CASE REPORT

Delayed Colonic Perforation Following Stent Placement for Colorectal Obstruction: A Description of Two Cases with Stent Palliation

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Abstract- Bowel stent insertion has a variety of complications one major of which is colonic perforation. The purpose of this article is to reveal two cases with delayed colonic perforation after stent placement to relieve bowel obstruction caused by rectal cancer. The first patient was a 55 year-old man who was a candidate for stent placement to avoid palliative surgery and relieve his bowel obstruction. Although the procedure resulted in complete relief of patient symptoms, but he returned with signs of peritonitis 10 days after the stent placement. A perforation was found at rectosigmoid junction on laparotomy. The second patient was a 60 year-old man who underwent a successful stent placement and returned 3 months later with a complaint of abdominal pain that showed up to be due to a rectal perforation on investigations. In conclusion, bowel perforation following stent placement can be a major complication, so close follow-up is necessary to detect it as soon as possible and prevent it from becoming an irreparable complication.

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Introduction

Insertion of stent for large bowel obstruction following malignancy is commonly used and was proven to have good effects on palliative treatment of colorectal carcinoma (1-8). Complications which were found following stent placement in rectum include rectal bleeding, abdominal pain, tenesmus, obstipation, diarrhea, malposition, pseudo-obstruction, tumor ingrowth, migration, stent fracture, erosion and perforation (1,3,5,9). Delayed perforation because of a self expandable metallic rectal stent has been reported rarely. We describe 2 patients with stent placement for rectal obstruction due to rectal cancer.

Case Report

Case 1

A 55-year-old man presented with symptoms of bowel obstruction includes abdominal distention, nausea, vomiting and obstipation caused by metastatic rectal carcinoma. On colonoscopy a huge mass approximately 10 cm from the anal verge causing almost complete luminal obstruction was detected, although on biopsy the patient was noted to have normal mucosa. Abdominal and pelvic computed tomography revealed rectal carcinoma, with multiple lung, liver, lymph nodes and peritoneal metastases. Because of end stage rectal cancer which was inoperable, multiple metastases and the patient's poor general condition, palliative treatment was chosen and a self expandable metallic rectal stent (ENDOFLEX®) was inserted in distal rectum of patient. The procedure used has been described elsewhere (1-6). It was performed successfully. The symptoms of obstruction were relieved and the patient was discharged the next day, but he presented 10 days later with persistent signs of peritonitis. The patient underwent emergency laparotomy, and this revealed colonic perforation due to wires at the rectosigmoid junction (Figure 1). The stent was removed and a colostomy was performed. The patient's vital signs were stable, and a normal diet was tolerated. The patient was discharged with a good general condition.

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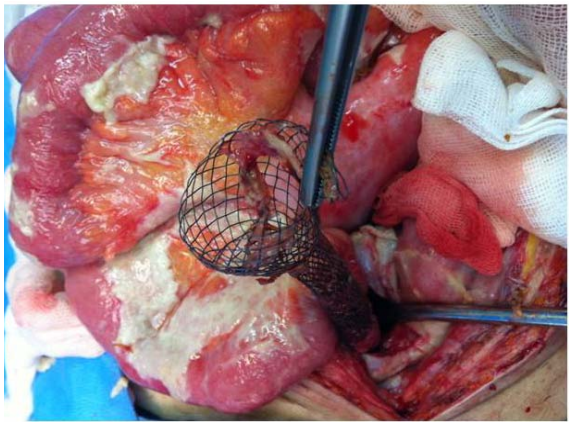

Figure 1. Rectal stent perforating into peritoneal cavity causing generalized peritonitis.

Case 2

A 60-year-old man who was known case of rectal cancer and 6 course of chemotherapy admitted to hospital because of developed constipation and hypogastric pain. On endoultrasonography (EUS), the large rectal mass lesion was detected in the rectum at 8 to 15 cm from the anal verge. The lesion had partially obstructed the rectal lumen. Insertion of an uncovered metallic stent (ENDOFLEX®) across the malignant stricture was considered to palliate the obstructive symptoms. The procedure was performed without difficulty as described in the previous case. During the hospital admission, the patient remained asymptomatic and was discharged home on metronidazole and lactulose medications. Three months later, he returned to hospital while he was complaining of spontaneous abdominal pain. Signs of generalized peritonitis were detected in clinical examination. Emergent laparotomy disclosed perforation of rectosigmoid junction with exposure of rectal stent (Figure 2) The patient tolerated perforation course. Follow up for 6 months post operation revealed considerably stable condition using permanent end colostomy.

Figure 2. Rectal stent perforating the rectosigmoid junction three month after insertion.

Discussion

Since it can relieve obstruction complications in most patients, the use of self-expandable metallic stents as a palliative treatment of rectal cancer is a valuable alternative to colostomy, and has achieved good clinical outcomes (10-13).

In this study our cases were admitted to hospital with malignant bowel obstruction and underwent stent placement. Both patients tolerated the procedure well, but patient 1 referred to hospital some days after stent insertion due to manifestations of peritonitis and underwent laparotomy and colostomy. Patient 2 also returned to hospital with a complaint of abdominal symptoms and signs of fecal peritonitis due to the large bowel perforation.

The overall technical and clinical success rates for placement of colorectal stent have been reported from 80% to 100% (14-19). Currently most of the colorectal stents are being inserted in obstructions caused by malignancy (3,20). In order to avoid palliative surgery in patients with advanced disease, these stents are being used in malignancies. Stents also can be inserted in patients with curable disease for decompression following by elective resection, in whom temporary stomas cannot reduce morbidity, better quality of life and shorter hospital stay (2,7,8).Generally, balloon dilation and conservative treatments are used for benign stenosis and if these procedures failed, surgical resection is advised. Although few studies investigated the features of interim colonic stents, but use of them can be efficient and avoid more invasive surgical treatment in order to treat benign strictures (9).

Complications were reported in 31% of patients who undergo implantation of stent. Minor complications, which presented by not requiring an intervention, include pain, tenesmus, obstipation, and diarrhea. Major complications include pain, stent fracture, erosion, obstruction, fistulization, bleeding, and perforation (9).Commonly, technical problems are responsible for immediate colonic perforation after stent placement. But delayed perforation of rectosigmoid junction can be due to stent quality more than technical fault (21).

Perforation is one of the most serious complications, occurring among 4% of patients with colorectal self-expandable metallic stents (22,23), although higher rates (16-83%) also have been reported (23,24).

Perforation may be due to excessive manipulation of guide wires before or after stent balloon dilation, stent wires, or involvement of not enough-experienced professionals in such procedures (24,26).Higher colonic

perforation rates occurred by inexperienced junior surgeons (24). We believe these 2 case reports had shown that although stent placement is an acceptable procedure for palliative treatment of malignant obstruction, but close follow up is necessary to detect the complication especially perforation following stent insertion. In conclusion, although stent placement is an acceptable procedure for palliative treatment of malignant obstruction, but the procedure involves taking the risks of immediate and delayed complications. Colonic perforation is usually an immediate complication of this procedure, but considering the above mentioned case reports, one should be aware of its possibility to happen as a delayed complication. We recommend close follow ups to detect delayed bowel perforation following stent replacement as soon as possible which could be life saving.

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