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Case Report

Transverse colon volvulus post colonoscopy: a case report

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ABSTRACT

Colonic volvulus accounts for 15-20% of large bowel obstructions. A very small percentage of colonic volvulus occur in the transverse colon and splenic flexure (<5%). Colonic volvulus is a surgical emergency and requires urgent decompression to prevent bowel ischaemia and perforation. The incidence of colonic volvulus post colonoscopy is rare, and aetiology is believed to be secondary to insufflation in the context of a non-fixed/mobile segment. We present a case of a 75-year-old man who presented to the emergency department with abdominal pain following a colonoscopy. Computer tomography (CT) imaging of his abdomen demonstrated an acute volvulus of the transverse colon. He proceeded to a diagnostic laparoscopy where the volvulus had resolved. The transverse colon was noted to have redundancy, but both the caecal pole and splenic flexure were fixed. The decision was made not to respect the bowel. Transverse colon volvulus is a rare occurrence, and accurate assessment and investigation of patients presenting with obstructive bowel symptoms is essential to allow prompt surgical management and prevent ischaemia and bowel wall perforation

Keywords: Volvulus, Transverse colon, Colonoscopy, General surgery

INTRODUCTION

Large bowel obstructions make up 25% of all intestinal obstructions, and of that number, colonic volvulus accounts for 15-20%.[1,2] Whilst colonic volvulus is most common benign cause of large bowel obstruction, large majority are sigmoid volvulus (75%) followed by caecal volvulus (22%).[3] Small percentage of colonic volvulus occur in transverse colon and splenic flexure (<5%).[4]

Colonic volvulus is a surgical emergency and requires urgent decompression to prevent bowel ischaemia and perforation.[1] Sigmoid volvulus can be managed in the first instance with sigmoidoscopy decompression (rigid or flexible sigmoidoscopy), though the risk of recurrence remains high.[5] Volvulus of the caecum, transverse colon, and splenic flexure require operative management, and most often resection of the involved segment.[6,7]

The incidence of colonic volvulus post colonoscopy is rare, and aetiology is believed to be secondary to insufflation in the context of a non-fixed/mobile segment.[8] Recognition of this complication in patients with abdominal pain post colonoscopy is paramount to ensure timely management and prevention of secondary complication.[9]

CASE REPORT

A 75-year-old man presented to hospital with 24 hours of cramping abdominal pain, and no passage of bowel motions or flatus. Less than two days prior he had a colonoscopy and endoscopy for investigation of altered bowel motions and weight loss. The procedures were uncomplicated, and there were no significant findings.

The patient underwent a CT abdomen with portal venous contrast which demonstrated an acute volvulus of the transverse colon around the transverse colon mesentery, with associated distention of the ascending colon and a large volume of stool in the caecum. (Figures 1 and 2). There were also fluid filled loops of distal small bowel,

but no high grade obstruction. The colon beyond the volvulus was decompressed.

The patient was consented for a diagnostic laparoscopy ± extended right hemicolectomy and proceeded to surgery 4 hours after presentation to the emergency department. Just prior to operation, the patient advised that he had passed some flatus. The patient proceeded to a diagnostic laparoscopy, and at the time of the procedure, the volvulus had resolved. There was evidence of possible bruising from where the volvulus had occurred, but no adhesions. The hepatic and splenic flexures were fixed in position, and there was some redundancy of the transverse colon (Figure 3). The decision was made to not proceed with an extended right hemicolectomy given the negative findings at laparoscopy, and the fact that there was a precipitating event.

Post operatively the patient had a slow diet upgrade, and a gastro-graffin follow through abdominal x-ray series which demonstrated contrast through to the rectum. He was discharged from hospital four days after admission.

Figure 1: Scout film for CT demonstrating distended and tortuous transverse colon, with distension of right colon, and collapse of left colon

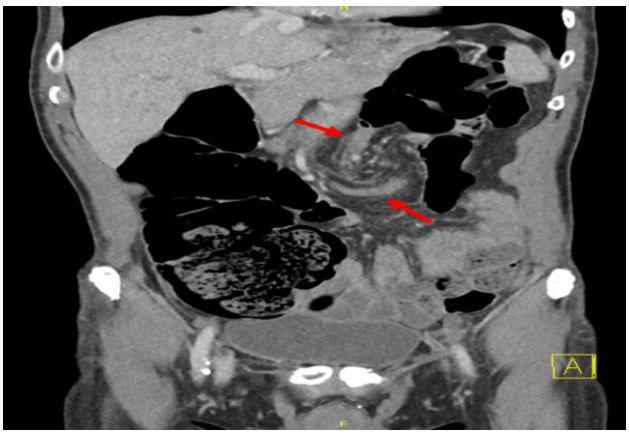

Figure 2: CT image demonstrating mesenteric swirl, with red arrows pointing to the two transition points of the transverse colon, generating a closed loop obstruction, or transverse colon volvulus.

