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Mesenteric Lymphangioma: A Silent Reason of Acute Abdomen with Subsequent Ischemic Mid Gut Volvulus

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Abstract Midgut volvulus is a surgical emergency where the small intestine twists around its blood supply (the superior mesenteric artery and vein), obstructing blood flow and potentially leading to tissue damage. It's more common in infants with intestinal malrotation, a condition where the intestines don't rotate correctly during development, but it can also occur in adults. In this article, we are reporting an interesting case report of mid gut volvulus with early ischemic changes due to undiagnosed mesenteric lymphagioma in an adult.

Keywords: *Midgut Volvulus, ishemic bowel, mesenteric lymphangioma, intestinal obstruction*

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1. Introduction

25 years old young male with no known co morbidities, no significant medical or surgical history presnted to Emergency department with history of severe abdominal pain for 7 hours duration associated with multiple time vomiting. Last bowel motion was in the same day morning time.

Pain was severe and graded 9/10 on pain scale. Social history was significant for smoking and alcohol consumption.

On Examination: Patient looks ill and in distress although vital signs were normal

Abdomen was soft with no significant distention. There was mild to moderate tenderness in the epigastric area. otherwise unremarkable

Lab investigations revealed WBCs: 6.2 and Hemoglobin 15 gm/dl. Blood chemistry and electrolytes results were within normal limits

Xray Abdomen done and showed dilated proximal jejunal loops but no significant air fluid levels. (Figure 1a)

CT scan of the abdomen and pelvis with oral and IV contrast revealed:

Evidence of twisted mesentery in the lower mid abdomen, presenting a whirlpool appearance. Abnormal loops of the small intestine are noted to be twisted in this region with distended jujenal loop at the upper mid abdomen & focal loop showing thickened faint homogenous enhanced mural wall with intraluminal feces sign representing early ischemic bowel changes.

There is congested mesenteric vessel distal to the twisted mesentery at the lower abdomen & pelvis with engorged vasa recti surrounded by mesenteric fat edema & panniculitis (intraperitoneal fat infarction) mainly seen at right iliac fossa region & mid lower pelvis.

The rest of small bowel loops collapsed. Normal appearance of large colon. Normal CT appearance of the liver, spleen, pancreas, kidneys, suprarenal glands, aorta, IVC and pelvic organs. No retro-crural, para-aortic or pelvic lymphadenopathy or ascites noted. (Figure 1b and Figure 1c)

Patient was admitted in the ward and resuscitated and optimized as a case of mesenteric volvulus for diagnostic laparoscopic +\- exploratory laparotomy.

Informed consent was secured and 2 Packed RBCs were prepared as standby.

Diagnostic laparoscopy was done and intraoperatively proximal dilatation of jejenal loop was noted until distal jejunum as transition zone with no twisting or volvulus with collapsed ileal loops. However, there was significant thickening of adjacent mesentery compressing the adjacent intestinal loop. (Figure 2 a)

Figure 1a. Abdominal Xray showing dilated proximal bowel in left upper abdomen

Figure 1b. Coronal section showing the lesion in the mesentry (black arrow)

Figure 1c. Transverse section showing the lymphioma in the mesentry (blue arrow)

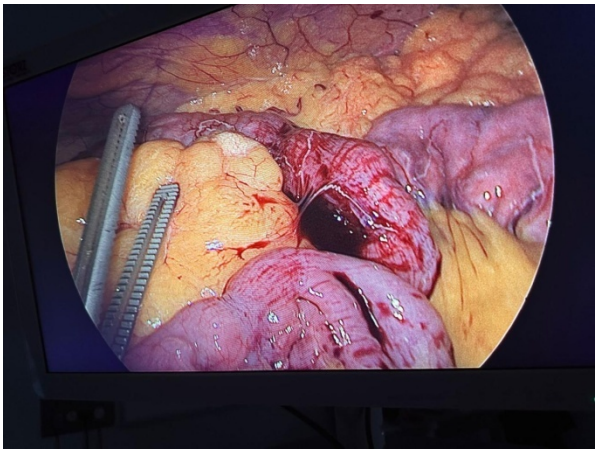

Figure 2. Laparoscopic view of the dilated and collapsed bowel loops with transition zone

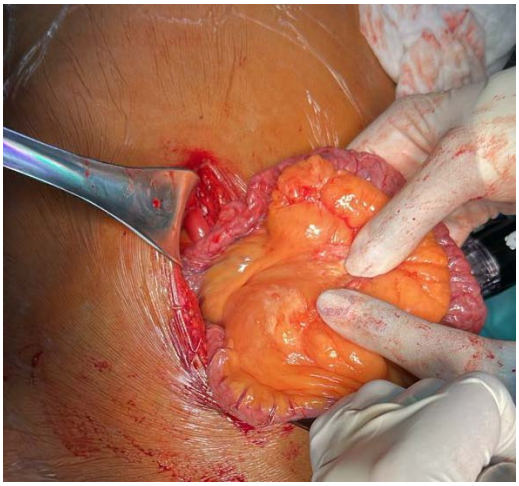

Figure 3a. Open view of the lesion before resection after mini laparotomy incision

