HIGH GRADE OBSTRUCTION FROM AN INTRAPERITONEAL ILIAC ARTERY

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Background

- Acute small bowel obstruction (SBO) is a common cause of emergency department visits in the United States, and it accounts for approximately 20% of emergency surgical operations for abdominal pain [1]. Its etiology is divided into an intrinsic luminal obstruction or extrinsic compression of the bowel [2]. Among the causes of SBO, the most common is intraperitoneal adhesions due to previous abdominal surgeries, which comprises about 60-70% of the cases [2]. Other causes include hernias, volvulus, intrinsic tumors, intramural hematomas, gallstones, and others. Rare causes of SBO have also been reported, including endometriosis, paraduodenal hernia, appendicitis, bezoar, broad ligament hernia, and superior mesenteric artery syndrome. The retroperitoneum is part of the abdominal cavity, surrounded anteriorly by the parietal peritoneum and posteriorly by the transversalis fascia. This space contains numerous organs and vessels, including the common iliac arteries and their branches. Surgical procedures in which the retroperitoneal space must be accessed may lead to complications due to exposure of the retroperitoneal structures. Here we present a case of an intraperitonealized external iliac artery causing a high-grade small bowel obstruction.

Case Presentation

- 74-year-old female presented to the ED with abdominal pain, nausea, and vomiting. Presentation, physical examination, and CT imaging confirmed a diagnosis of SBO based on symptomatology and CT scan findings [Figure 1]. Computed tomography of the abdomen and pelvis with intravenous contrast showed a small bowel obstruction with a transition point in the right lower quadrant, significant mesenteric edema, and a small amount of free fluid. She had a significant surgical history of total abdominal hysterectomy with bilateral salphingo-oophorectomy 20 years prior to presentation for an ovarian tumor (non-specified). A period of non-operative management with nasogastric tube decompression was trialed but ultimately failed to resolve the obstruction. The patient was taken to the operating room for exploratory laparotomy and lysis of adhesions. Intraoperatively, a segment of the ileum was volvulized underneath a fibrotic band of tissue. The band was lysed, and pulsatile blood flowed from the transected ends of the artery. The artery was suture ligated for hemostasis [Figures 2 & 3], and vascular surgery was consulted intraoperatively for repair. A primary anastomosis was performed, and the external iliac artery was tacked to the peritoneum using a prolene suture to prevent recurrent SBO. Total ischemia time to the right lower extremity was less than an hour. She was later discharged home on postoperative day seven.

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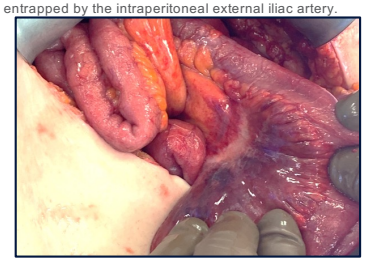
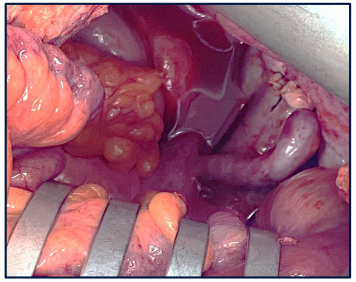
Figures

- Figure 1: Computer tomography demonstrating high grade obstruction with elevation of the external iliac artery.

- Figure 2: Intraoperative photo of the segment of ileum entrapped by the intraperitoneal external iliac artery.



- Figure 3: Intra operative photo of ligated intraperitoneal external iliac artery.



Discussion

- This case report aims to add to the small volume of literature on this rare cause of small bowel obstruction and highlight the importance of a thorough surgical history and discuss possible strategies for prevention at the index lymphadenectomy. When considering the differential diagnosis for SBO, it is common to put intra-abdominal adhesions at the top of the list for a patient with a previous history of abdominal surgeries since this is the leading cause of acute obstructions [2]; however, it is essential to have a broader differential in mind, especially when planning for operative management, as this could help prevent intraoperative injuries such as in this case. In addition, a thorough review of the surgical history, as in this case, the reason for her hysterectomy with bilateral salpingo-oophorectomy for an ovarian tumor, would also have a lymphadenectomy, thus exposing those retroperitoneal structures.
- There are less than ten other case reports documenting this rare cause of small bowel obstruction [3]. Each case documented a patient with a significant surgical history of previous pelvic lymphadenectomy, with a late complication of an acute small bowel obstruction. Therefore, consideration should be made at the index surgery to prevent this type of small bowel obstruction by re-covering the exposed iliac arteries with peritoneum, biologic mesh, or fibrin glue.

References

1. Gore RM, Silvers RI, Thakrar KH, et al. Bowel Obstruction. Radiol Clin North Am. 2015;53(6):1225-1240. doi:10.1016/j.rcl.2015.06.008
2. Catena F, De Simone B, Coccolini F, Di Saverio S, Sartelli M, Ansaloni L. Bowel obstruction: a narrative review for all physicians. World J Emerg Surg. 2019;14:20. Published 2019 Apr 29. doi:10.1186/s13017-019-0240-7
3. Chowdary PB, Wright C. Ileal Obstruction Secondary to Internal Hernia Under the External Iliac Artery: A Case Report and Literature Review. *Cureus*. 2022;14(8):e28107. Published 2022 Aug 17. doi:10.7759/cureus.28107

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