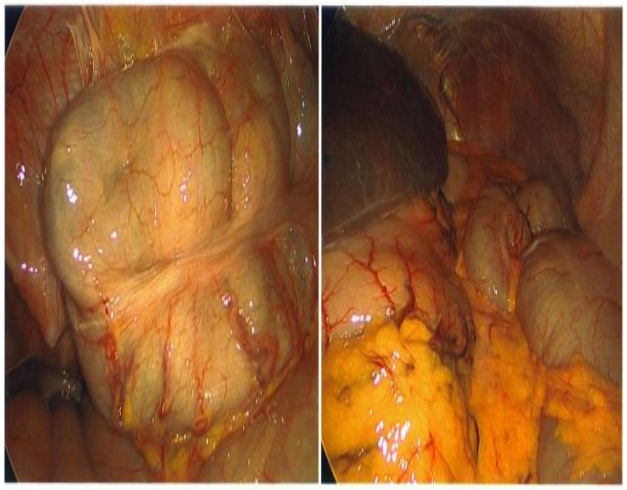

Figure 3: Intraoperative photographs of diagnostic laparoscopy. The first image demonstrates the caecum, which is fixed in the right lower quadrant as seen in the top of the photograph. The second image demonstrates a redundant transverse colon, with a fixed splenic flexure in the left upper quadrant. All bowel was viable.

DISCUSSION

Transverse colon volvulus is a rare phenomenon, with less than 100 reported cases in the literature.[1] Risk factors for the development of TCV include congenital (malrotation, abnormal fixation), chronic constipation, non-fixation, pregnancy, Chilaiditi's syndrome, and pseudomembranous colitis.[10] Unlike sigmoid volvulus, it is often not amenable to colonoscopic decompression, and in cases where this has been first line treatment, there is a high rate of recurrence.[11] Therefore, mainstay of management should be similar to that of caecal volvulus, where there is operative fixation either with an extended right hemicolectomy, or segmental resection.[7]

Previously transverse colon volvulus was commonly only diagnosed at the time of operation due to the absence of any pathognomonic signs on plain film x-ray, which used to be the only method of imaging commonly used.[12] With the increasing use of computerised tomography scanning (CT scan), cross sectional imaging of the abdomen allows for more definitive diagnosis, and can potentially improve time to surgery and fixation of TCV, which has a higher mortality rate than caecal or sigmoid volvulus.[13]

Abdominal pain post colonoscopy is not an uncommon occurrence, and while frequent, should be treated seriously. Rates of significant complication post colonoscopy are less than 1% and are usually in association with polypectomy (85%).[14] The most common significant complications are bleeding, and perforation, which can be due to mechanical trauma, barotrauma, or electrocautery injury during polypectomy.[14] There are less than 10 reported cases of volvulus post colonoscopy, and of those reported, the

volvulus was of the caecum, or the sigmoid colon.[8] There are no reported cases of transverse colon volvulus post colonoscopy in the literature to date. The mechanism of how colonoscopy results in volvulus is not well understood, but in these patients, risk factors included abnormal/absence fixation of the caecum, and redundant colon.[15]

While the evidence suggests that there is a greater risk of recurrence in patients with TCV who do not undergo a resection, the decision was made in this case not to proceed to a resection. This decision was based on the operative findings of adequate fixation of both the hepatic and splenic flexures, and the precipitating event of a colonoscopy to cause volvulus of the transverse colon.

CONCLUSION

Transverse colon volvulus is a rare occurrence, and accurate assessment and investigation of patients presenting with obstructive bowel symptoms is essential in order to allow prompt surgical management and prevent ischaemia and bowel wall perforation. This case demonstrates that whilst the risk of developing a volvulus post colonoscopy is low, adequate investigation of abdominal pain post colonoscopy, often with CT imaging, is necessary to allow accurate diagnosis of this serious surgical condition.

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