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Case Report

Huge lymphangiomatous mesenteric cyst- A case report

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ABSTRACT

Mesenteric cysts are rare intra-abdominal lesions. The lack of characteristic clinical features and radiological signs may present great diagnostic difficulties. Lymphangiomas can originate in any organ with less than 5% occurring in the abdominal cavity. They can occur anywhere in the small bowel or colonic mesentery. Here we present a 58-years-old female with abdominal discomfort, mild pain and abdominal fullness for four months. Radiologically, left adnexal neoplasm was suggested. Laparotomy was performed and left colon segment with huge mesenteric mass was found and resected. Confirmation of diagnosis as lymphangiomatous mesenteric cyst was done on histopathology.

1. Introduction

Mesenteric cysts are rare intra-abdominal lesions with prevalence of 1:100,000 in adults and 1:20,000 in children. Mesenteric cysts are divided into six groups based on histopathological features and their origin: lymphatic origin, mesothelial origin, enteric origin, urogenital origin, dermoid cyst and non-pancreatic pseudocyst.[1] The lack of characteristic clinical features and radiological signs may present great diagnostic difficulties. Lymphangiomas can originate in any organ with less than 5% occurring in the abdominal cavity. They can occur anywhere in the small bowel or colonic mesentery but are most common in the ileal or distal sigmoid region. Here we present a 58-years-old female with abdominal discomfort, mild pain and abdominal fullness for four months. Radiologically it appeared as adnexal lesion but on laparotomy turned out to be huge left colonic mesenteric mass which was resected. It was diagnosed as lymphangiomatous mesenteric cyst on histopathology.

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2. Materials and Methods

A 58-years-old female presented with abdominal discomfort, mild pain and fullness for 4 months. Blood and urine investigations were normal. On computerized tomography (CT) scan left-sided intraperitoneal cystic lesion with thick enhanced wall and fine internal septations measuring about 12x13x17 cm respectively. No internal soft tissue component or calcifications were noted. Radiologically, left adnexal neoplasm was suggested with surrounding fat stranding, prominent left para-aortic lymph nodes. Laparotomy was performed and left colon segment with huge mesenteric mass extending down to intra-peritoneum was found and resected. Gross examination of resected segment of colon measured 42 cm in length. The cystic tumor was mostly in the mesentery and appeared to involve the outer portion of the colon wall. It measured 19x16x8 cms in its maximum dimensions and on sectioning it contained serous clear fluid. The inner surface of the tumor was multiloculated showing both complete and partially incomplete septations within the wall.

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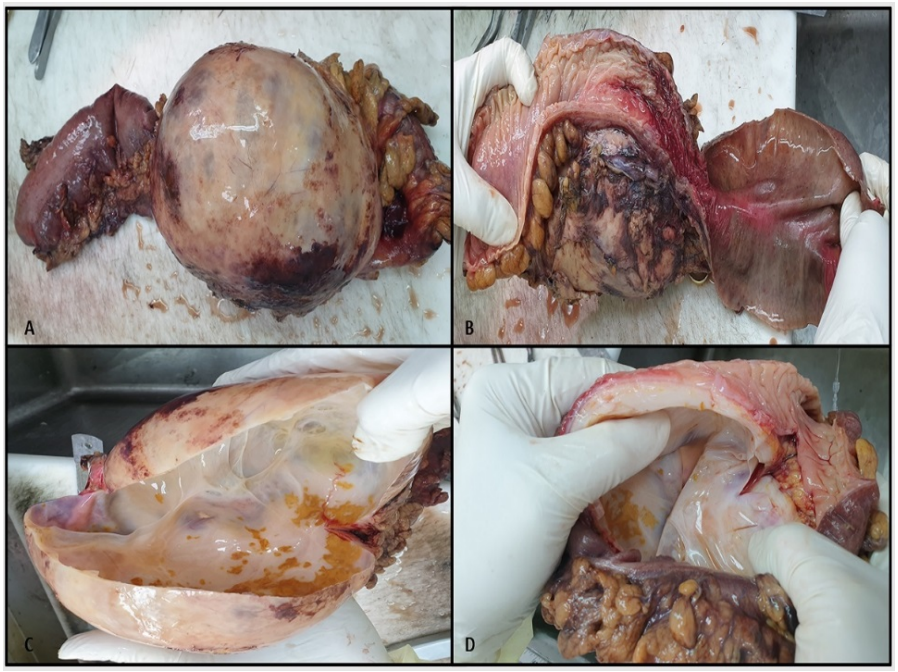

Fig. 1: A: Gross specimen of resected segment of colon with cystic tumor in the mesentery and appears to involve the outer portion of the colonic wall; **B:** Cut surface through the colon showed area of dilation with thinned out wall, small foci of hemorrhage into the mucosa and other areas showed marked edema of the wall; **C:** The cystic tumor measuring 19x16x8cms in its maximum dimensions and on sectioning it contained serous clear fluid. The inner surface of the cystic tumor is multiloculated showing both complete and partially incomplete septations within the wall; **D:** The wall of the cyst has fused with the wall of colon.

