



Case report

Peri-colonic haematoma following routine colonoscopy

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H I G H L I G H T S

- Peri-colonic haematoma is a potentially life threatening complication.
- A high index of suspicion is required for diagnosis.
- Peri-colonic haematoma can be managed non operatively.

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A B S T R A C T

Introduction: We present a case of an extra-luminal haematoma following routine colonoscopy. This case highlights an uncommon but potentially life threatening complication in which there is little published literature to date.

Presentation of case: A 73 year old male presented with abdominal pain and a reduction in haemoglobin following an uneventful colonoscopy. The imaging had been required as part of colorectal cancer follow up. Initial differential diagnosis included colonic perforation and the patient was admitted for further investigations.

Same day CT scan imaging revealed an extra-luminal haematoma in the mid descending colon. The patient was managed non-operatively and was discharged with antibiotics following a period of observation.

Discussion: Colonoscopy is a highly effective imaging modality for direct visualisation of the lower gastrointestinal tract and for simultaneous diagnostic or therapeutic interventions. In recent years the use of colonoscopy has increased greatly, this is largely due to an increasingly aging population, increased availability of the resource and as a consequence of the implementation of the Bowel Cancer Screening Programme. Extra-colonic bleeding following colonoscopy is rare. Causes that have been identified in the literature include splenic injury, mesenteric tears, hepatic injury and retroperitoneal haemorrhage. To the authors' knowledge, there is very little published literature specifically on isolated peri-colonic haematomas following colonoscopy.

Conclusion: This case highlights an unusual but potentially life threatening complication following colonoscopy. Endoscopists and clinicians should be aware of the diagnosis to allow for early recognition and appropriate management.

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1. Introduction

Colonoscopy is the gold standard for colorectal cancer screening, diagnosing colorectal disease and treating mucosal lesions. Demand for the procedure has increased significantly over recent

years [1,2]. It is safe, with an estimated frequency of iatrogenic perforation of 0.019%–3% respectively [2–5]. The rate of bleeding following colonoscopy is between 0.001 and 0.3% [4].

We present a case of an extra-luminal haematoma following routine colonoscopy. This work has been reported in line with the CARE criteria [6]. This case highlights an uncommon but potentially life threatening complication in which there is little published literature to date. Clinicians should be aware of the diagnosis to allow for early recognition and appropriate management.

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2. Presentation of case

A 73 year old male with a history of metachronous sigmoid and caecal cancer underwent a follow-up colonoscopy. He had a right hemicolectomy nine years previously followed by anterior resection. His past medical history included diabetes mellitus and hypertension. His medication included aspirin which had been continued.

Colonoscopy without sedation identified a few localised diverticula in the sigmoid colon, no biopsies were taken. Following the procedure the patients' blood pressure was stable and he did not complain of any discomfort. Shortly after discharge he began to experience abdominal pain and returned to the department. Examination revealed a blood pressure of 119/77 mmHg tachycardia at 104 beats per minute with tenderness in the left side of the abdomen.

Preliminary investigation revealed a haemoglobin of 11.9 g/dl (13.6 g/dl prior to procedure) white cell count of $10.0 \times 10^9/l$ and a C reactive protein less than 3 mg/l. Erect chest x ray did not demonstrate free gas. Intravenous fluid was commenced.

An urgent CT scan revealed a focal haematoma surrounding the mid descending colon with no evidence of a perforation (Fig. 1). Following a period of fluid resuscitation, regular full blood count assessments and observation, the patient was discharged after three days as he was clinically well, his haemoglobin remained stable without transfusion and the pain had settled. Antibiotics were not felt to be indicated.

Four days after discharge the patient was re-admitted with further left iliac fossa pain. Repeat CT scan with contrast demonstrated a 7 cm segment of luminal narrowing in the proximal descending colon with adjacent resolving peri-colonic haematoma and no evidence of contrast leak (Fig. 2). He was managed with a further period of observation and again no blood transfusions were required. He was discharged following a further three days of observation. The patient had no further symptoms at follow up 2 weeks later and his abdomen was soft and non-tender.

