CASE REPORT

Unexpected complication of colonoscopy

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Accepted 3 January 2017

SUMMARY

The authors present a rare case of a 71-year-old man presenting with large bowel obstruction after attempted colonoscopy. The procedure was impossible to complete due to a tight sigmoid stricture and the patient presented with an acute abdomen the following day. He was managed conservatively and discharged before returning for an elective laparoscopic sigmoid colectomy. The potential differentials of an acute abdomen post-colonoscopy are discussed and the literature reviewed on this rare complication. Finally, the authors review whether there is pressure on endoscopists to 'complete' colonoscopies (by achieving caecal intubation) based on regulatory indices in quality, and how this might have to be disregarded in unfavourable circumstances.

BACKGROUND

Colonoscopy is a widely used investigative procedure and the gold standard in assessment of lower gastrointestinal disease. The procedure is known to carry a small risk of perforation (0.19%) and bleeding (0.24%).¹ Since the advent of the Bowel Cancer the number of colonoscopies has increased since the advent of the Bowel Cancer Screening Programme,² and potentially so will colonoscopy-related complications requiring acute hospital admission. This report describes a rare complication of colonoscopy and reviews the literature to educate clinicians on the acute take of the wide differential of an acute abdomen post-colonoscopy. Finally, we hope this report warns endoscopists of the potential perils of trying too hard to pass tight benign strictures.

CASE PRESENTATION

A 71-year-old man with a known history of diverticulosis was referred for outpatient colonoscopy due to left iliac fossa pain. His comorbidities included ischaemic heart disease, with previous history of coronary artery bypass grafting, and hypertension.

The scope insertion was limited by tight angulation and severe diverticular disease at the rectosigmoid junction with a smooth stricture. Multiple attempts were made to complete the procedure, but the angulation was not passable despite multiple position changes, the use of water insufflation and the use of a gastroscope. The procedure was therefore abandoned, and outpatient computer tomography of the abdomen and pelvis with contrast (CTAP) was requested instead.

The patient was admitted the next day with severe central abdominal pain and nausea, having not opened his bowels for 24 hours. On

examination, he was tachycardic, afebrile and the abdomen was distended and tender with a resonant percussion note.

INVESTIGATIONS

Peripheral blood analysis showed C reactive protein 55 mg/L, white cell count $5.7 \times 10^9/L$, haemoglobin 120 g/L, sodium 135 mmol/L, potassium 3.9 mmol/L and creatinine 88 $\mu\text{mol/L}$.

Plain abdominal radiography showed that the descending and transverse colon appeared distended with an abrupt stop in the descending colon suggesting sigmoid obstruction.

Urgent CTAP showed enhancing mucosal thickening of the sigmoid leading to severe stricture. The rest of the colon was markedly distended due to subsequent obstruction (figures 1 and 2). There was additional parietal soft tissue which may represent parietal haematoma or localised collection. The small bowel was distended normally due to a competent ileocaecal valve.

DIFFERENTIAL DIAGNOSIS

The most common diagnosis to be considered for an acute abdomen following colonoscopy would be colonic perforation.¹ However, previous literature reviews have included cases of splenic injury (49), mechanical bowel obstruction (21), appendicitis (14), ischaemic colitis (10), small bowel perforation (5) and cholecystitis (3).³

Unless the patient is clinically unstable, CTAP might be considered an informative investigation to differentiate between the causes before the requirement for emergency surgical involvement.

TREATMENT

On the basis of the radiological diagnosis of large bowel obstruction, the patient was managed conservatively with insertion of a nasogastric tube to decompress the abdomen, intravenous fluids and antibiotics.

He opened his bowels and abdominal pain resolved over the course of 6 days. He was started on laxatives to aim for a regular bowel habit and received input from the dieticians. He was discharged with a plan for elective sigmoid colectomy.

OUTCOME AND FOLLOW-UP

He was subsequently electively admitted for laparoscopic sigmoid colectomy 2 months later where a diverticular mass was identified in the mid-sigmoid colon and lateral pelvic wall. This was dissected, and an end-to-end anastomosis was formed. The operation was complicated by an anastomotic leak, which was managed with a washout and formation of a defunctioning loop ileostomy.

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To cite: Nadarajah R, Pee L. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2016-217296

Figure 1 Coronal section of CT abdomen pelvis showing large bowel obstruction.

Figure 2 Axial section of CT abdomen pelvis showing large bowel obstruction.

Formal histology from the resection showed features consistent with diverticulitis with diverticula formation associated with active inflammation, focal ulceration, abscess formation, transmural inflammation and fibrosis and serosal congestion. There was no evidence of dysplasia or malignancy.

The patient has managed well with the stoma since the operation and is planned for a reversal this year.

DISCUSSION

Mechanical bowel obstruction following colonoscopy is extremely rare. Almost half of previous case reports have been secondary to volvulus of the caecum, sigmoid or entire small

bowel mesentery. The rest are related to incarceration within external or internal hernias and caeco-colic intussusception.³

Though we cannot be certain, the chronology of events suggests that this sigmoid obstruction was caused by the colonoscopy. The CTAP showed enhanced mucosal thickening leading to the point of obstruction in the sigmoid. We propose that the multiple attempts to pass the stricture during colonoscopy induced an inflammatory response (or even a microperforation) precipitating the obstruction. This theory is supported by a 2015 case report of large bowel obstruction after colonoscopy where the patient, also known to suffer from diverticulosis, had biopsies taken of small sessile polyps near the junction of the sigmoid and descending colon. Repeat sigmoidoscopy immediately after diagnosis showed spasm and oedema at the polyp biopsy sites producing an almost impassable obstruction.⁴

Finally, we report this rare complication to warn endoscopists against trying too hard to pass tight benign strictures. The quality of endoscopic investigation is regulated in the UK by the Joint Advisory Group on Gastrointestinal endoscopy (JAG) which, among its indices of quality, stipulates a caecal intubation rate of at least 90%. It is understandable to aim for this standard given that the consequences of an incomplete examination are missed diagnosis and failure to prevent interval cancers.⁵

Nevertheless a multicentre study in the Northeast of England showed that 99.2% of colonoscopists were able to meet the 90% caecal intubation rate with very low complication rates (0.10% bleeding and 0.02% perforation),⁶ and a single-centre retrospective study has shown that cases of colonoscopy have been converted to flexible sigmoidoscopy because of an impassable stricture.¹ These figures should reassure endoscopists against feeling undue pressure to complete procedures even in unfavourable circumstances. In such difficult situations, the decision will be made by an individual endoscopist based on their experience, the clinical question and what they see before them, but we hope this case report highlights a rare complication of difficult colonoscopy.

Learning points

- ▶ Acute abdomens after colonoscopy have many differentials, including perforation, inflammation of viscera and obstruction.
- ▶ Imaging with computer tomography of the abdomen and pelvis, if allowed by clinical condition and renal function, will help delineate the diagnosis.
- ▶ Obstruction may be secondary to inflammation following colonoscopy and can resolve with conservative treatment.
- ▶ Endoscopists should balance this potential complication against the clinical urgency when faced with a tight stricture.

Contributors RN and LP involved in (1) conception and design, acquisition of data or analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content; (3) final approval of the version published and (4) agreement to be accountable for the article and to ensure that all questions regarding the accuracy or integrity of the article are investigated and resolved.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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