

Clearing the obstructed small bowel via an orifice in the caecum after a resected appendix: a case report and presentation of the technique

Andrzej Żyluk^A✉, Zbigniew Szlosser^B, Maciej Iwanicki

Pomeranian Medical University in Szczecin, Department of General and Hand Surgery, Unii Lubelskiej 1, 71-252 Szczecin, Poland

^A ORCID: 0000-0002-8299-4525; ^B ORCID: 0000-0002-7334-7932

✉ azyluk@hotmail.com

ABSTRACT

A patient suffering from a mechanical obstruction of the distal sigmoid colon for several days, caused by a tumour invading the bowel circuitously, is reported. Intraoperatively, an extensive distension of the whole colon and the small intestine was noted. The operation consisted of a sigmoidectomy (with the tumour) followed by an end-colostomy on the descending colon (Hartmann operation). The colon was then cleared by “milking” the

faecal contents to the end of the sigmoid colon. The distended small bowel was successfully cleared via an orifice in the caecum after a resected appendix. Although the presented technique seems to be simple, the authors did not find a similar method of clearing the small bowel in the literature.

Keywords: large bowel obstruction; small bowel clearing; vermiform appendix.

INTRODUCTION

Complete mechanical obstruction of the large bowel, particularly of the distal portion (the sigmoid colon and rectum), is associated with extensive distension of the colon which is filled with faeces and gas. It manifests clinically with abdominal distension and flatulence at percussion. During surgery, the distended large bowel must be cleared (decompressed) which is usually conducted via the orifice of the resected bowel, prior to performance of the colostomy or anastomosis. Decompression of the colon from faecal content is not easy and requires “milking” faeces from the proximal to the distal of the bowel. In shorter lasting mechanical obstructions of the colon, a retention of faecal contents in the small bowel does not occur. In longer lasting ileus, the small bowel is also involved and filled with faeces and thus, needs decompression during the operation. The “milking” of the contents from the small bowel to the caecum, and then through the colon is challenging, time consuming, and may cause bowel damage such as disruption of the serous layer, formation of hematomas in the bowel wall and mesentery. Retrograde clearing of the jejunum into the stomach and then sucking out the faeces with a nasogastric tube is also possible, but has a limited range [1].

The article presents a case of mechanical obstruction of the colon caused by a malignant tumour invading the distal portion of the sigmoid colon circuitously. Intraoperatively, an enormously distended colon and largely distended small bowel were found. The colon was cleared after resection of the sigmoid colon and the small bowel was cleared via an orifice in the caecum after the resected appendix.

CASE REPORT AND TECHNICAL TIPS

A 72 years-old male was admitted to the authors' institution due to signs and symptoms of a mechanical obstruction of the large bowel lasting approx. 1 month. At presentation, the patient suffered from a loss of appetite, mild abdominal pain and had not been passing faeces or flatus. He did not vomit. Physical examination revealed extensive distension of the whole abdomen and mild tenderness at palpation with no peritoneal signs. Auscultation revealed increased bowel sounds with a metallic vibration, typical for a mechanical obstruction. Rectal examination showed an empty rectal ampulla with no pathological changes. A nasogastric tube was inserted and 200 mL of retained contents were aspirated. History obtained from a family member revealed that these symptoms lasted about 1 month, with a tendency towards gradual exacerbation, and that the patient only absorbed a small volume of liquid meals. He was disabled (did not walk) due to spine and hip fractures sustained 8 years earlier. A plain abdominal X-ray showed a distended small and large bowel with fluid, a pattern typical for a mechanical obstruction, most likely of the small bowel (Fig. 1). After admission to the surgical ward, an attempt at conservative treatment was implemented (fluid infusion, spasmolytics and enema), and a barium meal was started. Following 24 h of treatment, no improvement was noted and an X-ray showed retention of the barium contrast in the small bowel (Fig. 2). A decision was made on operative treatment but the patient declined informed consent until the next day, where it was obtained after a discussion between the patient and family members. A prophylactic dose of antibiotics was given prior to surgery. The operation was performed under general anaesthesia. The abdomen was opened via a midline incision in the mid- and hypogastrium. An extremely distended sigmoid colon

