdomen likely benign cyst but could not determine its origin (Figure-2).



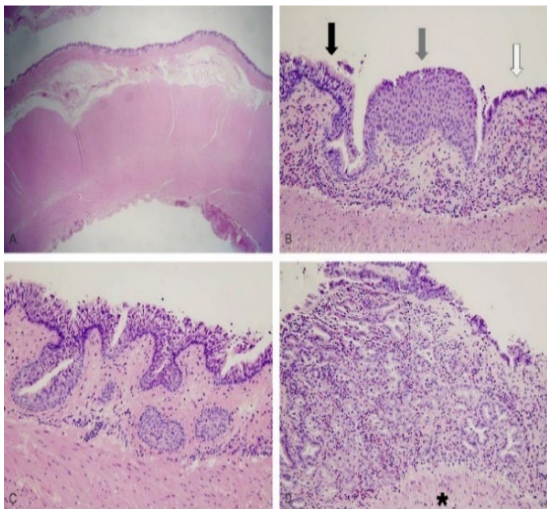
**Figure-1: Ultrasonographic view of the mesenteric cyst**



**Figure-2: Computed tomography view of the mesenteric cyst**

The patient was taken to the operating room for an exploratory laparotomy through a midline incision, which revealed a (11 × 10) cm cyst originating from the ileum. The lower part of the cyst entrapped the left ovary, and partially the right ovary as well. The cyst was filled with brownish fluid. With joint consultation with surgeon, Cautious dissection of the adhesions between the cyst and its surroundings

was performed. Surgical resection of the cyst necessitated partial resection of about 6 cm of ileum with side-to-side anastomosis done. As cyst involve left ovary and fallopian tube, left sided salpingo-oophorectomy was done but preservation of right sided ovary. This was done successfully with no complications. The rest of the abdominal cavity was washed with normal saline and closed after keeping drain tube. As gut repair patient kept nothing per oral and an NG tube kept in situ. On the 4th post-operative day abdominal drain tube and NG Tube removed. The recovery after surgery was without any complications. She remained in good condition throughout her ten-day hospital stay and was discharged home in good medical condition.



**Figure-3: Histopathological report of the mesenteric cyst**

The histological examination showed an intact cyst with separate flattened fatty tissue. The cyst contained brownish fluid, and material was attached. H&E-stained sections of three representative paraffin blocks display a fibrous wall infiltrated by chronic inflammatory cells; lymphoid aggregates in the lumen show macrophages. There was distinct mature, well-vascularized adipose tissue with no malignant cells (Figure-3). This verified the abdominal mesenteric cyst diagnosis.

### Discussion

Most mesenteric cysts are harmless growths, often causing vague and diverse symptoms like abdominal pain, nausea, vomiting, loss of appetite, and altered bowel habits. In some cases, they can lead to serious complications such as intestinal blockage, twisting (volvulus), torsion, bleeding, or rupture<sup>16</sup>. In our case patient have only abdominal pain and swelling in lower abdomen but no complains of alteration of bladder or bowel habit. The small intestine (66%) is more likely than the large intestine (33%) to develop cysts. They usually appear in the right colon of the large bowel, but they are also infrequently seen in the rectum, sigmoid colon, or descending colon

mesentery<sup>17</sup>. In our case, small gut ileum was found to be involved. Mesenteric cysts can be difficult to diagnose because they resemble other conditions like pelvic diseases, aortic aneurysms, pancreatic pseudo cysts, or cystic tumors. A preoperative diagnosis can be achieved using imaging techniques e.g. (USG, CT, MRI)<sup>18</sup>. To locate the cystic mass and the related anatomical structures, a CT scan is mandatory; It also facilitates appropriately organizing the surgical method. But unfortunately, in our case, the involve structure can't be detected by CT scan.

Although the exact cause of mesenteric cysts is unknown, a communication failure between the lymph nodes and the venous or lymphatic systems or the blockage of the lymphatic system because of previous pelvic surgery, trauma, pelvic inflammatory disease, infection, endometriosis, or neoplasia have been suggested as contributing factors<sup>19</sup>. In our case, the patient has no history of surgery, trauma or neoplasm, but has a history of infertility, which may be due to PID.

The first choice of treatment is complete surgical excision, which may require removing a portion of the mesentery along with the mass to prevent recurrence and the potential risk of malignant transformation. Laparotomy or laparoscopy can be used to remove the cyst. The cyst's size, proximity to the main abdominal structures, and the surgeon's experience all influence the type of surgery that is chosen<sup>20</sup>. In this case, laparotomy was the preferred procedure. The patient underwent complete surgical resection of the cyst, necessitating partial ileum resection due to the adherence of the cyst to the gut and its mesentery. Also, it is a must to respect left salping and ovary.

### Conclusion

The paucity of literature on mesenteric cysts makes it difficult to create a gold standard for the management of these patients. However, in other similar cases there has been a thorough stepwise approach. Most patients are managed electively by an investigation in the form of a USG or CT scan to establish the characteristics of the mass and its involvement of surrounding structures. Where possible a laparoscopic approach is favorable. Various laparoscopic techniques have been reported, however, the optimal approach for the best outcome is still unknown due to the rarity of the condition. When laparoscopy is not possible laparotomy is the next option. Complete surgical excision remains the preferred treatment of choice for mesenteric cysts.

### Conflict of Interest

The authors declared that they have no conflicts of interest.

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