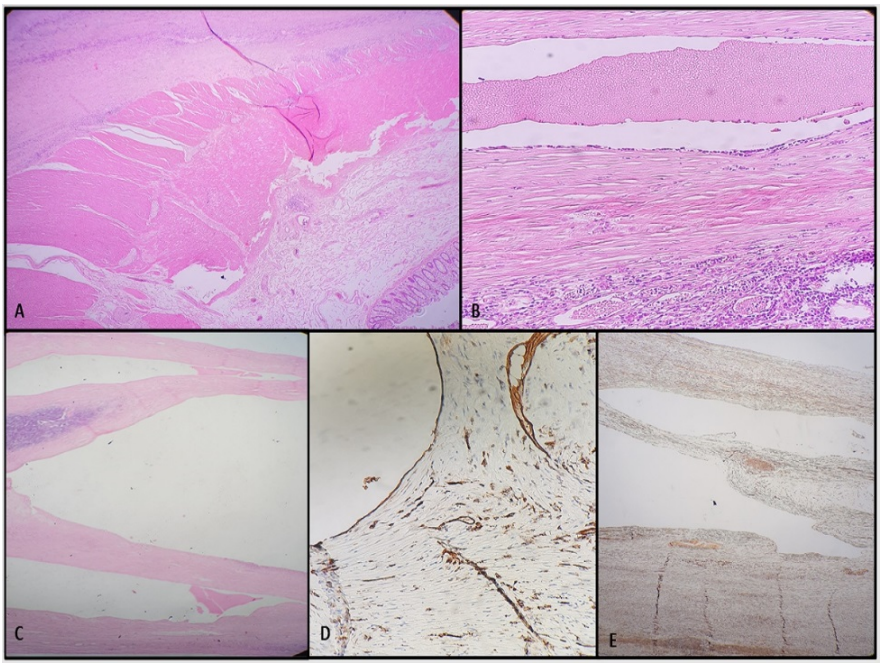

Fig. 2: A: Section of colon showing fusion of cyst wall with muscularis propria; **B:** Tumor consists of multiple dilated spaces lined by a single layer of flattened epithelium and cyst spaces are filled with eosinophilic lymph fluid containing globules and cyst wall contain lymphoid aggregates and occasional plasma cell infiltrates; **C:** The cyst wall varies in thickness and shows partial to complete septations. Immunohistochemical study; **D:** showing CD31 positive in the lining endothelium E. Smooth muscle actin (SMA) positive in scattered smooth muscle fibers in the cystic tumor wall. (Hematoxylin and Eosin: **A** x 5X, **B** x 40X, **C** x 10X, **D:** CD31 x 40X, **E:** SMA x 20X)

Cyst wall showed thick and thin areas and the thick areas showed multiple cystic spaces within it. The inner lining of the cyst was smooth with no papillary structures seen. Cut surface through the colon showed area of dilation with thinned out wall, small foci of hemorrhage into the mucosa and other areas showed marked edema of the wall (Figure 1). Microscopic examination of sections showed a benign multiloculated cystic tumor that predominantly involved the mesentery and was adherent to the outer muscularis propria. Tumor consisted of multiple dilated spaces fined by a single layer of flattened epithelium and cyst spaces were filled with eosinophilic lymph fluid containing globules. A few cholesterol clefts were also seen within the lymph fluid. The cyst wall varied in thickness from very thin to thick and showed partial to complete septations. Within the cyst wall were seen lymphoid aggregates and occasional plasma cell infiltrates. Also seen focally in areas were a few smooth muscle fibers and nerves (Figure 2a-c). Both resected surgical margins were viable and the mesenteric margin sections also show two benign lymph nodes both with features of reactive change. Immunohistochemistry showed CD31 positivity in the lining endothelium, smooth muscle actin (SMA) positivity in scattered smooth muscle fibers in the cystic tumor wall (Figure 1d,e). It was diagnosed as benign mesenteric cyst with tumor immuno-profile and histological findings consistent with lymphatic mesenteric cyst of the left colon.

3. Discussion

Lymphangiomas are benign, cavernous / cystic vascular lesion composed of dilated lymphatic channels.[2] They can originate in any organ (except for the eye and neural tissue), although more than 95% occur in the soft tissues of the head and neck (cystic hygroma) and axilla, with less than 5% occurring in the abdominal cavity. Approximately 5% of the abdominal cavity lymphangiomas are retroperitoneal in location, usually in the lumbar region.[3] Mesenteric and omental cysts represent a form of lymphangioma. Mesenteric cysts are more common and can occur anywhere in the small bowel or colonic mesentery; they are most common in the ileal or distal sigmoid region. Both cysts can be simple or complex and contain a variety of fluid including serum, blood, chyle, or infected fluid. Often these cysts are found incidentally but can cause symptoms due to obstruction, segmental volvulus, or intussusception.[4]

