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Mesothelial mesenteric cyst in patient with ascending colon cancer. Case report

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SUMMARY: **Mesothelial mesenteric cyst in patient with ascending colon cancer. Case report.**

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Mesenteric cysts are rare cystic malformations of the mesentery. They are usually located at the iliac mesentery. Clinically most mesenteric cysts are asymptomatic, but sometimes they present with non-specific abdominal symptoms. Diagnosis can be aided using US, CT and MRI but careful interpretation of the images and high index of suspicion of this rare condition is essential for the correct diagnosis, which cannot always be preoperatively established. The therapeutic method of choice is complete surgical excision of the cyst which minimizes the possibility of recurrence. Histopathologically they are classified in six group.

We present a case of a mesothelial mesenteric cyst in patient with colon cancer. The cyst was misdiagnosed as urinary bladder diverticulum in the preoperative CT scan.

RIASSUNTO: **Cisti mesenterica in paziente con carcinoma del colon ascendente. Case report.**

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Le cisti mesenteriche sono rare malformazioni, di solito localizzate nel mesentere ileale. Molte sono asintomatiche, ma talora possono essere causa di sintomatologia addominale aspecifica. Ultrasonografia, TC e risonanza magnetica possono essere d'aiuto diagnostico, ma un'attenta lettura dell'imaging e un alto indice di sospetto sono essenziali per una corretta diagnosi, che non può comunque essere preoperatoria. La terapia di scelta è l'escissione chirurgica completa della cisti che minimizza le possibilità di recidiva. Istologicamente sono classificate in sei gruppi.

Presentiamo il caso di una cisti mesenterica mesoteliale in un paziente affetto da carcinoma del colon. La cisti era stata identificata come un diverticolo vescicale alla TC preoperatoria.

KEY WORDS: Mesenteric cyst - Colon adenocarcinoma.
Cisti mesenterica - Adenocarcinoma del colon.

Introduction

Mesenteric cysts are rare intra-abdominal masses, with incidence varying from 1 of every 100.000 to 250.000 admissions (1), and may occur in patients of any age, with a male to female ratio 1:1 (2, 3). They are defined as cystic malformations of the mesentery and can be located anywhere at the mesentery from the duodenum to the rectum, but more frequently are found at the iliac mesentery (1,2).

Mesenteric cysts usually remain asymptomatic with 40% of the cases being incidental findings, but they may also present with non-specific abdominal symptoms, such as pain, nausea and vomiting and rarely also as acute abdomen (1-3).

We present a case of a mesenteric cyst in patient with colon cancer. The cyst was misdiagnosed as urinary bladder diverticulum in the CT scan.

Case report

A 83 years old woman referred to our department for surgical management of an adenocarcinoma of the right colon flexure.
The patient's medical history included Parkinson disease, osteoporosis, hypertension; she had undergone right modified radical mastectomy for breast cancer 6 years before. One month earlier the patient suffered a mild abdominal pain, constipation and melena for

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about 10 days. Laboratory examination revealed hypochromic parvicellular anemia with a 24.9 % Ht and 7.9 g/dL hemoglobin. The colonoscopy showed a ulcerated-necrotizing invasive mass of the hepatic flexure that occupied the ¾ of the lumen (Fig. 1). The biopsy revealed a poorly differentiated adenocarcinoma of the colon (Fig. 2). The preoperative abdominal CT scan didn't reveal any metastases or lymphadenopathy, but showed a 9x8 cm cystic mass in the right pelvic region that was considered to be a urinary bladder diverticulum as it seemed to have continuity with the wall of the urinary bladder (Fig. 3).

At laparotomy a mesenteric cyst of the terminal ileum was found at about 30 cm from the ileocecal valve (Fig.4). The cyst, which was filled with a clear light yellow fluid, was closely sticking to the bowel and involved the vessels of loops of the ileum. A right hemicolectomy was performed for the colon cancer which included the loop of the ileum whit the cyst.

The patient's postoperative course was uneventful and she was discharged after 12 days.

Cytological examination of the cystic fluid revealed only the presence of a few mesothelial cells and lymphocytes. Histopathological examination revealed a simple benign mesothelial cyst of the mesenterium. The cystic wall was consisted by loose fibrous tissue, with oedema, many small vessels and focal lymphocytic inflitration. The inner surface of the cystic wall was lined by a single layer of flattened or cuboid mesothelial cells that occasionally had a hobnail shape (Fig. 5). Immunohistochemichal staining revealed positivity for WT-1 and negativity for CD34.

