

Acute Diverticulitis Following Colonoscopy

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Abstract

Colonoscopies are one of the most common diagnostic procedures carried out worldwide and whilst generally safe, like all procedures, carry a risk of complications. Whilst perforation and haemorrhage are well known adverse events, there are currently few studies exploring the prevalence and pathophysiology of acute diverticulitis following colonoscopy. A case of a patient who presented with per rectal bleeding and abdominal pain approximately 2 weeks following a routine colonoscopy is thus discussed.

Keywords: Colonoscopy Complications; Diverticulitis; Bowel Pathology; Iatrogenic Diverticulitis

Abbreviations

PR: Per Rectum; WCC: White Cell Count; CRP: C-Reactive Protein; CT: Computed Tomography

Introduction

Colonoscopy is one of the most routine procedures carried out amongst General Surgeons, and long considered to be one of the safest. Studies have shown that adverse outcomes occur in roughly 1.98 per 1000 procedures [1] and that the mortality rate related to colonoscopy is 0.007 percent [2]. However, literature reveals that the incidence of acute diverticulitis after colonoscopy is 0.04 - 0.08% [3]. Herein is presented a case of a hepatic flexure diverticulitis roughly two weeks post colonoscopy.

Case Report

A 50 year old gentleman was referred for colonoscopy following intermittent frank PR bleeding over the preceding 3-4 months. The patient did not complain of any abdominal or anal discomfort. On per rectal examination, there was noted to be frank blood with no apparent haemorrhoids. The colonoscope was easily passed to the terminal ileum, with a double pass performed in the caecum, hepatic and splenic flexures and rectum. The operator made comment of mild to moderate diverticulosis in the left colon. Nine polyps (two in the caecum, four in the ascending, two in the transverse and one in the sigmoid) were cold snared, with histopathology revealing seven low grade tubular adenomas, and two serrated polyps. The patient was advised to undergo a repeat colonoscopy in one year's time.

The patient's past medical history included morbid obesity (165 kg), and a long standing umbilical hernia for which he is awaiting surgical correction. He has previously been referred to an endocrinologist for weight loss and is awaiting review.

The patient reported an uncomplicated period following the colonoscopy; however 16 days following the procedure began to experience intermittent frank PR bleeding. He reported having the urge to defecate and had one episode where he passed approximately 100 ml

of fresh blood and no stool. He reported generalised abdominal tenderness, and two further episodes of fresh PR bleeding mixed in with stool over the next three hours. He reported no presyncopal symptoms. He presented to the Emergency Department following his third episode of bleeding, and upon examination, was found to be afebrile, with a heart rate of 86 beats per minute, blood pressure of 165/85, oxygen saturation of 95% on room air and a respiratory rate of 14. His abdomen displayed significant central adiposity however was soft, with mild to moderate right upper quadrant tenderness with guarding. A rectal examination revealed no blood, masses or faecal material.

Biochemistry results revealed a Hb of 122 g/L (reference range 135 - 180), WCC of 10.87 ($4.00 - 11.00 \times 10^9/L$), platelets of 215 (ref 150 - $400 \times 10^9/L$) and a CRP of 140 (less than 5.0 mg/L).

A chest x-ray was normal, and he was subsequently sent for a triphasic CT scan of his abdomen and pelvis, which revealed acute diverticulitis of the hepatic flexure (Figure 1 and 2). Along the hepatic flexure, there were numerous diverticulae associated with pericolic fat-stranding. No drainable collection, pneumoperitoneum or lymphadenopathy was seen. There were no features to suggest an active bleed at the time of the study.

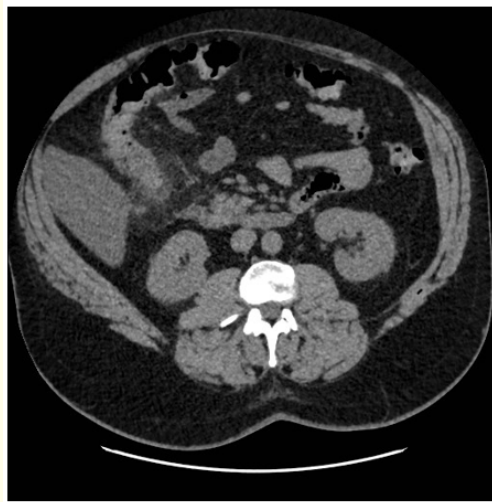


Figure 1: CT abdo (axial) showing hepatic flexure diverticulitis.

