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Case Report

Aneurysmal dilatation of colon: A rare imaging presentation of colon cancer☆,☆☆,★

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ABSTRACT

Aneurysmal dilatation of colon is a rare imaging feature of colon adenocarcinoma. Two cases with massive aneurysmal dilatation of the colon secondary to moderately differentiated adenocarcinomas are described. The 2 cases presented with asymmetric and progressive abdominal distension with no obstructive symptoms. Contrast-enhanced computed tomography of the abdomen and pelvis demonstrated marked aneurysmal dilatation of the involved segments of the colon and circumferential mural thickening. Colonoscopy found markedly dilated lumen in the involved segment of the colon. Histology of the biopsy specimens taken during colonoscopy revealed moderately differentiated adenocarcinoma with extensive infiltration of colon wall and damage of myenteric nerve plexus.

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Introduction

Aneurysmal dilatation of colon secondary to adenocarcinoma is a very rare imaging finding. At computed tomography (CT), colorectal cancer typically appears as a discrete soft-tissue mass that narrows the colonic lumen. Colorectal cancer can also manifest as focal colonic wall thickening and luminal narrowing with "shoulder" formation [1]. Ulcer formation is also another imaging feature of colon cancer. Colon cancer can also present on imaging with associated complications such as intussusception, fistula formation, and metastases. Aneurysmal dilatation of bowel secondary to cancer is believed to be due to extensive lymphatic and neurovascular invasion of bowel wall as described in colonic lymphoma, small bowel lymphoma, and stromal tumors. We present 2 cases of aneurysmal dilatation of colon secondary to moderately differentiated adenocarcinoma. The tumor infiltrates and damages the smooth muscle layers and myenteric nerve plexus resulting in atony and progressive dilatation of the affected segment of colon. These 2 cases were not associated with obstructive symptoms but asymmetric progressive abdominal enlargement. On radiological imaging the involved segment of colon markedly distends, has thick irregular wall but remains patent. CT scan of the abdomen with oral and intravenous contrast is the imaging modality of choice to evaluate the local, regional and distant involvement of the disease. To our knowledge these are the first cases of aneurysmal dilatation of colon secondary to adenocarcinoma to be documented after extensive literature search.

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Fig. 1 – Case 1. Contrast enhanced CT of abdomen and pelvis coronal view showing colonic wall thickening and marked aneurysmal dilatation sigmoid colon [small white arrows] and aortocaval lymphadenopathy [white long arrow].

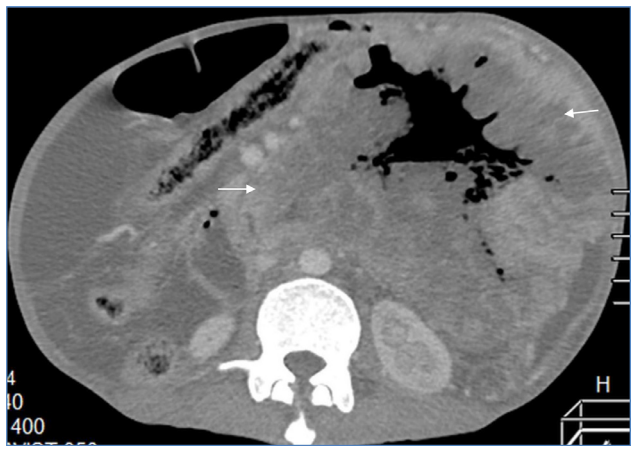

Fig. 2 – Case 2. Contrast enhanced CT of the abdomen and pelvis axial view showing large mass with massive aneurysmal dilatation and wall thickening in splenic flexure and proximal descending colon (white arrows) and large ascites.

