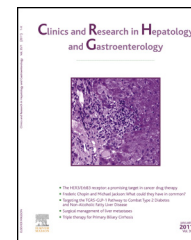




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CASE REPORT

Marked edema of colonic stoma after colectomy and severe pulmonary hypertension: Report of two cases

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KEYWORDS

Pulmonary hypertension;
Colon;
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Summary

Introduction: Pulmonary hypertension (PH) is a disease with a poor prognosis and is a risk for perioperative heart and respiratory failure. Few reports exist regarding a colectomy performed in patients with PH. Herein, we report two cases of colectomy performed in patients with severe PH, accompanied with marked edema of the colonic stoma after surgery.

Case presentation: In case 1, a 54-year-old patient with sigmoid cancer and severe primary PH underwent Hartmann's operation. After the operation, his stoma became markedly edematous and ulcerated. Swelling of the stoma became gradually reduced, and the patient was discharged from hospital 36 days after the operation. In case 2, a 62-year-old patient with upper rectal cancer and severe PH also underwent Hartmann's operation; his stoma became markedly edematous without ulceration.

Conclusion: Marked edema of the colonic stoma was observed in two cases with severe PH, with ulceration of the mucosa observed in one case. It was considered reasonable to avoid anastomosis in cases with severe PH.

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Introduction

PH is a disease with a poor prognosis [1]. Twenty years ago, the 3-year and 5-year survival rates for pulmonary hypertension (PH) were only 50 and 30%, respectively. Because of new drugs such as epoprostenol [2], the 3-year survival

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has increased to 72.1% [3]. However, even until recently, a patient with PH remained at high risk for surgery. The perioperative mortality rate for such patients is 3.5–7% and the morbidity rate, including heart failure and respiratory failure, is 6.1–42% [4,5]. However, previous reports did not focus on patients with PH who needed a colectomy, and little is known about the postoperative conditions of patients after colectomy, including the development of complications [6].

Herein, we report two cases of colectomy with severe PH, accompanied by marked edema of the colonic stoma after surgery.

Case report

Case 1

A 54-year-old man with severe primary PH was incidentally found to have a sigmoid colon cancer. Since the age of 45 years, the patient had received treatment for primary PH. The PH of the patient was classified as WHO–PH/NYHA III/IV and a cardiac catheter test showed a mean pulmonary arterial pressure (mPAP) as high as 53 mmHg. The patient experienced syncope at 53 years of age, when treatment with epoprostenol was initiated. But the PH was uncontrollable, regardless of the use of Bozentan, and Sildenafil. Lung transplantation was therefore indicated for the uncontrollable PH, and the patient underwent a screening colonoscopy as a preoperative examination.

Colonoscopy and computed tomography (CT) scans revealed severe stenosis of the sigmoid colon and the presence of a tumor; a pathological examination revealed a well-differentiated adenocarcinoma (Fig. 1a). CT also revealed splenomegaly, 10.5 cm in width. After the insertion of a self-expanding metallic stent and additional treatment using tadalafil to control PH, the patient underwent Hartmann's operation. Just before the operation, the mPAP improved with a decrease to 43–47 mmHg.

The level of ligation of the inferior mesenteric artery (IMA) was just below the origin of the left colic artery (LCA), and the inferior mesenteric vein (IMV) was dissected at the same level (Fig. 1b). The first branch of the sigmoid artery (SA) and vein (SV) was also dissected as shown in Fig. 1b.

The stoma became markedly edematous after surgery, and a few days later, the mucosa of the stoma became ulcerated (Fig. 2a). CT scans showed edema of the colon, from the sigmoid to the splenic flexure (Fig. 2b). The stoma gradually recovered from edema and ulceration, and the patient was discharged from hospital 36 days after the operation.

Case 2

A 62-year-old man was admitted to our hospital because of anemia and heart failure. A colonoscopy was performed to investigate the cause of the anemia, which revealed an upper rectal cancer. His past history included chronic obstructive pulmonary disease (COPD) from when he was 61 years of age. The PH of the patient was classified as WHO–PH/NYHA III/III and oxygen therapy was essential for the control of heart failure. A cardiac catheter test showed the mPAP to be 47 mmHg and the Cardiac Index (CI) to be

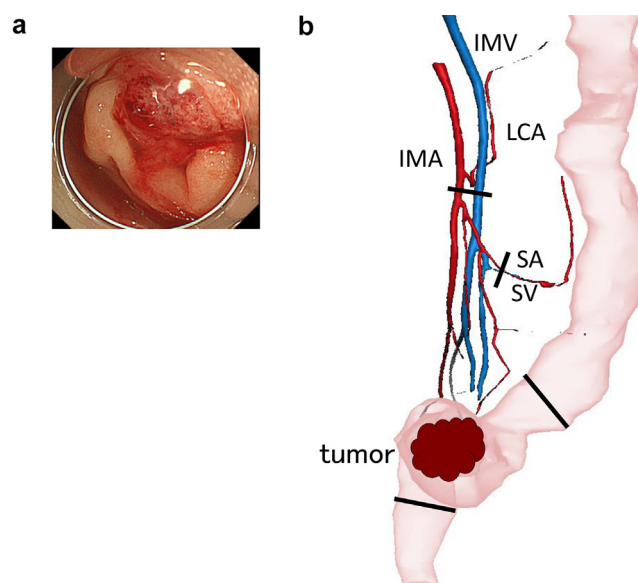


Figure 1 Preoperative colonoscopy and CT angiography of case 1; a: a colonoscopy showed an obstructive sigmoid colon cancer; b: CT angiography of case 1. The inferior mesenteric artery (IMA) was ligated just below the origin of the left colic artery (LCA), and the inferior mesenteric vein (IMV) was dissected at the same level. The first branches of the sigmoid artery (SA) and vein (SV) were also dissected.

2.2 L/min/m², a month prior to the operation, and the continuous drip infusion of epoprostenol, dobutamine, and milrinone, in addition to the use of tadalafil, macitentan, and spironolactone, was initiated. Although the mPAP was high (46 mmHg), the CI improved to 3.5 L/min/m² at the time of the operation.

Colonoscopy and CT scans revealed a type 2 tumor of the upper rectum, and a pathological examination showed a well-differentiated adenocarcinoma (Fig. 3a). The patient underwent Hartmann's operation. The level of ligation of the IMA was just below the origin of the common trunk of the LCA and SA; the IMV was dissected at the same level. The IMV was dilated, which implied the presence of portal hypertension. The first branch of the SA and the corresponding vein were preserved without dissection (Fig. 3b). Marked edema of the colonic stoma was also observed after the operation (Fig. 4). The mPAP increased to as high as 110 mmHg. The mucosa was not ulcerated in this case and swelling of the stoma gradually subsided with an improvement in the mPAP. The patient recovered from surgical stress on postoperative day 13 and was discharged from the hospital 128 days after an improvement of the PH.

Discussion

PH is defined as a mPAP > 25 mmHg. The prognosis of patients with severe PH with a mPAP > 40 mmHg is especially poor. The one-year mortality rate was estimated to be about 10% and the median survival was only 26 months in a PH case complicated with COPD [7,8]. Our two patients were categorized with severe PH, and a marked edema of the colonic stoma was observed after each colectomy.

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