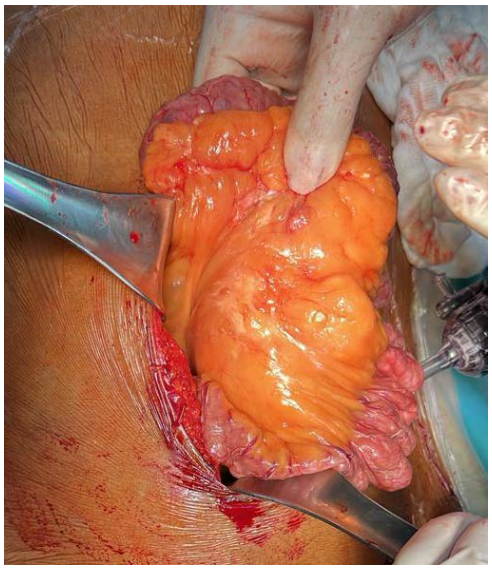

Figure 3b. Open view of the lesion before resection after mini laparotomy incision

Mini laparotomy was performed and resection of the mesenteric lesion (Figure 2b and Figure 2c) along with abutting jejunal loops was done with primary anastomosis with the provisional diagnosis of lymphoma and specimen sent for histopatholgy.

Patient recovered well and started orally next day post operatively. No immediate or late complications noted and discharged home on second post operative day. Histopathology report revealed small bowel segment measuring about 23x2.5 cm with a smooth normal looking outer surface. The attached mesentri is thick measuring about 10x8x3 cm with oozing milky like secretion on cut section but no nodular deposits and/or hemorrhage. Blocks were taken from both resection ends,small bowel wall, from the mesentry.

Section from mesentry reveals Dilated and anastomosing thin walled blood vessels, lined by single layer of flat endothelial cells, Blood vessels are surrounded by lymphoid aggregate and Lymphocytes,

eosinophils and proteinaceous material often fill the vascular spaces. No nuclear enlargement, hyperchromasia, pleomorphism or prominent nuclei should be seen in the lining endothelial cells. Sections from resection ends of bowel segment and from the wall are all unremarkable with no any diagnostic abnormalities.

Finding were suggestive of mesenteric Lymphangioma with no evidence of malignancy. He was followed in the outpatient for 18 months and no late complication or recurrence noted till date.

2. Discussion

Midgut volvulus is surgical catastrophe where the small intestine revolve around its vacular supply, obstructing blood flow and potentially leading to tissue damage. Although more common in infants [1,2] where the intestines don't rotate correctly during development, but it can also occur in adults. [3,4]

While the causes of malrotation are numerous, mesenteric lymphangiomas are one of its rare etiology [4,5] These congenital abnormalities are believed to be caused by a congenital blockage in the primordial lymph node's development. [5,6]. Although it can present at any age, 90% are diagnosed during early year. [6,7] It is seldom to be seen in adults. [7,8] Patients present with nonspecific intestinal findings, such as slowly growing, asymptomatic, vague, soft tissue mass [9] and abdominal distension with or without obstruction and volvulus as in the present case. [10] Under one percent of it originates from the bowel mesentery, retroperitoneum, and large omentum. However, It originated from the mesentery in the present case. [11] Regarding the etiology, and it is thought to be due to the proliferation and dilatation of the blunt-end lymphatic sacs with no proper connections with venous vessels due to developmental defects in lymphatic vessels. [12,13]. In fact. These are thin-walled cystic lesions of macroscopic or microscopic cysts. [14]. Initial diagnostic modality is Abdominal sonography, howver, CT abdomen is the modality of choice for proper diagnosis. Differtial diagnosis includes hematomas, ovarian cyst torsion, intestinal duplication, or a necrotic tumor. [10] Acute abdominal pain can occur in case of intracystic hemorrhage or torsion while large cysts may compress adjacent bowel loops causing partial or complete obstruction [10,15]. Rarely asymptomatic lesions may incidentally detected on radiological examinations. [14] The appropriate treatment is complete resection. Segmental intestinal resection may be necessary if the cysts are adherent to the wall. Inadequate surgical resection almost always results in recurrence. [16] Misdiagnosed cases have been reported in previous studies [1,2,3]. Therefore diagnosis of an intra-abdominal cystic lesion signifies a thorough investigation, to exclude a malignant process.

Our case corresponds to type 2 Losanoff and Kjossev classification, based on the morphotype of lesions, namely Type II sessile, less mobile that may require a nearby organ sacrifice.

3. Conclusion

Mesenteric lymphangioma (ML) [1,2,3,4] is a rare congenital lymphangioma of uncertain etiology that can occurs in any age group. Patients lack specific clinical signs and symptoms, and are often admitted to the healthcare facility due to complications, such as abdominal pain, abdominal distension with or without obstruction and other acute abdominal manifestations. In adults, it may present as incidental finding during adjunct examinations or during emergency laparotomy, leading to due to delayed diagnosis.

It should not be forgotten and excised totally as revicism can occurs in suboptimal excision.

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