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## Laparoscopic colostomy for acute left colon obstruction caused by diverticular disease in high risk patient: A case report



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## ABSTRACT

**INTRODUCTION:** The colostomy is often necessary in complicated diverticular disease. The laparoscopic colostomy is not widely used for the treatment of complicated diverticular disease. Its use in patients with high operative risk is still on debate. The aim of this case report was to present the benefits of laparoscopic colostomy in patients with high peri- and postoperative risk factors.

**PRESENTATION OF CASE:** We present a case of 76-year-old female admitted to emergency unit for left colonic obstruction. The patient had a past history of liver cirrhosis HCV-related with a severe malnutrition, hypertrophic cardiomyopathy, diverticular disease, hiatal hernia, previous appendectomy. Patient was classified according to their preoperative risk ASA 3 (classification of the American society of Anesthesia-ASA score).

Contrast-enhanced abdominal CT revealed a marked thickening in the sigmoid colon and a marked circumferential stenosis in the sigmoid colon in absence of neoplasm, and/or abscess. The laparoscopic procedure is proposed as first intention.

**DISCUSSION:** The operation time was 50 min, and the hospital stay was 4 days. Post operative complications grade I according to the Clavien Dindo Classification.

**CONCLUSIONS:** Laparoscopic colostomy is safe and feasible procedure in experienced hands. It is associated with low morbidity and short stay in hospital and should be considered a good alternative to a laparotomy.

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## 1. Introduction

The present case report test the role of laparoscopy in the treatment of acute sigmoid obstruction caused by diverticular disease, one of the most common gastrointestinal disease [1–3].

The indication for the laparoscopic colostomy for large bowel obstruction caused by a diverticular disease is described [4–7]. We describe our experience (one case) of laparoscopic colostomy in elderly patient with poor general condition needed a emergency surgical treatment.

## 2. Case presentation

We present a case of 76-year-old female was admitted to the emergency unit with the complaints of abdominal pain, nausea and vomiting.

She had not flatulence and no defecation had been observed during the last four days.

Pain was not releaved by the analgesia.

The patient had a past history of liver cirrhosis HCV-related with a severe malnutrition, hypertrophic cardiomyopathy, diverticular disease, hiatal hernia with past history of previous abdominal surgery (appendectomy).

The patient was stable and the physical examination revealed diffuse abdominal distension, body temperature was 36,4 °C, blood pressure was 95/70 mmHg, heart rate 120 beats/min, respiratory rate 28 breaths/min. Routine haematological examination showed blood cell count  $8,1 \times 10^9$ /L, haemoglobin 12,7 g/L, platelet count  $81.000 \text{ mm}^3$ .

Liver function tests showed total bilirubin 7  $\mu\text{mol/L}$ , alanine aminotransferase 68 U/L, aspartate aminotransferase 92 U/L, prothrombine time 50 s (11–15 s).

The serum creatinine was normal.

Contrast-enhanced abdominal CT revealed a marked thickening in the sigmoid colon with associated a marked circumferential stenosis, no abscess and/or neoplasm (Fig. 1).

The barium enema confirmed the circumferential stenosis in the sigmoid colon (Fig. 2).

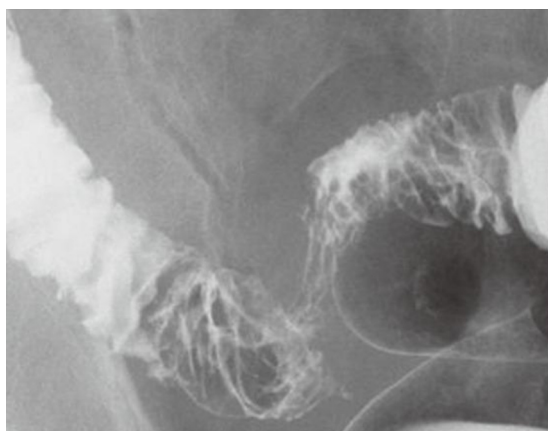
The explorative laparoscopy is performed.

Patient routinely receive preoperative antibiotics.

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**Fig. 1.** Computed tomography abdominal scan (axial section) showed the left colonic obstruction.



**Fig. 2.** Barium enema revealed a marked circumferential stenosis in the sigmoid colon.

The surgeon stands on the right of the patient and the assistant on the left. Under general anaesthesia, pneumoperitoneum was established with closed technique using the Verres needle (12 mmHg).

The 0° laparoscope was introduced through a 10 mm periumbilical port. Two additional operative trocars (5 and 10 mm) were positioned on the right side of the optical trocar.

We found a small amount of serous fluid which was aspirated. The ileum and caecum were dilated.

The laparoscopic adhesiolysis was performed with scissors and a Harmonic scalpel to prevent damage to the bowel.

A sigmoid colostomy was performed using a circular stapler (Fig. 3). The time duration of surgery was 50 min. There were no conversion to open surgery and there were no intraoperative and postoperative complications.

The patient was mobilized at the 2nd post operative day and the patient was discharged at 4th post operative day.

At 15th post operative day the patient was underwent to colonoscopy that exclude a colonic neoplasm.

There was no 30 day mortality.

### 3. Discussion

Laparoscopic colostomy is widely used for the treatment of large bowel obstruction [9–12].

Its use in patients with high operative risk is still on debate.



**Fig. 3.** Intraoperative laparoscopic view of the futur colostomy (the anvil of a circular stapling device was inserted into the proximal colon).

Laparoscopic stoma creation may be performed as an independent intervention or as a part of complex laparoscopic intestinal operations [13,14].

Indication for laparoscopic fecal diversion do not differ from open surgery [13–20].

When compared with open techniques the laparoscopic approach carries several potential advantages including a rapid post-operative recovery, less post-operative pain, earlier restoration of bowel function, less morbidity and shorter hospital stay with a short delay to normal activities.

The overall morbidity of laparoscopic colostomy is low but complications such as small bowel obstruction can be significant [10–12] and contributing factors such as obesity and a redundant colon.

Today it is warranted to propose first intention laparoscopic procedure for elective diverticulitis sigmoidectomy, for ileocecal resection for Chron's disease, for derivation stomies [13–19].

It is safe, easy to teach, and can be used particularly in patient with poor general condition.

Studies on the postoperative course of laparoscopic colostomy in high risk patients are very scarce.

Our report describes one case of a simple technique in elderly patient and do not represents the gold standard but a possible alternative.

We conclude that the laparoscopic colostomy is important in the treatment of colonic obstruction in high-risk patients and a prospective randomized trial is desirable.

### 4. Conclusions

Laparoscopic colostomy is safe and feasible procedure in experienced hands. It is associated with low morbidity and short time of hospitalization and should be considered a good alternative to a laparotomy in multimorbid patients.

### Conflicts of interest

The authors report that are no conflicts of interest.

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## 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”.

## Author contribution

Elisa Palladino: proposed the study.

Elisa Palladino performed research and wrote the first draft.

Elisa Palladino: collected and analyzed the data.

All authors contributed to the design and interpretation of the study and to further drafts.

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