was found and retrieved from the abdominal cavity. A plum-sized tumour was found (Fig. 3) in the distal part of the bowel, invading it circuitously and causing complete obstruction. The tumour was cut off with an adequate margin and the remaining, distal part of the sigmoid colon was closed with a stapler. Next, the sigmoid colon was dissected proximally and cleared via an incision in its wall (Figs. 4 and 5). The colon was then cleared of faeces and gas by the surgeon who, starting at the caecum, pressed the bowel between 2 fingers and gradually moved the contents distally (this manoeuvre is called “milking”); this was relatively difficult and required several rounds to clear the colon. As the small bowel was also distended and filled with fluid and gas, it required clearing as well (Fig. 6). A decision was made to perform an appendectomy of the healthy appendix and to try to clear the small bowel via an orifice in the caecum after the resected appendix. This was successfully performed (Fig. 7), followed by the ligation of the stump of the appendix, its invagination into the caecum and tying a purse string suture, as is routinely done at open appendectomy. Finally, the sigmoid colon and tumour were resected and an end-colostomy was formed from the descending colon. Manual examination of the liver revealed numerous, hard tumours, most likely of metastatic character. The post-operative course was complicated by right lung pneumonia and the patient needed a 1-week stay in the intensive care unit, however, he quickly improved and was transferred back to the surgical ward. No other complications were observed in the healing operative wound or function of the colostomy. One-week after the operation, oral feeding was commenced with success.



FIGURE 1. Plain abdominal X-ray showing a typical pattern for mechanical obstruction: distension of the bowel and fluid



FIGURE 2. On the X-rays with the barium meal, mechanical obstruction of the large bowel was apparent

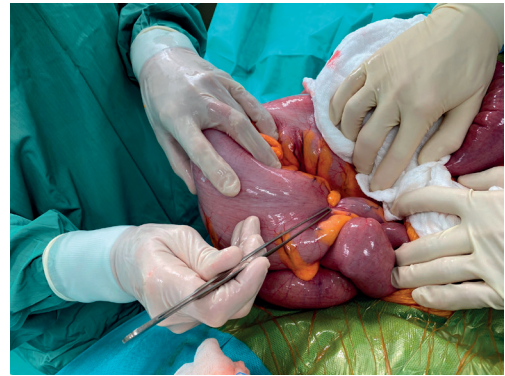


FIGURE 3. Excessively enlarged sigmoid colon with the tumour (indicated by forceps)



FIGURE 4. Dissected, enlarged sigmoid colon with tumour following its distal removal



FIGURE 5. Clearing of the sigmoid colon via an incision in its wall



FIGURE 6. Distended caecum with a healthy vermiform appendix; a purse string suture is placed in the base of the appendix. Note flatulent ileum filled with pre-feeding residuals



FIGURE 7. Successful voiding of the small bowel via an orifice after resected appendix

CONCLUSION

The presented case is submitted due to an original technique used to clear the small bowel in the course of a mechanical obstruction in the distal part of the colon. In the 2 articles included as references, the authors reported cases of mechanical

obstruction of the small bowel caused by appendiceal tumours; in 1st case, decompression of the small bowel was accomplished via the lumen of the resected ileum [2] and in the 2nd, by retrograde milking and suction via naso-jejunal tube [3]. One may wonder why the caecum was not simply incised and cleared. The answer is simple: any incision and further suturing of the obstructed large bowel is associated with a high risk of failure (leakage). This particular site in the caecum, which is at the base of the appendix, presents as a very safe point for opening the bowel as, after above described fitting almost never fails. Although the presented technique seems to be simple and obvious, the authors failed to find a similar method of clearing the small bowel in the literature and decided to submit this report.

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