

Spontaneous colonic perforation from occult colorectal malignancy: A case report

Daniel Frank, Alyssa Berns

ABSTRACT

Introduction: Spontaneous colonic perforations due to colorectal malignancy are rare and associated with poor outcomes. Urgent presentations of previously undiagnosed colon cancers are increasing in emergency departments, and warrant some familiarity by emergency physicians to improve patient care. **Case Report:** A case of a 65-year-old male presented to our emergency department in septic shock associated with a colorectal perforation secondary to an occult malignancy. The patient was taken into the operating room for an emergent laparotomy, where a mass in the splenic flexure was found to be causing a complete colonic obstruction, causing a gangrenous cecum with perforation. The patient was successfully recovered and discharged home on hospital day-8, and approximately one year later he is still undergoing outpatient management of his cancer. **Conclusion:** We review literature related to the emergency department presentation of occult colorectal malignancies with perforation, and discuss how emergency physicians can facilitate the care of these patients.

Keywords: Cancer, Colorectal malignancy, Perforation, Peritonitis

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INTRODUCTION

Spontaneous colonic perforations due to colorectal malignancy are rare and associated with poor outcomes [1–3]. Patients who experience this are often diagnosed and resuscitated in the emergency department, which has unfortunately become an increasingly common venue for initial cancer diagnoses [4]. We present the case of such a patient, review literature, and discuss how the emergency physician might improve outcomes by expediting the patient's transition to the operating room.

CASE REPORT

A 65-year-old male with a history of diabetes and hypertension presented to the emergency department with complaints of abdominal pain and profuse watery diarrhea that began three days prior. The patient stated that his town recently issued a boil-water advisory for possible *E. coli* contamination in the water supply [5]. While the patient stated he had complied with the advisory, he was worried he may have contracted the bacteria. He was now experiencing more than 10 watery, non-bloody, bowel movements daily, subjective fevers, and diffuse cramping abdominal pain. The patient denied any vomiting, chest pain, or dyspnea. There was no

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recent travel, no recent antibiotic use, and the patient’s spouse had not experienced any of the same symptoms. The patient had never undergone a colonoscopy. His home medications included losartan, amlodipine, lantus, and lyrica. The patient had never undergone any major surgery. He did not smoke and was a social drinker. There were no known drug allergies.

On presentation to the emergency department vital signs were: blood pressure 97/60 mmHg, heart rate 130 bpm, sinus, rectal temperature 102.7°F, respirations 30/min, and 96% saturation on room air. Patient was awake, alert, and answering questions appropriately, but was pale appearing, with rigors and mottled skin. The cardio-pulmonary examination was otherwise unremarkable. The patient’s abdomen was softly distended with hyperactive bowel sounds, and diffusely tender, but there were no peritoneal signs. Stool occult blood was negative.

The patient was given antipyretics, aggressive fluid resuscitation, totaling four liters of normal saline, and broad-spectrum antibiotics. Initial laboratory studies are charted in Table 1.

Upright chest X-ray was notable for poor inspiratory effort, no free air, and otherwise no acute pathology. Computed tomography scan of the abdomen and pelvis with oral and intravenous contrast revealed multiple locules of free air, pneumatosis of the cecum and a colonic mass near the splenic flexure (Figures 1 and 2).

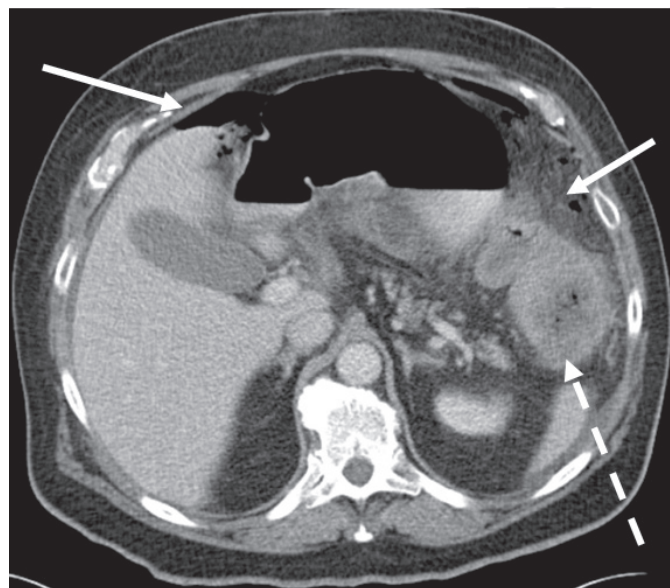


Figure 1: Computed tomography scan demonstrating multiple locules of free air (solid arrows) and an obstructing colonic mass at the splenic flexure (broken arrow).