Case reports

Case 1

A 60 year old female presented with 8 months history of dull lower abdominal pain. She denied weight loss. She denied history of constipation, diarrhea, and per rectal bleeding. Past surgical history was positive for 2 prior lower uterine segment caesarean sections. There was negative family history for colon cancer. On examination she was in fairly stable condition, had mild conjunctival pallor, but no palpable adenopathy. Her weight was 62 kgs (body mass index of 18.2 kg/m) Abdominal examination revealed large non tender mass in lower abdomen with irregular contour. Complete blood count was relevant for anemia of 10.7 g/dL (12.1-15.1 g/dL). Stool test was positive for occult blood. CEA was 5.4 ng /mL (< 3 ng/mL). Contrast-enhanced CT scan of abdomen and pelvis demonstrated circumferential wall thickening involving mid sigmoid colon. There was also marked dilatation of sigmoid colon revealing aneurysmal dilatation [Fig. 1]. The widened segment measured approximately 12 × 10 cm. The sigmoid tumor was causing anterior and superior displacement of the uterus and urinary bladder without invading them. Both the distal ureters were also compressed resulting in bilateral hydronephrosis and hydroureter left side worse than right. The dilated segment and rest of colon was filled with fecal matter. Minimal pericolic fat stranding was also present. There was 3.4 × 4.8 cm aorto-caval adenopathy at level of inferior mesenteric artery. Intraoperatively, there was large sigmoid mass with adjacent pericolonic fat infiltration. Standard sigmoidectomy and lymph node dissection was performed. Histopathologically, the mass showed moderately differentiated adenocarcinoma and with nodal metastasis involving 2 of the 33 lymph nodes. Postoperative period was uneventful. The patient was subsequently given adjuvant chemotherapy (Adjuvant FOLFOX [5-fluorouracil and oxaliplatin] chemotherapy). She received 8 cycles which she tolerated well. Follow up at 3, 6, and 12 months did not show tumor recurrence or metastases both on imaging and biochemical screening.

Case 2

A 52 year old male presented with progressive left upper quadrant abdominal distension and discomfort of 5 months duration. He confirmed unintentional 32 % weight loss (body mass index of 16.7 kg/m). She denied history of constipation or blood in stools. There was negative family history for colon cancer. Past surgical history was negative. On examination he was sick looking, was pale, dehydrated and wasted. Abdominal examination revealed large mildly tender irregular mass in left upper quadrant. The flanks were also full with positive fluid thrill. Hernia orifices were intact. Complete blood count was relevant for anemia of 9.2 g/dL (13.8-17.2 g/dL). Stool test was positive for occult blood. CEA was 6.7 ng/mL (< 3 ng/mL). CT of the abdomen revealed large (17.2 × 15.0 cm) mass with massive aneurysmal dilatation of the splenic and proximal descending colons [Fig. 2]. Large volume ascites was also present. No adenopathy or liver lesions were present. No omental or peritoneal nodules were apparent on CT images. Colonoscopy found massive colon mass and a very wide lumen in the splenic flexure and proximal descending colon. The lumen walls were filled with fecal matter. Histopathology revealed moderately differentiated adenocarcinoma with extensive infiltration of colon wall and damage of myenteric

nerve plexus. However, the patient declined any form of medical treatment, any further work up or follow-up and he requested to be discharged home.

Discussion

Colorectal carcinoma is the third most commonly diagnosed form of cancer globally, comprising 11% of all cancer diagnoses [2]. While Colorectal carcinoma was previously more incidents in adults above 50 years, in the last 5-6 years the incidence of colorectal cancer in individuals who are younger than 40 years has been on the rise [3]. At CT, colorectal cancer typically appears as a discrete concentric or rarely eccentric soft-tissue mass that narrows the colonic lumen. Colorectal cancer can also manifest as focal colonic wall thickening and luminal narrowing with "shoulder" formation. Because of the narrowing of colon lumen, these patients are diagnosed early with small sized tumors because of altered bowel habits such as constipation, intestinal obstruction, or diarrhea. The other imaging finding is ulceration of the colon adenocarcinoma. Patients with tumor ulceration will also be diagnosed early with small volume tumors because of hematochezia or iron-deficiency anemia symptoms. However, our 2 patients with imaging feature of aneurysmal dilatation of the colon secondary to adenocarcinoma presented with large volume colon tumors. This is a very rare radiologic finding and has not been described in regards to adenocarcinoma of the colon according to our knowledge. The patients presented to the hospital because of progressively increasing abdominal girth. They did not report altered bowel movements or hematochezia neither did they report weight loss. Pathologically, these 2 cases were reported as moderately differentiated adenocarcinomas with extensive neoplastic infiltration of lymphatic and neurovascular structures with disruption of the autonomic nerve plexus. This pathological process is responsible for causing progressive atony and dilatation of sigmoid colon. This resulted in marked distension of the colon but no bowel obstruction. What has been described previously is aneurysmal dilatation of small bowel secondary to lymphoma [4], gastrointestinal stromal tumor [5], melanoma metastasis [6], and bronchogenic metastasis [7]. In the cases involving the small bowel there are 2 pathological processes that result in formation of aneurysm. The first scenario is a large exoenteric small bowel mass which becomes necrotic and forms a cavity that is continuous with bowel lumen. The second pathologic process is an infiltrative neoplasm along small bowel wall damaging autonomic nerve plexus resulting in adynamic and atonic segment. The latter pathologic process applies to our 2 cases since there was extensive invasion of vascular channels and myenteric nerve plexuses resulting in non-obstructed atonic colon. These colon tumors were not necrotic.