3. Discussion

This case outlines an effective approach to managing patients

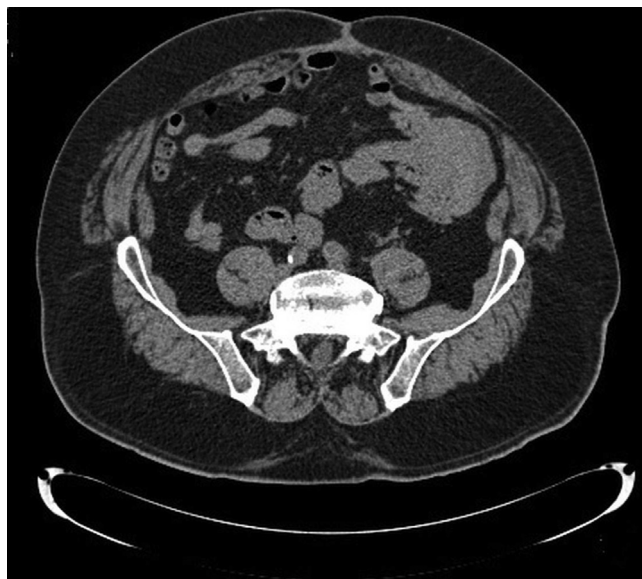


Fig. 1. It shows a CT scan with a focal haematoma surrounding the mid descending colon.

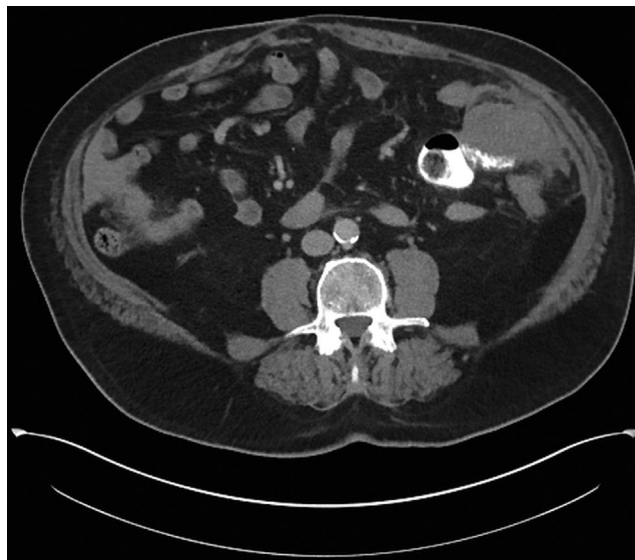


Fig. 2. It is a repeat CT scan with contrast demonstrated a 7 cm segment of luminal narrowing in the proximal descending colon with adjacent resolving peri-colonic haematoma.

with abdominal pain following colonoscopy. Serious complications following colonoscopy are very uncommon and the most effective way to diagnose this is with a CT scan. Not only does it exclude a perforation more accurately, it also diagnoses the alternative, extra-colonic bleed which can then be managed appropriately. Obviously had only an erect X-ray been done and showed no free-gas, a false reassurance may have been possible and a potential life threatening diagnosis missed. The main limitation in our case is the availability of CT scanning.

Colonoscopy is a highly effective imaging modality for direct visualisation of the lower gastrointestinal tract and for simultaneous diagnostic or therapeutic interventions. In recent years the use of colonoscopy has increased greatly, due to an increasingly aging population, increased availability of the resource and following implementation of the Bowel Cancer Screening Programme [1].

The procedure is safe and well tolerated however there is a small but appreciable risk of complications. Bleeding and perforation have an overall reported frequency 0.001–0.3% for bleeding and 0.019%–3% for perforation respectively [3,4]. The risk of mortality is reported at 0%–0.7%, of which uncontrolled haemorrhage can be the cause [3,7,8]. Bleeding is most often described following polypectomy or biopsy rather than after purely diagnostic procedures [5,9,10]. Blood loss most often occurs into the gastrointestinal tract rather than being concealed outside the colonic wall. Warfarin is an independent risk factor for colonoscopy complications [9,11]. There has been no confirmatory evidence that anti-platelet therapy is associated with increased risk of complications [12,13].

Extra-colonic bleeding following colonoscopy is rare. Causes that have been identified in the literature include splenic injury, mesenteric tears, hepatic injury and retroperitoneal haemorrhage [5,8,14–21]. To the authors' knowledge, there is very little published literature specifically on isolated peri-colonic haematomas following colonoscopy.

