Recurrent Appendicitis: A Rare Presentation of Cecal Adenocarcinoma

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Introduction
Acute appendicitis is an atypical initial presentation of carcinoma of the cecum in elderly patients. In a series of 519 patients with cecal carcinoma, only 1.9% presented with acute appendicitis. The risk of developing acute appendicitis in patients 65 years of age or older is approximately one in 100 (approximately 17%-20% of appendicitis patients are over the age of forty), and its pathogenesis remains to be controversial1. In general, appendicitis is frequently due to simple obstruction of appendiceal lumen; however, in elderly patients, appendicitis is most likely related to appendiceal atrophy, fibrosis, strictures and vascular ischemia. Abscess formation or free perforation are very commonly reported (40-70% of these patients) and may also be related, at least in part, to an atrophic appendix with a diminished blood supply2,3.

Although this presentation of cecal carcinoma is rare, one must be suspicious of carcinoma as the cause of appendiceal obstruction prior to an appendectomy. In 2006, Lai et al. reported results of a retrospective study on 1873 patients over the age of forty with appendicitis. The odds ratio of colon cancer incidence had a 38.5-fold increase among patients older than 40 with acute appendicitis4. Here we describe the case of a woman with appendicitis and abscess formation in whom cecal adenocarcinoma was found on subsequent colonoscopy.

Case Presentation
A 67 year-old African American female with past medical history significant for hypertension and anemia, presented to the Emergency Department of St. Barnabas Hospital, Bronx, N.Y. with a three day history of constant, non-radiating periumbilical pain, nausea and vomiting. The pain had worsened over the past day, prompting her to seek urgent medical care. She denied anorexia, diarrhea, constipation, melena, hematochezia, vaginal bleeding or history of STD's. She had a normal menstrual period, her abdomen was soft, with periumbilical pain and no guarding or rebound tenderness. Her respiratory, pelvic, head, eye, ear, nose and throat exam were unremarkable. Her last menstrual period was in 1993. Patient had a normal weight of 81.8 kg (5 feet 9 inches) with 82.7% neutrophils (40-80%), hemoglobin was 11,000 (normal 13,000-16,000), hematocrit was 24.9% (37-47%), white blood cell count was 13,800/mm3 (4,800-11,000) with 82.7% neutrophils (40-74%), her serum albumin was 3.4 g/dL (3.5-5.0 g/dL), MCV was 81.8 fL (80-100 fL), and CA 125 was 8 U/mL (0-20 U/mL). With abdominal drain still intact, the patient was discharged home. A colonoscopy was again rescheduled prior to planned interval appendectomy.

Case Presentation (cont...)
The patient returned to the Emergency Department three weeks later with a two day history of similar abdominal pain. Her complaints included pain, now localized in the right lower quadrant, nausea and diarrhea. Patient denied emesis, constipation, melena, hematochezia, vaginal discharge, or urinary complaints. Her white blood cell count was 13,800/mm3 (4,800-11,000) with 81.7% neutrophils (49-74%), her hemoglobin was 3.4 g/dL (3.5-5.0 g/dL) and MCV was 81.8 fL (82-92). CT scan of abdomen and pelvis with contrast noted an increase in size of the right lower quadrant mass compared with previous studies. The appendix was not visualized and no lymphadenopathy was noted. Although the initial impression was consistent with an abscess, the etiology was not yet determined. The patient was admitted and given intravenous fluids and antibiotics.

CT of abdomen and pelvis showing abscess collection in the right lower quadrant

Follow-up CT reveals interval removal of drain as well as resolution of abscess collection

Subsequently, the patient underwent successful CT guided drainage of the abdominal abscess. Fluid was cultured and grew E. Faeicul. While under observation, the pain and fever resolved, white blood cell count returned to normal limits and her clinical condition improved. Serum carcinoembryonic antigen level was 3.8 mg/mL (0.2-5.0 mg/mL) and CA 125 level was 8 U/mL (0-20 U/mL). With abdominal drain still intact, the patient was discharged home. A colonoscopy was planned prior to interval appendectomy.

Case Presentation (cont...)
Subsequently, the colonoscopy resulted in a large, friable mass in the cecum, centered about the appendiceal orifice, which was highly suspicious of malignancy. Pathologic examination revealed a moderately differentiated invasive adenocarcinoma. Polyps within the transverse colon were identified and classified as tubular adenomas.

After the appropriate pre-operative counseling, the patient underwent an elective right hemicolectomy removing the T3, N0 cecal neoplasm and thirteen pericolic lymph nodes. Pathology reported a Stage II adenocarcinoma extending into the pericolic fat and obstructed the lumen of the appendix, dilatation of the distal third of the appendix, and the perforation of the mid portion of the appendix. A fistulous tract formed within the retrocecal region. The lymph nodes were negative for metastasis.

The patient recovered well after surgery and is currently followed by a Hematologist/Oncologist for cancer surveillance. Adjunct chemotherapy was not recommended and the patient’s last serum carcinoembryonic antigen level was 1.2 ng/mL (0-2.5 ng/mL).

Gross specimen

Tumor at base of appendix (divided longitudinally) causing obstruction of appendiceal lumen

Discussion
Acute appendicitis is rarely the initial presentation of cecal carcinoma in elderly patients. A retrospective review of 363 patients aged 65 or older with cecal carcinoma found that in only 1.8% of these patients presented with acute appendicitis. Although a rare occurrence, approximately 3% of patients over 40 years old presenting with appendicitis have colon carcinoma. Acute appendicitis in the elderly patient should make clinicians suspicious to the possibility of an underlying carcinoma. Obstruction of the appendix may be the first sign of carcinoma within the colon. The presence of appendicitis can lead to a delay in the discovery of colon cancer1,2.

The clinical presentation of acute appendicitis in elderly patients is commonly delayed along with its diagnosis. The diagnosis of appendicitis secondary to carcinoma of the cecum is often made in the operating room despite extensive clinical, laboratory and radiographic evaluation.3

With the gradual aging of the population, carcinoma disguising as appendicitis will be seen more frequently.4,5 Carcinoma should be included in the differential diagnosis in any patient over 40 years of age presenting with acute appendicitis and further diagnostic testing should be done to rule out occult cancer.6 Awareness of the possibility that acute appendicitis can be due to an obstructing carcinoma is important in planning appropriate surgical treatment and improving patient postoperative prognosis.

References