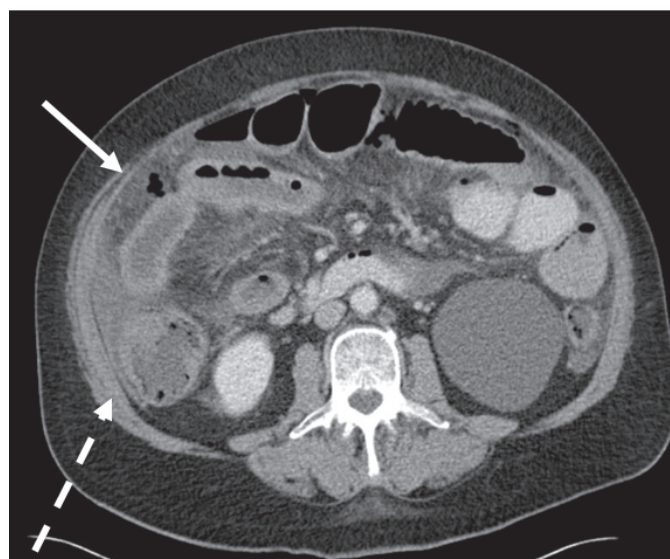


Figure 2: Computed tomography scan demonstrating free air (solid arrow) and cecal pneumatosis with surrounding stranding (broken arrow).

Table 1: Initial laboratory values

Na	139 mEq/L	WBC	3.8x10 ³ μL	ABG	
K	3.6 mEq/L	HGB	14.2 g/dL	pH	7.48
Cl	99 mEq/L	HCT	42.4 %	PCO ₂	33.1 mmHg
HCO ₃	25 mEq/L	Platelet	362x10 ³ μL	PO ₂	60.2 mmHg
Ca	8.2 mg/dL			HCO ₃	24 mEq/L
Bun	24 mg/dL	PT	17.6 seconds	BE	1.6 mmol/L
Cr	0.9 mg/dL	INR	1.4		
Glucose	124 mg/dL	Alk Phos	74 IU/L		
Lactate	2.1 mmol/L	Albumin	3.1 gm/dL		
		Total Bili	0.6 mg/dL		
Troponin	0.01 ng/mL	AST	12 IU/L		
		ALT	29 IU/L		

The patient was taken to the operating room for an emergent laparotomy, where a mass in the splenic flexure was found to be causing a complete colonic obstruction, causing a gangrenous cecum with perforation. The patient underwent an extended right hemicolectomy with ileocolic anastomosis and abdominal wash-out. The patient had an uneventful recovery, never required the ICU, and was discharged home on hospital day-8. Further pathology and imaging results confirmed adenocarcinoma of the colon with liver metastases. Approximately, 12 months from his original presentation, the patient is still receiving chemotherapy and outpatient management of his cancer.

DISCUSSION

In 2014, it is estimated that there were over 135,000 new cases of colorectal cancer (CRC) and over 50,000 deaths attributable to this disease in the United States [6]. Between 9.5 and 24% of these newly diagnosed patients initially present as intra-abdominal emergencies such as obstruction, perforation, or massive hemorrhage [7–9]. While these patients are initially diagnosed and managed in the emergency department, there is a dearth of information in the emergency medicine literature on this topic.