The exact etiology of the mesenteric cysts is unknown. It is probably a developmental anomaly of the lymphatic system, explained by its primary occurrence in children, with over 80% diagnosed in the first few years of life.[5] The most commonly accepted theory as proposed by Gross states that it is the result of benign proliferation of ectopic lymphatics in the mesentery which lack communication with remainder of the lymphatic system.[6]

Beahrs et al proposed a classification in 1950 according to which mesenteric cysts are of four types: developmental, traumatic, infective and neoplastic.[7] However, de Perrot et al. proposed a new classification after 50 years based on histopathological features and origin dividing mesenteric cysts into six groups: lymphatic origin, mesothelial origin, enteric origin, urogenital origin, dermoid cyst and non-pancreatic pseudocyst.[1] It should include the following groups: 1. cysts of lymphatic origin (simple lymphatic cyst and lymphangioma); 2. cysts of mesothelial origin (simple mesothelial cyst, benign cystic mesothelioma, and malignant cystic mesothelioma); 3. cysts of enteric origin (enteric cyst and enteric duplication cyst); 4. cysts of urogenital origin; 5. mature cystic teratoma (dermoid cysts): 6. pseudocysts (infectious and traumatic cysts).

The lack of characteristic clinical features and radiological signs may present great diagnostic difficulties. The cyst may present in one of three ways: non-specific abdominal features; an incidental finding or as acute abdomen.[8] In a study done by Tan et al. the most common presentation was abdominal pain (63%), followed by abdominal mass (44%).[9] Clinically, a fluctuating tumor of the abdomen which lies at first laterally but on enlarging, tends to occupy the middle of the abdomen and pointing towards the umbilicus, is freely movable, especially in a transverse direction, capable of rotation on its own axis, surrounded by a zone resonant on percussion and crossed by a belt of resonance, can be no other than a mesenteric cyst.[10]

Ultrasound is a good initial study, but computerized tomography or magnetic resonance imaging is usually necessary to confirm the diagnosis and assess the extent of the cyst, which can be extensive. It usually appears as a thin-walled, multi-cystic mass with homogenous fluid. Histopathologically, it is characterized by thin-walled, dilated lymphatic vessels of different sizes, lined by flattened endothelium and frequently surrounded by lymphocytic aggregates. The lumina may be empty, or contain proteinaceous fluid, lymphocytes and sometimes erythrocytes.[2] Treatment is complete resection, which sometimes involves resection of the adjacent intestine. These lesions are benign but frequently recur and can be locally infiltrative. Ideal treatment is complete surgical excision, but for large cysts or those at the base of the mesentery, drainage and marsupialization can be performed.[4]

In conclusion, mesenteric cysts are rare intra-abdominal lesions which are difficult to diagnose clinically and radiologically. The most common presentation is abdominal pain and mass. Treatment is complete resection, which sometimes involves resection of the adjacent intestine. Diagnosis is confirmed histologically.

4. Conflicts of interest

There are no conflicts of interest.

5. Source of Funding

None.

References

1. De Perrot M, Bründler M, Tötsch M, Mentha G, Morel P. Mesenteric cysts. Towards less confusion? *Dig Surg*. 2000;17(4):323–8. doi:10.1159/000018872.
2. Fletcher C, Bridge J, Hogendoorn P, Mertens F. World Health Organization Classification of Tumours of Soft Tissue and Bone. Lyon, France: International Agency for Research on Cancer; 2013.
3. Paal E, Thompson LD, Heffess CS. A clinicopathologic and immunohistochemical study of ten pancreatic lymphangiomas and a review of the literature. *Cancer*. 1998;82(11):2150–8. doi:10.1002/(sici)1097-0142(19980601)82:11<2150::aid-cncr9>3.0.co;2-z.
4. Lange P. Abdominal cysts and duplications. In: Mattei P, editor. Fundamentals of Pediatric Surgery. Springer International Publishing AG; 2017. p. 569. doi:10.1007/978-3-319-27443-0_48.
5. Ricketts RR. Mesenteric and omental cysts. In: Grosfeld J, O'Neill J, Fonkalsrud E, Coran A, Caldamone A, editors. Pediatric surgery. vol. II. Mosby Inc; 2006. p. 1399–406.
6. Steyaert H, Guitard J, Moscovici J. Abdominal cystic lymphangioma in children: benign lesions that can have a proliferative course. *J Pediatr Surg*. 1992;31(5):677–80. doi:10.1016/s0022-3468(96)90673-9.
7. Beahrs OM, Judd ES, Dockerty MB. Chylous cysts of the abdomen. *Surg Clin North Am*. 1950;30(4):1081–96. doi:10.1016/s0039-6109(16)33090-0.
8. Liew SC, Glenn DC, Storey DW. Mesenteric cyst. *Aust N Z J Surg*. 1994;64(11):741–4. doi:10.1111/j.1445-2197.1994.tb04530.x.
9. Tan J, Tan K, Chew S. Mesenteric cysts: an institution experience over 14 years and review of literature. *World J Surg*. 2009;33(9):1961–5. doi:10.1007/s00268-009-0133-0.
10. Moynihan BG. I. Mesenteric Cysts. *Ann Surg*. 1897;26(1):1–30.

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