

## A Curious Case of Passing Gangrenous Colon Per Rectum

### ABSTRACT

We report a case of a 66-year-old male who has presented with bleeding per rectum for 3–4 months. He had a history of being operated on for hemorrhoidectomy nine years ago. He underwent a colonoscopy, which detected a large sessile polyp at the rectosigmoid junction, for which a polypectomy was done. The histopathology of the polyp revealed moderately differentiated adenocarcinoma arising within the villoglandular polyp (malignant polyp) with a base involved. He was then operated on for anterior resection, followed by colorectal anastomosis. There was an anastomotic leak noted in the post-operative period for which the patient was re-explored, and Hartman's procedure was done in view of gangrenous sloughing of the descending colon with a resultant leak. Seven months later, the patient was taken up for soma reversal, and a covering ileostomy was done. He later followed up with an entire bowel wall coming out per rectum. It is a rare and poorly understood case of colonic mucosal sloughing out per rectum presenting without high fever, tachycardia, a rigid abdomen, or hemodynamic instability.

**Key words:** Colonic mucosa sloughing, Hemodynamically stable, Ischemic bowel

### INTRODUCTION

There are many causes of colonic ischemia that fall into the occlusive or non-occlusive category. Trauma, thrombosis, or immobilization of the mesenteric arteries may be the cause of an obstruction of the colon's blood supply. Moreover, widespread ischemia in the colon or rectum can be caused by blockage or diffuse vasospasm affecting the primary artery supply of the large intestine. The majority of ischemic colitis episodes, however, are spontaneous, and they are typically thought of as localized variations of non-occlusive ischemia. Many local and systemic physical and biochemical variables, such as arteriovenous shunting in the intestine wall and mesenteric circulation, combined with intense vasoconstriction, and reduce colonic blood flow. Some medications that have been linked to ischemic colitis are cocaine, beta-blockers, and diuretics. Colic ischemia may be caused by occlusion of the colon brought on by a tumor, adhesions, diverticular disease, volvulus, or fecal impaction. Most of the time, neither the cause nor the precipitating event can be found.

Ischemia of the colon is predisposed to multiple variables. More blood flows per 100 g of tissue occur in the colon than in any other region of the digestive system. In addition, the colon usually depends on collateral arterial circulation.<sup>[1]</sup> The reduction in blood flow that occurs along with the colon's functional motor activity is another element that puts the colon at risk for ischemic injury. When hypotension occurs, the colon's auto-regulation is less efficient than that of the rest of the gastrointestinal system, which leads to a rapid and dangerously low oxygen supply that causes ischemia.

In addition, inappropriate inflammatory episodes that may actively contribute to ongoing disease processes, particularly

Keshavi Mehta<sup>1</sup>, Mohd Shaad Shaikh<sup>1</sup>, Nayan Gajghate<sup>1</sup>,  
Vrushali Pandhare<sup>2</sup>, Sanjay Chatterjee<sup>3,4</sup>

<sup>1</sup>Department of General Surgery, Bombay Hospital, Mumbai, Maharashtra, India, <sup>2</sup>Department of General Surgery, Bombay Hospital, Mumbai, Maharashtra, India, <sup>3</sup>Department of General Surgery, Maharashtra University of Health Sciences, Nashik, Maharashtra, India, <sup>4</sup>Department of General Surgery, Bombay Hospital Institute of Medical Sciences, Mumbai, Maharashtra, India

#### Corresponding Author:

Sanjay Chatterjee, Assistant Professor of General Surgery Chamber no. 108, Bombay Hospital Institute of Medical Sciences, Bombay Hospital Avenue, 12-New Marine Lines, Mumbai-400020, Maharashtra, India.  
E-mail: aparnasanjay@hotmail.com

through the alteration of epithelial barrier function, are linked to colonic ischemia.

Any section of the colon can be affected by colonic ischemia, although the sigmoid colon, descending colon, and splenic flexure are the most frequently affected. While involvement of the entire colon is unusual, segmental involvement is the most typical distribution. Because the colon and rectum are supplied by several vessels, including the SMA, IMA, and superior hemorrhoidal artery, colonic ischemia is segmental in character. Watershed sections of the colon are commonly affected by nonocclusive ischemic injuries. These areas are vulnerable to ischemic injury due to their placement between two distinct primary vascular pedicles. The splenic flexure and the sigmoid-rectum junction are two examples of these watershed areas. Due to its plentiful dual blood supply from the splanchnic and

systemic arcades, the rectum is rarely implicated. Patients with atrial fibrillation, coronary artery disease, and chronic renal disease are more frequently diagnosed with right-sided-only ischemia.<sup>[2]</sup>

