Colon cancer masquerading as recurrent abdominal abscesses

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ABSTRACT

Introduction: One of the most common cancers is colorectal cancer (CRC). With improved techniques for screening, younger patients are being diagnosed with CRC. Rarely, patients have been diagnosed with CRC due to abscess formation. The following case illustrates this. Case Report: A healthy 32-year-old female presents with severe left lower quadrant (LLQ) pain for a few days, initially thought to be gastroenteritis. Physical exam revealed rebound tenderness in LLQ. Patient was then evaluated in the emergency room (ER) without any significant findings. Patient continued to have pain, which led her to have a computed tomography (CT) scan, revealing an abscess. The abscess was adequately treated, but then reappeared in the same location. Having the abscess reappear in the same location led to further investigation by gastrointestinal (GI) via a colonoscopy, showing a stricture. The stricture was biopsied, which showed invasive adenocarcinoma. Conclusion: Recommend when similar symptoms are presented, colon cancer enters the differential diagnosis, checking for infection, and having a colonoscopy performed.

Keywords: Abscess, Bacteroides fragilis, Colorectal cancer

INTRODUCTION

Colorectal cancer (CRC) is the third most commonly diagnosed cancer, and the second leading cause of cancer death in men and women [1]. There is a 4.5% lifetime risk of developing colon cancer for men and women combined. The average age at which CRC is diagnosed is 68 in men and 72 in women. However, younger patients are being diagnosed with CRC [1]. This may be due to enhanced screening techniques, and a higher level of concern for possible cancer. The percentage of cases diagnosed in patients younger than age 50 increased from 6% in 1990 to 11% in 2013 [1]. Younger patients who have colon cancer tend to present with constipation, hematochezia, bloating, rectal bleeding, and diarrhea [1]. The five-year survival rate of CRC is 63.4% [2]. Over 86% of those diagnosed under the age of 50 are symptomatic at diagnosis, which is associated with more advanced stage at diagnosis and poorer outcomes [3]. Atypical presentation of CRC with formation of abscess is an uncommon phenomenon [4]. This case is an example of a younger patient who presented to the clinic with abdominal pain.

CASE REPORT

A 32-year-old female presented to the office with complaints of severe left lower quadrant (LLQ) pain for about four days. She denied any diarrhea, nausea, or vomiting, but she did endorse having difficulty ambulating. She felt warm and had some chills. By the
time the patient arrived at the primary care physician’s office, most of the symptoms had resolved, except for her abdominal pain. She had more frequent bowel movements but denied any hematochezia. She had taken a gas pill for discomfort and had decreased her dietary intake. The pain was stabbing, sharp, with rebound tenderness, 7/10 in intensity in the LLQ. Her past medical history was significant for gastroesophageal reflux disease (GERD), 0.5 pack per day (PPD) cigarette smoker for the past seven years. She denied any surgeries in the past, was a social alcohol drinker, no recreational drugs, and sexually active with one male partner.

Emergency room evaluation

The patient was then sent to the ER, had essentially normal blood report (complete blood count [CBC], complete metabolic panel [CMP], lipase, and urinalysis [UA]), negative pregnancy test, and had a pelvic ultrasound which showed: “ovaries difficult to visualize due to overlying bowel gas, however appear normal size bilaterally and show normal blood flow with no obvious suspicious masses in either side.” The patient was then discharged home with instructions to return to be seen if her symptoms worsened or failed to improve.

First abscess

The patient returned, continuing to have pain. A CT abdomen/pelvis scan with intravenous (IV) contrast showed: “A 5×4 cm peripherally enhancing complex collection anterior to the descending colon. This is consistent with an abscess” (Figure 1). The physician performed a gynecologic (GYN) exam which was essentially normal. She was then admitted for abscess. During her admission, a drain was placed, the patient was placed on broad spectrum antibiotics and then discharged on Flagyl and Augmentin. Abscess culture grew occasional *Staphylococcus aureus*, numerous gamma-hemolytic strep, numerous *Bacteroides fragilis*, frequent *Escherichia coli*, frequent *Klebsiella pneumoniae*, and frequent *Pseudomonas aeruginosa*. She then was started on Cipro to cover *Pseudomonas*. She had normal infectious disease and gynecology appointments.