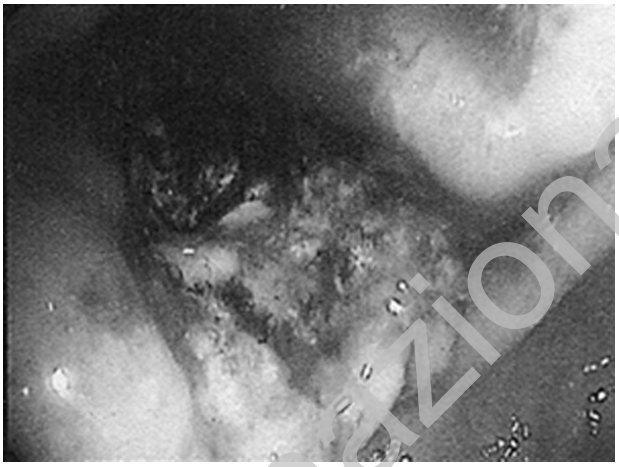

Fig. 1 - Colonoscopic view of the adenocarcinoma.

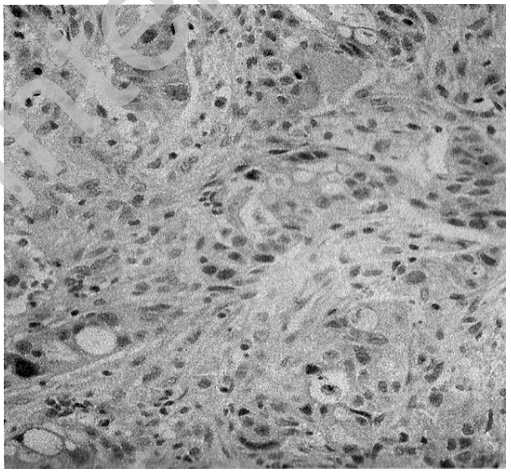

Fig. 2 - Preoperative biopsy. The adenocarcinoma consisted of neoplastic cells arranged in pseudograndular formations, solid groups or isolated. The cells have hyperchromic, various sized nuclei, prominent large nucleoli and increased number of karyokinesis with presence of atypical forms. There were also a few signet ring cells with intracellular mucous production (H&E, x400).

Discussion

Mesenteric cysts are uncommon lesions first described in 1507 by the Italian anatomist Benevenni during an autopsy (4). They are classified, based on histopathological features, as following: 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 cyst); and 6) pseudocysts (infectious and traumatic cysts) (5). In our case the cyst was considered a simple mesothelial cyst.

While the exact etiopathogenesis of mesenteric cysts is still unknown, they are considered to be the result of benign proliferations of ectopic lymphatic tissue, that fail to communicate with the remaining lymphatic system, or of failure of the embryonic lymph channels to join to the venous system, or obstruction or sequestration of the lymphatic vessels, abdominal trauma, neoplasia and local degeneration of lymph nodes (2, 3, 6). Mesothelial cysts can be divided into primary and secondary (7). Primary mesothelial cysts are congenital and considered to be the result of mesothelial lined peritoneal surfaces that failed to coalesce (7, 8). Secondary mesothelial cysts can be a result of inflammation, caused by the response of mesothelium to various stimuli, such as trauma, previous surgery, pelvic inflammatory disease, endometriosis and neoplasia, which lead to the generation of an inflammatory cascade of cytokines like interleukin 8 (5, 7, 9). In our case the presence of lymphocytes in the cystic fluid and lymphocytic infiltration in the cystic wall suggests that either the cyst was secondary of inflammatory origin or that it was a primary congenital cyst that has been exacerbated by inflammation caused by the presence of the colon cancer. Although, there isn't any established association between mesothelial mesenteric cysts and colon cancer, Herrera et al. have described three cases of mesothelial cysts associated with metastases to the ovaries from primary colonic adenocarcinoma (10). In our case however there was no sign of metastatic disease to the ovaries, but the presence of the mesothelial cyst may be related to the colon cancer as described above.