## CASE REPORT

A 66-year-old male, a known case of hypertension and ischemic heart disease, presented to our clinic in October 2022 with complaints of bleeding per rectum for 3–4 months. The bleeding was insidious in onset and occurred as streaks with the stools. There was no other positive history. The patient had been previously operated on for hemorrhoidectomy 9 years ago, laparoscopic cholecystectomy 7 years ago, and coronary angiography with stenting 3 years ago. On examination, there were no other positive findings. The patient was advised to have a colonoscopy, which revealed large internal hemorrhoids and a large sessile polyp at the rectosigmoid junction, for which a polypectomy was done in the same sitting. The histopathology of the polyp revealed moderately differentiated adenocarcinoma (malignant polyp) with a base involved. The patient was admitted, and a PET scan was done, which revealed smooth rectal wall thickening with focal increased metabolic activity. The patient was thus operated in November 2022 for low anterior resection with sigmoid colon with mid-rectal anastomosis, and the specimen was sent for histopathology. Pelvic drains were kept intra-operatively. The patient passed flatus and motions, and the Foleys catheter was removed on post-operative day 3, and the patient was allowed a liquid diet on day 4. On post-operative day 5, he complained of extreme discomfort in the abdomen, non-passage of flatus and stools, sudden abdominal distension, sluggish bowel sounds, feculent collection in the drain, and soakage at the lower suture line. The patient was kept nil by mouth, a ryles tube was inserted, aspiration was done continuously, IV fluids had been started, and all the investigations had been done, which mainly included an abdominal X-ray, a complete blood count, and serum electrolyte levels. All the investigated parameters were within normal limits except for low serum potassium levels. X-rays (abdo + pelvis) showed signs of small bowel obstruction. Till postoperative day 7, electrolyte correction was done, and the patient was managed conservatively. On post-operative day 8, ultrasonography of the abdomen and pelvis was done, which was suggestive of small bowel obstruction without any localized collection. This was followed by a CECT scan (abdomen + pelvis) on post-operative day 9, which revealed high suspicion for an ischemic bowel injury, along with the drain being seen intraluminal. The patient was thus taken up for re-exploration and stoma creation. Intraoperatively, it was found that there was a collection of fecal matter inside the pelvic cavity, and on further exploration, the descending colon was discovered to be gangrenous, and the drain was found intraluminal. This segment on histopathology revealed gangrenous necrosis of the

descending colon. The gangrenous bowel caused the drain to go intraluminal. Hartman's procedure and descending colostomy were done. The patient was shifted to the ICU postoperatively. After constant observation, monitoring of vitals, urine output, drain output and care, ryles tube aspiration, stoma health, correction of potassium and magnesium levels, and starting of total parenteral nutrition, the patient was allowed a liquid diet on post-operative day 5. Foley's catheter and ryles tube were removed on post-operative day 8. The patient was started on a high-protein soft diet on post-operative day 9, followed by a full diet after the stoma became functional. The patient, being vitally and clinically stable, was discharged on post-operative day 11.

This patient was re-admitted in August 2023 for a reversal of the stoma. A CECT scan (abdomen + pelvis) was done, which revealed the previous post-operative changes without any leak or collection. A colonoscopy was done, which was suggestive of multiple adenomatous polyps, and annual surveillance was advised. The patient was taken up for stoma reversal. Operative findings revealed dense adhesions of the small bowel with an anterior abdominal wall and a few inter-bowel adhesions. Adhesiolysis was done. The rectal stump created previously was dissected, and colorectal anastomosis was done after mobilizing the right colon over the ileocolic pedicle. The middle colic artery was preserved. A covering loop ileostomy was done, and drains were kept. Postoperatively, the patient was shifted to the ICU. Vitals, urine output, drain output, stoma output, and electrolyte monitoring were done. The patient started mobilizing out of bed, and thus the urinary catheter was removed on post-operative day 4. Oral feeding was initiated on the same day. The drain at the anastomotic site had a feculent smell on post-operative day 6, but the patient was vitally and clinically stable. He had 3–4 episodes of bilious vomiting every day. The patient was managed conservatively. A CECT scan (abdomen + pelvis) was repeated, which revealed the absence of wall enhancement in the mid- and distal-ascending colon up to the anastomotic site, with the rectum associated with multiple extraluminal air locules suggestive of localized perforation with ischemic changes within the ascending colon. The patient was stable vitally and clinically, irrespective of the CT scan findings. The vomiting episodes reduced, and the patient was discharged on post-operative day 14. Eventually, the vomiting stopped, and the patient was discharged. After a month, the patient reported at home an unusual finding of something coming out of the rectum with an intact prolene suture. It kept increasing in length until the day when an entire sloughed-out bowel wall had passed per rectum. The patient was vitally and clinically stable throughout and continues to live without any complaints or any derangements in his vitals, with his ileostomy functioning well and a drain in situ draining minimal clear fluid.

He is advised a repeat CT scan with contrast with or without a colonoscopy after 3 months



## DISCUSSION

James A. Castellone *et al.*, in their study, mentioned that the presentation of ischemic bowel disease is frequently subtle, especially in the elderly. The most typical chief complaint that these patients present with is abdominal pain. Pain at the beginning of the presentation is nonspecific and disproportionate to the physical findings, which might make the diagnosis difficult to make. In our instance, the patient was vitally stable, showed no pain, and all the test results were within normal ranges.

## CONCLUSION

Ischemic bowel leading to gangrene is one of the rare causes for the drain to be seen intraluminal in the scans and intraoperatively. The incidence of infarction can also be related to variations in the collateral blood supply because: (1) The middle colic artery is absent in 20% of

patients; (2) The marginal artery may be discontinuous; and (3) When the inferior mesenteric artery is ligated at some distance from the aorta, the arch of Riolan may be included in the ligature.<sup>[3]</sup> Endoscopy, angiographic, and contrast imaging can prove to be useful diagnostic tools. Overall, using an aggressive diagnostic approach will reduce mortality drastically. The most important prognostic factor in such cases relies on the time interval between the onset of symptoms and definitive treatment.<sup>[4]</sup>

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**How to cite this article:** Mehta K, Shaikh MS, Gajghate N, Pandhare V, Chatterjee S. A Curious Case of Passing Gangrenous Colon Per Rectum. *Bombay Hosp J* 2023;65(3):29-31.

**Source of support:** Nil, **Conflicts of interest:** None

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