Second abscess

The patient then returned complaining of recurring abdominal pain. A second CT scan showed the abscess recurred in similar location to the primary (Figure 2). Since the second abscess was in the same location, the surgeon wanted a colonoscopy. The colonoscopy showed: “A severe stenosis measuring of unknown length was found in the descending colon (60 cm from anal verge) and was non-traversed. Biopsies were taken with cold forceps for histology. The exam was otherwise normal throughout the examined colon” (Figures 3–5). Biopsy performed showed highly atypical glands invading lamina propria, invasive adenocarcinoma.

Genetics

Out of various genes tested for, only one variant of uncertain significance was identified in RAD51D. The RAD51D gene is associated with an increased risk for autosomal dominant ovarian cancer and possibly breast cancer. The oncologist stated that this case is not due to Lynch syndrome. The pathology report showed moderately differentiated adenocarcinoma forming a 4.5 cm mass in the descending colon, with tumor invading...
through the bowel wall into pericolic fat. One out of 32 lymph nodes was positive for metastatic adenocarcinoma. All other imaging studies were normal without any signs of cancer.

Outcome/follow-up

Stage IIIb CRC

The patient was diagnosed with stage IIIb CRC. The patient opted to proceed with left hemicolectomy with end-to-end reanastomosis with FOLFOX treatment (Oxaliplatin 85 mg/m² IV, Leucovorin 400 mg/m² IV, Fluorouracil 400 mg/m² IV bolus, Fluorouracil 2400 mg/m² IV) every two weeks for six months with repeat imaging. She continues to have worsening neuropathy. She is still in good spirits and is recommending her family members also get a colonoscopy to check for CRC.

The location of the abscess led to the recommendation to follow with GI on an outpatient basis, to determine the cause of the abscess. The cancer eroded the bowel, which then allowed bacteria to form an abscess in the bowel. The GI doctor recommended the colonoscopy to better visualize the colon. Colonoscopy showed the stricture, which was biopsied, and showed the adenocarcinoma.

DISCUSSION

Colorectal cancer used to be a cancer of the geriatric population. However, as testing has improved and treatment options enhanced, younger patients are being screened. According to the United States Preventive Services Task Force (USPSTF), CRC screening is recommended for patients aged 50–75 years (grade A) [5]. The American College of Gastroenterology has more specific recommendations based on other risk factors. For screening patients who have either a single first degree relative with CRC or advanced adenoma diagnosed at age <60 years old, or two first degree relatives with CRC or advanced adenomas, a colonoscopy should be performed every five years beginning at age 40 or 10 years younger than age at diagnosis of youngest affected relative (grade 2b) [6]. In the case of this patient, she was much younger than the expected population of patients with colon cancer.

Comparing the patients in 1990–2013, the percent of patients diagnosed with CRC younger than the age of 50 increased from 6 to 11% [1]. This may be due to improving screening exams, people utilizing more resources, or more self-advocacy. The symptoms that patients tend to present with are constipation, blood in stool, bloating, rectal bleeding, or diarrhea [1]. These are non-descriptive symptoms that can be easily overlooked or mistaken for other conditions.
findings that can be interpreted in many ways, and cancer may not always be on the differential. In this case, she had recurring abscesses. The first abscess grew many bacteria that were consistent with infections in various locations in the body, including the GI tract. Since the abscesses were present in the same location twice, a colonoscopy was recommended. Without the colonoscopy, this finding may have been missed.

Abscesses are rarely the presenting complaint that leads to the diagnosis of CRC [4]. However, from draining the abscess, the pathogens can help differentiate the source. With this patient, she had six different bacteria; the more concerning one for a GI involvement was \textit{B. fragilis}. \textit{Bacteroides fragilis} is a gram negative, anaerobic bacillus that colonizes all human colons [7]. There was a case described by Lam et al. that showed \textit{B. fragilis} as the causative agent for a rare case of CRC [8]. The case of this 32-year-old female seems to follow the same trend, as the type of bacteria and location of the abscess led to obtaining a colonoscopy. The colonoscopy then revealed the stricture, which led to the cancer diagnosis.

**CONCLUSION**

The willingness of the patient to follow up with her doctors when her symptoms did not improve as well as the appearance of the \textit{B. fragilis} from the blood test was key to the decision for a colonoscopy, resulting in an earlier cancer detection. Adding CRC into the differential diagnosis of recurrent abscesses in the GI tract is an important step to make sure that cancer is not missed. Further research could be completed to link other cases of abdominal abscesses that led to diagnoses of colorectal cancer.

**REFERENCES**

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**Author Contributions**

Alicia J Harbison – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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**Conflict of Interest**

Author declares no conflict of interest.

**Data Availability**

All relevant data are within the paper and its Supporting Information files.

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