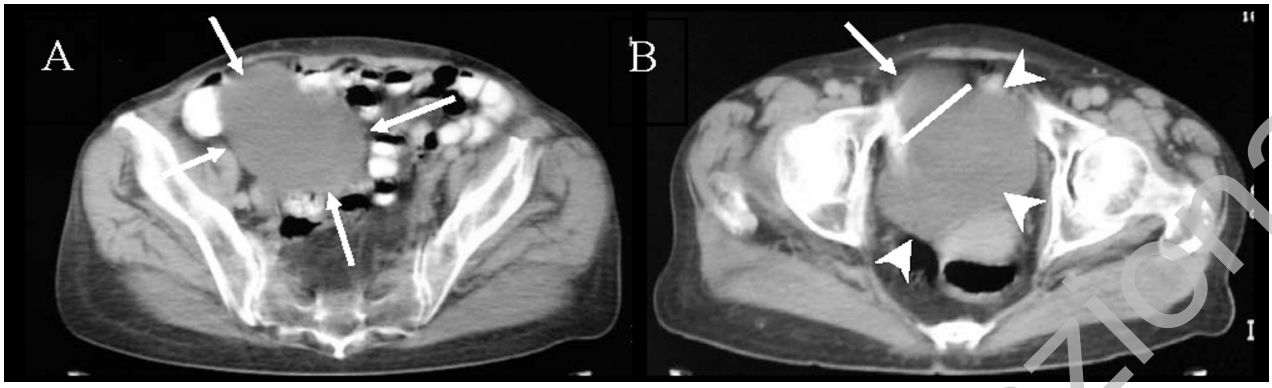

Fig. 3 - A. Preoperative CT scan revealing an intrabdominal cyst of 9x8 cm (arrows). B. The cyst (arrows) seems to have continuity (white line) with the wall of the urinary bladder (arrow heads).

Fig. 4 - Intraoperative findings. The mesenteric cyst is closely sticking to the terminal ileum.

Mesenteric cysts are usually located at the iliac mesentery but could be found anywhere at the mesentery from the duodenum to the rectum (1-3). They usually range in size from a few centimeters to over 10 cm and the symptoms are more likely to occur if the cyst's size is larger than 5 cm in diameter (2). Clinically, most mesenteric cysts are asymptomatic, but sometimes they present with non-specific abdominal symptoms such as abdominal distension, pain, nausea, vomiting, change in bowel habit, diffuse tenderness, and palpable mass (1, 2, 3, 4).

Preoperative diagnosis can be aided using US, CT and MRI but careful interpretation of the images and high index of suspicion of this rare condition is essential for the correct diagnosis, which cannot always be preoperatively established. In our case the intrabdominal cyst was misdiagnosed as urinary bladder diverticulum and the correct diagnosis of mesenteric cyst was made intraoperatively. Imaging techniques are helpful in determining the site of origin, the anatomical relationships with the adjacent organs, the size of the cyst, the density of the cystic fluid and the thickness of the cystic wall (2-4). Mesothelial cysts are usually unilocular, with no