Patients diagnosed with colorectal cancer in the emergent setting are more likely to present with abdominal pain, bloating, nausea, vomiting, diarrhea or constipation than patients diagnosed in the outpatient setting, and have a higher rate of perforation and obstruction [1, 9]. With the advent of screening technology and increasing early detection, spontaneous perforations, such as the one our patient presented with, represent only about 2–3.3% of all new presentations of colon cancer [6, 7]. While perforations most often occur at the site of the tumor, more proximal perforations, such as the one our patient experienced, generally occur in the setting of a competent ileocecal valve, with dilation between the lesion and the valve leading to colonic blow out. The higher mortality is likely a result of the diffuse fecal contamination with accompanying ischemia and pressure necrosis of the bowel [10].

While the treatment for all of these patients is ultimately surgery, the relevance to the emergency physician may be in the timing of the surgery. Those who presented with perforations were more likely to present in septic shock and require vasopressor support [11]. While the emergency physician has a responsibility to begin antibiotics and aggressively resuscitate these patients, the surgeon's job is made increasingly difficult by hemodynamic instability and gross contamination of the field [11]. As such, some may advocate for improvement in hemodynamic variables before surgery is undertaken. However, a group from Japan has recently shown that such a delay in patients with gastrointestinal perforation and resultant septic shock is unnecessary and may even worsen outcomes. In a group of patients that included perforations from colorectal cancers, they showed a survival benefit in patients taken to surgery within 6 hours of admission [12].

CONCLUSION

Our patient's condition was promptly diagnosed and he had timely definitive management to achieve source control of his infection leading to an uneventful recovery. Perforation is an uncommon presentation of colorectal malignancy, and patients present with non-specific complaints that can mimic other intra-abdominal infections. The role of the emergency physician in

management of these patients is to quickly diagnose the disease process, begin resuscitation and facilitate early operative management.

Author Contributions

Daniel Frank – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Alyssa Berns – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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REFERENCES

1. Mandava N, Kumar S, Pizzi WF, Aprile IJ. Perforated colorectal carcinomas. *Am J Surg* 1996 Sep;172(3):236–8.
2. Phang PT, MacFarlane JK, Taylor RH, et al. Effect of emergent presentation on outcome from rectal cancer management. *Am J Surg* 2003 May;185(5):450–4.
3. Chen HS, Sheen-Chen SM. Obstruction and perforation in colorectal adenocarcinoma: an analysis of prognosis and current trends. *Surgery* 2000 Apr;127(4):370–6.
4. Sikka V, Ornato JP. Cancer diagnosis and outcomes in Michigan EDs vs other settings. *Am J Emerg Med* 2012 Feb;30(2):283–92.
5. McGrath M. Update: Saddle Brook boil water advisory lifted. July 25, 2014. [Available at: <http://www.northjersey.com/news/update-saddle-brook-boil-water-advisory-lifted-1.1057376>.]
6. National Cancer Institute. SEER Stat Fact Sheets: Colon and Rectum Cancer. Surveillance, Epidemiology and End Results Program. December 17, 2014. [Available at: <http://seer.cancer.gov/statfacts/html/colorect.html>]
7. Rabeneck L, Paszat LF, Li C. Risk Factors for Obstruction, Perforation, or Emergency Admission at Presentation in Patients with Colorectal Cancer: A Population-Based Study. *American Journal of Gastroenterology* 2006;101:1098–103.

8. Mitchell AD, Inglis KM, Murdoch JM, Porter GA. Emergency room presentation of colorectal cancer: a consecutive cohort study. *Ann Surg Oncol* 2007 Mar;14(3):1099-104.
9. Amri R, Bordeianou LG, Sylla P, Berger DL. Colon cancer surgery following emergency presentation: effects on admission and stage-adjusted outcomes. *Am J Surg* 2015 Feb;209(2):246-53.
10. Anwar MA, D'Souza F, Coulter R, Memon B, Khan IM, Memon MA. Outcome of acutely perforated colorectal cancers: experience of a single district general hospital. *Surg Oncol* 2006 Aug;15(2):91-6.
11. Zielinski MD, Merchea A, Heller SF, You YN. Emergency management of perforated colon cancers: how aggressive should we be? *J Gastrointest Surg* 2011 Dec;15(12):2232-8.
12. Azuhata T, Kinoshita K, Kawano D, et al. Time from admission to initiation of surgery for source control is a critical determinant of survival in patients with gastrointestinal perforation with associated septic shock. *Crit Care* 2014 May 2;18(3):R87.

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