Splenic injury is the most commonly reported causes of extra colonic bleeding post colonoscopy with over 100 cases reported and an overall estimated incidence of 0.00005–0.017% [2,5,7–10,16–19]. Abdominal pain with haemodynamic instability is the commonest method of presentation and usually occurs within 48 h. CT scan provides the most sensitive and specific

method of diagnosis [16]. Splenic injury can be managed conservatively if vital signs are stable, however the majority of patients require laparotomy and splenectomy (56–70%) or embolisation [2,16,18,20]. The mortality rate following splenic trauma from colonoscopy has been reported as 4.5–5% [2].

Mesenteric tears have been described in isolation and with concomitant splenic injury following colonoscopy [15,21]. Of the five cases identified in the literature, the complication occurred as a result of diagnostic and therapeutic procedures [15]. Symptoms were most often clinically apparent within 24 h [15,21]. Management was successful with non-operative treatment, however the majority required operative intervention [21].

Retroperitoneal haemorrhage has occurred in two isolated reports following colonoscopy [14,15]. In the case reported by Yoshimura et al. the complication arose following colonoscopy directly [14]. In the case reported by Smith et al. the retroperitoneal haemorrhage became apparent following the introduction of heparin to treat a post-operative pulmonary embolus and resolved without surgical intervention [8].

Hepatic injury is extremely rare following colonoscopy. Ellis et al. reported a case in a patient with Crohn's disease [21]. Within a number of hours following an uneventful colonoscopy the patient became haemodynamically unstable. Laparotomy was required and revealed a macerated spleen, a laceration of the left lobe of the liver and a haematoma of the transverse mesocolon [21].

All patients with abdominal pain following colonoscopy should be treated with a high index of suspicion. Baseline investigations including observations, a biochemical screen and full blood count should be undertaken. A normal erect chest x ray image should not prevent further imaging with CT if there is any clinical suspicion of an intra-abdominal complication. CT scanning, should be the investigation of choice in these circumstances [16,17]. In cases of extra colonic bleeding CT scanning will facilitate the diagnosis, identify active haemorrhage and assist in determining whether conservative management is appropriate.

Once a diagnosis of extra-colonic haematoma has been established, conservative management with intravenous fluids and blood transfusions may be sufficient [16,17]. In such patients there should be a period of close observation and follow up to ensure the condition is resolving. Persistent haemodynamic instability in the setting of an extra-colonic haematoma would necessitate radiological intervention with possible embolisation of the bleeding source or surgical intervention, most likely requiring a laparotomy [7,17].

We propose that the mechanism of injury in our patient was from a tear of adhesional tissue resulting in bleeding from a pericolic vessel. The patient discussed in this case had multiple previous abdominal operations and was likely to have significant intra-abdominal adhesions resulting in an increased risk. This mechanism of injury has been proposed as the most likely explanation for extra colonic bleeding following colonoscopy [15,16,19,21]. Splenic trauma is thought to be the result of partial capsular avulsion and any factor resulting in increased splenic adhesions is considered to be a risk factor for splenic injury [16,19,21]. Lacerations or a tear to adhesional tissue has also been the postulated mechanism for mesenteric bleeding [15].

4. Conclusion

Peri-colonic haematoma is a rare but potentially life threatening complication of colonoscopy. Awareness of the condition and a high index of suspicion is required for patients with abdominal pain and signs of haemodynamic instability following colonoscopy. This is to ensure the complication is not missed. CT scan imaging should be considered as the first line of investigation for patients with

abdominal pain following colonoscopy.

This case demonstrates that haemodynamically stable patients can be managed non-operative with serial assessment of bedside observations, haematological markers, fluid resuscitation, blood transfusions and further imaging as necessary.

5. Learning points

- 1) Peri-colonic haematoma is a rare but potentially life threatening complication of colonoscopy.
- 2) A high index of suspicion is required in patients with abdominal pain and signs of haemodynamic instability following colonoscopy. This is to ensure the complication is not missed.
- 3) CT imaging should be considered as the first line of investigation for patients with abdominal pain following colonoscopy.
- 4) In haemodynamically stable patients, non-operative management can be considered with serial assessment of bedside observations, haematological markers, fluid resuscitation, blood transfusions and further imaging as necessary.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Ethical approval

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Author contribution

Miss Felicity Page: literature search, writing the paper.
Mr Olfunso Adedeji: writing the paper.

Conflicts of interest

No conflict of interest.

Guarantor

Felicity Page.

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