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PERCUTANEOUS ENDOSCOPIC COLOSTOMY TO RELIEVE MALIGNANT BOWEL OBSTRUCTION

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ABSTRACT

Background: Malignant bowel obstruction due to peritoneal carcinomatosis is a common problem. When surgery is not feasible in the context of a high intraperitoneal tumour burden, other techniques are required.

Case report: We report the case of a 67-year-old female with malignant obstruction of the ascending colon. Following an unsuccessful surgical attempt, decompression was successfully achieved via percutaneous endoscopic colostomy using a lumen-apposing metal stent. The patient was able to resume a full oral diet within 2 days. However, local inflammatory complications arose due to faecal contamination of the sutures. Once the sutures were removed, no further interventions were required.

Conclusion: Percutaneous endoscopic colostomy is a safe and viable alternative for decompression in malignant bowel obstruction when surgery is not feasible. However, limitations include the risk of local infection due to sutures and its applicability only in cases with distal stenosis.

KEYWORDS

Bowel obstruction, peritoneal carcinomatosis

LEARNING POINTS

- Malignant bowel obstruction is a frequent challenge in palliative care.
- Percutaneous colostomy with a lumen-apposing metal stent (LAMS) is a safe and effective option to relieve bowel obstruction.
- Percutaneous colostomy with a LAMS remains patent in the long term.

INTRODUCTION

Peritoneal carcinomatosis is a prevalent and serious complication associated with gastrointestinal and gynaecological cancers. It often carries a worse prognosis than visceral metastases and is frequently accompanied by a variety of symptoms[1,2]. Among the complications of peritoneal carcinomatosis, bowel obstruction is the most critical and challenging to manage. The diffuse spread of cancer throughout the peritoneum and the resultant intestinal fixation by tumour masses typically lead to

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Figure 1. (A) Endoscopic view of the fully deployed LAMS in the caecum and (B) external view of the LAMS with four sutures in place.

multifocal obstructions, complicating surgery. Because of the limited life expectancy in these patients, maintaining and improving quality of life is of utmost importance. In this context, endoscopic techniques supplement surgical approaches to achieve personalised and effective treatment.

CASE DESCRIPTION

A 67-year-old female with a history of chronic kidney failure and coronary artery disease was admitted with faecal vomiting and abdominal pain. Eight months prior, she had been diagnosed with a poorly differentiated serous ovarian cancer with peritoneal carcinomatosis. After nine cycles of neoadjuvant chemotherapy, she underwent staging laparotomy including omentectomy. Even though no overt residual tumour remained, the patient presented with symptoms of bowel obstruction 2 months later. Computed tomography scan confirmed recurrent diffuse peritoneal carcinomatosis with obstruction of the proximal colon. Surgical ostomy was attempted but was not feasible because of tumour-fixed intestines. Instead, a colono-cutaneous fistula was formed, and a peritoneal catheter was placed. When symptoms of bowel obstruction remained, postoperative imaging showed persistent small bowel distension, because the fistula was located aboral of the obstruction. The patient was referred to our department for venting gastrostomy placement. Given the absence of small bowel obstruction, we opted for direct caecal decompression to enable oral feeding. The patient received peri-interventional antibiotic prophylaxis with piperacillin/tazobactam. Endoscopic access through the colonic fistula was used to intubate the caecum with a therapeutic gastroscope (Fuji EG-760CT, Fujifilm Europe GmbH, Germany) through the stenosis. A safe insertion site was identified by transillumination and indentation. Under endoscopic visualisation, four sutures were placed using a gastrostomy kit (Freka Pexact II, Fresenius Kabi Deutschland GmbH, Germany) to anchor the colon to the abdominal wall. A 0.035" guidewire (Jagwire, Boston Scientific, USA) was introduced into the caecum via an 18 G Chiba needle (Peter Pflugbeil GmbH, Germany). A 15 x 10 mm lumen-apposing metal stent (LAMS) (Hot Axios, Boston Scientific, USA) was deployed over the wire using pure cutting current (Erbe VIO 300, Erbe Elektromedizin GmbH, Germany) and dilated to 16.5 mm (CRE Balloon Catheter, Boston Scientific, USA). *Fig. 1* shows (A) the endoscopic view after stent insertion and (B) the external view of the ostomy site. Ostomy care was managed with a standard ostomy bag and skin protection seal to cover the sutures. Full bowel decompression was achieved, and the patient resumed an oral diet after 2 days. Two sutures were removed after 11 days, due to signs of local inflammation. The remaining two sutures were removed after 21 days as intended. After 3 months, the patient is on a full oral diet with a patent LAMS and undergoing chemotherapy.

DISCUSSION

Bowel obstruction by peritoneal carcinomatosis is a common problem that significantly impacts quality of life. The diffuse nature of carcinomatosis often leads to a frozen abdomen making surgical decompression unfeasible. In such scenarios, venting gastrostomies are usually employed to decompress the entire gastrointestinal tract and alleviate symptoms. While they allow oral ingestion of soft and liquid foods, parenteral nutrition is usually required, limiting quality of life. In contrast, endoscopic ostomy using a LAMS presents a rare but promising alternative. Although previously described[3,4], patient follow-up data is scarce.

Our case provides valuable insight, as the patient has maintained a full oral diet 3 months post-procedure. Considering the experience with LAMS in cystogastrostomy, this suggests long-term patency of the LAMS colostomy, making LAMS a valuable alternative to colonic stents that have a long-term patency rate of less than 50%[5]. In our case, we utilized sutures to secure the colon to the abdominal wall, which led to local inflammatory complications due to faecal exposure of the sutures, despite using skin protection seals. In future procedures, especially in patients with

a frozen abdomen, it may be advisable to omit suturing altogether. The LAMS offers sufficient intestinal adaptation, as demonstrated in endoscopic gastroenterostomy, potentially reducing the risk of such complications. Percutaneous endoscopic ostomy is theoretically possible for any endoscopically traversable malignant obstruction, we are limited by the reach of endoscopic guidance. Thus, it is an option only for patients with the most proximal stenosis in the terminal ileum or lower. While venting gastrostomy remains an essential option for upper intestinal obstructions, it should be considered only as a last resort due to the limited quality of life it affords. However, its role in providing symptom relief ensures its continued relevance in palliative care.

CONCLUSION

Percutaneous endoscopic colostomy is a safe and viable alternative for decompression in malignant bowel obstruction when surgery is not feasible. However, limitations include the risk of local infection due to sutures and its applicability only in cases with distal stenosis.

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