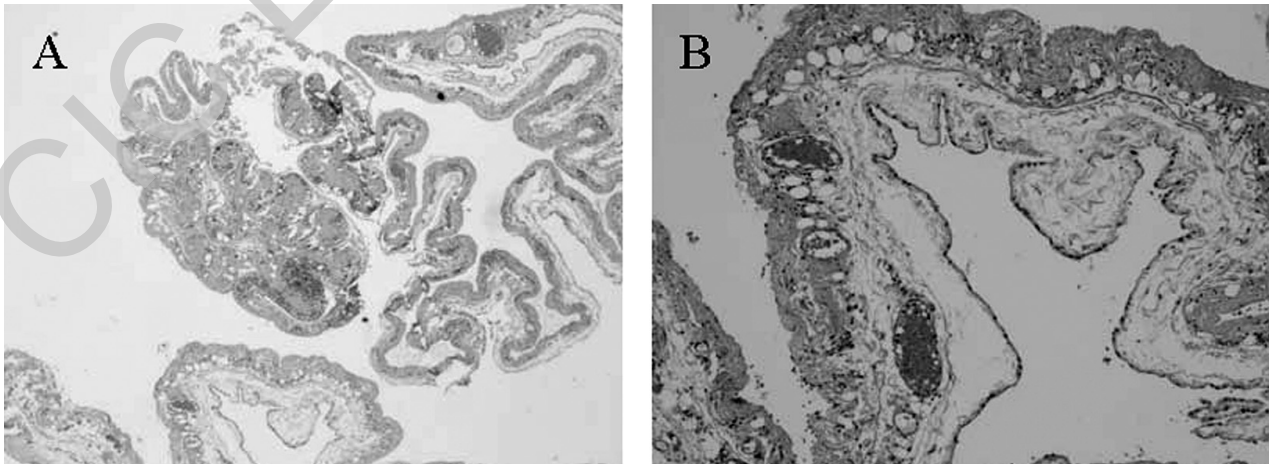

Fig. 5 - Definitive histology. The cystic wall consisted of a loose fibro-vascular stroma the inner surface of which was lined by a single layer of cuboidal or flattened mesothelial cells (H&E, A: x40, B: x100).

internal septation, and in the US appear like an anechoic mass with acoustic enhancement, while the CT and MRI show a fluid-filled mass with no discernible wall (8).

The therapeutic method of choice is complete surgical excision of the cyst, which minimizes the possibility of recurrence and can be performed either with laparotomy or laparoscopy (1, 2, 3, 6). Partial resection, aspiration or marsupialization of the cyst result in high recurrence rate and are considered suboptimal treatment and should only be performed in large cysts involving vital structures (6, 11). In a few cases bowel resection is necessary for the complete removal of the cyst as it involves blood vessels that supply the bowel or is closely associated to the bowel (3). In our case the cyst was excised during laparotomy performed for the right colon cancer.

Conclusion

Mesenteric cysts are rare intra-abdominal masses, which can be located anywhere at the mesentery from the duodenum to the rectum, but are found more frequently at the iliac mesentery.

Most mesenteric cysts are asymptomatic, but sometimes they present with non-specific abdominal symptoms. Preoperative diagnosis can be aided using US, CT and MRI but careful interpretation of the images and high index of suspicion of this rare condition is essential for the correct diagnosis, which cannot always be established. The therapeutic method of choice is complete surgical excision of the cyst, which minimizes the possibility of recurrence and can be performed either with laparotomy or laparoscopy.

References

1. Liew SC, Glenn DC, Storey DW. Mesenteric cyst. Aust N Z J Surg 1994;64:741-4.
2. Aydinli B, Yildirgan MI, Kantarci M, Atamanalp SS, Basoglu M, Ozturk G et al. Giant mesenteric cyst. Dig Dis Sci 2006;51:1380-2.
3. Duldulao MP, Thiruchitrambalam A, Kaul A. Mesenteric cyst: a rare cause of lower abdominal pain. Surg Rounds 2008;31:123-7.
4. Theodoridis TD, Zepiridis L, Athanatos D, Tzevelekis F, Kellartzis D, Bontis JN. Laparoscopic management of mesenteric cyst: a case report. Cases J 2009;2:132.
5. de Perrot M, Bründler M, Tötsch M, Mentha G, Morel P. Mesenteric cysts. Toward less confusion? Dig Surg 2000;17:323-8.
6. Bishop PR, Nowicki MJ, Parker PH. Radiological case of the month. Mesenteric cyst. Arch Pediatr Adolesc Med 2001;155:413-4.
7. Steven MJ, Howatson A, Hanretty K, Sabharwal A. A mesothelial-lined cyst: an unusual presentation. J Pediatr Surg 2009;44:E25-7.
8. Stoupis C, Ros PR, Abbitt PL, Burton SS, Gauger J. Bubbles in the belly: imaging of cystic mesenteric or omental masses. Radiographics 1994;14:729-37.
9. Sahin DA, Akbulut G, Saykol V, San O, Tokyol C, Dilek ON. Laparoscopic enucleation of mesenteric cyst: a case report. Mt Sinai J Med 2006;73:1019-20.
10. Herrera LO, Lopez GE, Ledesma EJ, Englander L, Mittelman A. Mesothelial cysts associated with metastases to ovary from primary colonic carcinoma. Dis Colon Rectum 1982; 25:139-42.
11. Mohanty SK, Bal RK, Maudar KK. Mesenteric cyst--an unusual presentation. J Pediatr Surg 1998;33:792-3.