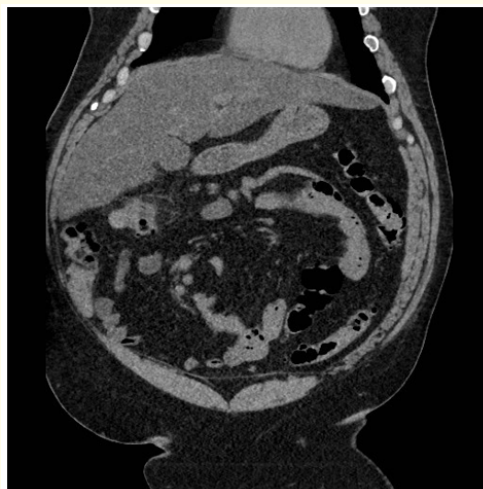


Figure 2: CT abdo (coronal) showing hepatic flexure diverticulitis.

The patient was admitted to the surgical ward and commenced on intravenous antibiotics (1g daily of ceftriaxone, and 500 mg twice daily metronidazole). He was initially placed on a diet of nourishing fluids. Repeat blood tests the next day revealed a Hb of 116, WCC of 7.06 and a CRP of 130. On examination, his abdomen was soft and non-tender. His diet was upgraded to light diet on day 1 of admission, and he was subsequently discharged with a course of oral antibiotics (Amoxycillin 875 mg + Clavulanic acid 125 mg twice daily for 5 days). There were no further episodes of PR bleeding whilst on the ward. A repeat colonoscopy was arranged for him in six months' time.

Discussion

Colonoscopy has long been regarded as one of the safest and most common general surgical procedures to date, with even the most serious side effects, haemorrhage and perforation, being less than 10 per 1000 procedures [4]. A recent study by Gorgun, *et al.* [5] of over 200,000 colonoscopies found that 68 patients developed post-colonoscopy diverticulitis (2.9 per 10,000 colonoscopies). The mean time to develop diverticulitis was 12 +/- 8 days, with 30 patients requiring hospitalisation, and 34 having had a previous episode of acute diverticulitis. As seen, the patient discussed was well within the mean time for the onset of the condition, however had never previously had diverticulitis.

Given that acute diverticulitis has shown to be relatively rare following colonoscopy, there appears to be little research to date as the exact causality associated with this phenomenon. Guidelines published by the American Society for Gastrointestinal Endoscopy in 2011 list diverticulitis following the procedure as a miscellaneous complication [2]. Current hypotheses include micro-perforation from the bowel prep, and/or pressure on pre-existing diverticulae from the instrument or air infused during the procedure [4,6]. With the number of colonoscopies per year exponentially growing in Australia alone - more than 800,000 were performed in 2016-17 (one per every 32 Australians), with a 51% increase from 2004-05 to 2014-15, the incidence of acute diverticulitis following the procedure, whilst although small, will also continue to rise [6]. This will inevitably lead to more inpatient stays and impact the burden on the health care system worldwide and raises the issue of the need for prophylactic antibiotics to prevent such a condition occurring. With microtrauma considered to be the most likely cause for colonoscopy induced diverticulitis, it raises the issue of if treating with a short course of antibiotics post colonoscopy could reduce the incidence of post procedure complications. In addition, it suggests that it may reduce unnecessary hospital admissions and ultimately longer antibiotic requirements, particularly in the hands of inexperienced operators.

Conclusion

Whilst colonoscopy is considered a safe and routine procedure, like any procedure, there is always a risk of complications. Whilst currently labelled as a miscellaneous complication, diverticulitis post colonoscopy will continue to rise given the growing rates of colonoscopy worldwide. Further research into the causative link between procedure and complication is warranted, in order to reduce the potential burden on the health care system, and to identify any protective factors or mechanisms that may be applicable in reducing the number of diverticulitis cases following colonoscopy.

Bibliography

1. Chukmaitov A., *et al.* "Association of polypectomy techniques, endoscopist volume, and facility type with colonoscopy complications". *Gastrointestinal Endoscopy* 77.3 (2013): 436-446.
2. Fisher D., *et al.* "Complication of colonoscopy". *Gastrointestinal Endoscopy* 74.4 (2011): 745-752.
3. Park S., *et al.* "Colonoscopy-induced acute diverticulitis". *Journal of the Korean Geriatrics Society* 20 (2016): 108-111.
4. Warren J., *et al.* "Adverse events after outpatient colonoscopy in the Medicare population". *Annals of Internal Medicine* 150.12 (2009): 849-857.

5. Gorgun E., *et al.* "Colonoscopy-induced acute diverticulitis: myth or reality?" *Surgical Endoscopy* 32.7 (2018): 3290-3294.
6. Duggan A., *et al.* "All colonoscopies are not created equal: why Australia now has a critical care standard for colonoscopy". *Medical Journal of Australia* 209.10 (2018): 427-430.

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