On imaging the differential diagnoses of such a large mass containing contents (gas, fluid, and debri) within it include colon lymphoma and abscess. While the suspicion of lymphoma would warrant a biopsy and be confirmed on histopathology, the challenge of management arises when the imaging diagnosis is an abscess. This is because percutaneous drainage of the "abscess" might be requested which leads to inadvertent placement of the drainage catheter through the tumor wall [8]. It is therefore imperative to recognize this rare, atypical and unusual imaging feature of colon adenocarcinoma in order to avoid potential pitfalls in radiological diagnosis thereby reducing associated morbidity and mortality.

Conclusion

Aneurysmal dilatation of the colon due to adenocarcinoma is a rare and unusual radiological finding. Recognition of this feature on imaging enables us, first, to avoid disastrous interventions such as percutaneous drainage for suspected abscess. Secondly, it adds to our knowledge base of the differential diagnoses of aneurysmal bowel pathologies, of which lymphoma and gastrointestinal stromal of small bowel have been described.

Consent

Written consents were obtained for the publication of these case reports and use of the images. They are available if required by the editor.

REFERENCES

[1] Horton KM, Abrams RA, Fishman EK. Spiral CT of colon cancer. Imaging features and role in management. Radiographics 2000;20(2):419–30. doi:10.1148/radiographics.20.2.g00mc14419.
[2] Epidemiology of colorectal cancerRawla P, Sunkara T, Barsouk A, editors.Incidence, mortality, survival, and risk factors. Prz Gastroenterol. 2019;14(2):89–103. doi:10.5114/pg.2018.81072.Epub2019 Jan 6.
[3] Singh KE, Taylor TH, Pan CG, Stamos MJ, Zell JA. Colorectal cancer incidence among young adults in California. J Adolesc Young Adult Oncol 2014;3:176–84. doi:10.1089/jayao.2014.0006.
[4] Ghai S, Pattison j, Ghai S, O'Malley, Khalili K,, Stephens M. Primary gastrointestinal lymphoma. Spectrum of imaging findings with pathologic correlation. Radiographics 2007;27(5):1371–88. doi:10.1148/rg.275065151.
[5] Levy AD, Remotti HE, Thompson WM, Sobin LH, Miettinen M. Gastrointestinal stromal tumors. Radiologic features with pathologic correlation. RadioGraphics 2003;23:283–304.
[6] Kim W, Baek JM, Suh YJ, Jeon HM, Kim JA. Ileal malignant melanoma presenting as a mass with aneurysmal dilatation. J Korean Med Sci. 2004;19(2):297–301. doi:10.3346/jkms.2004.19.2.297.
[7] Maizlin ZV, Brown JA, Buckely MRE, Filipenko D, Barnard SA, Wong X, et al. Case of the season. Aneurysmal dilatation of the small bowel (Not only lymphoma). Semin Roentgenol. 2006;41(4). doi:10.1053/j.ro.2006.07.006.
[8] Elliot (Sean) Rinzler, Grace S. Phillips. Aneurysmal dilatation of bowel mimicking an abscess in pediatric primary gastrointestinal lymphoma. Radiol Case Rep. doi:10.1016/j.radcr.2018.09.014.