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## Intraluminal implantation of rectal carcinoma successfully resected by endoscopy.

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## Abstract

A 55-year-old Japanese woman presented at our hospital complaining of hematochezia 4 months after surgery for a rectal carcinoma. A proctoscopy revealed 2 protuberant lesions in the rectum, 5 mm anally from the anastomotic suture line. The diagnosis of adenocarcinoma was confirmed by biopsy. It was considered that these lesions were caused by intraluminal implantation from the primary rectal carcinoma. The patient underwent an endoscopic resection for these recurrent lesions and has remained stable, with neither recurrence nor metastasis, in the 7 years since the resection. For rectal carcinoma, we propose early follow-up by proctoscopy, namely within 4 months after surgery.

**KEYWORDS:** intraluminal implantation, rectal carcinoma, endoscopic resection

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Case Report

## Intraluminal Implantation of Rectal Carcinoma Successfully Resected by Endoscopy

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A 55-year-old Japanese woman presented at our hospital complaining of hematochezia 4 months after surgery for a rectal carcinoma. A proctoscopy revealed 2 protuberant lesions in the rectum, 5 mm anally from the anastomotic suture line. The diagnosis of adenocarcinoma was confirmed by biopsy. It was considered that these lesions were caused by intraluminal implantation from the primary rectal carcinoma. The patient underwent an endoscopic resection for these recurrent lesions and has remained stable, with neither recurrence nor metastasis, in the 7 years since the resection. For rectal carcinoma, we propose early follow-up by proctoscopy, namely within 4 months after surgery.

**Key words:** intraluminal implantation, rectal carcinoma, endoscopic resection

To improve the prognosis and survival of patients with colorectal carcinoma, early detection of any recurrence is very important, especially in cases for which curative re-section is possible.

We report a case of an intraluminal implantation from a rectal carcinoma, found only 4 months after surgery, and the successful removal of the recurrent lesions by endoscopic resection. We also discuss intraluminal implantation of colorectal carcinoma, including its prevention and surveillance.

### Case Report

A 55-year-old Japanese woman underwent low anterior resection for a rectal carcinoma on June 24, 1993. The end-to-end anastomosis was made using a layer-to-

layer procedure without stapling devices. We did not perform intraoperative bowel irrigation. Preoperative examinations involving barium enema and colonoscopy showed a rectal tumor. However, there was no other polypoid lesion in the mucosa adjacent to the rectal tumor before surgery (Fig. 1). Gross findings of the resected specimen demonstrated a well-defined ulcerative lesion of the rectum measuring 4.4 × 4.0 cm. The length from the tumor to the distal margin was 5.1 cm.

The histological findings of the rectal carcinoma included: moderately differentiated adenocarcinoma invaded into the subserosa, no lymph-node metastasis, and no malignant cells to the distal margin of the resected specimen. After the operation, the patient was treated daily with 300 mg of fluorouracil orally as adjuvant chemotherapy.

On November 1, 1993, the patient presented at our hospital complaining of hematochezia. A proctoscopy revealed 2 protuberant lesions in the rectum, which were located 5 mm anally from the anastomotic line. One lesion was 10 mm in diameter, and the other was 2 mm (Fig.

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2). The diagnosis of adenocarcinoma was confirmed by biopsy. It was considered that these lesions were caused by intraluminal implantation from the primary rectal carcinoma. The laboratory findings were unremarkable. Tumor markers were also normal (carcinoembryonic antigen: 1.0 ng/ml).

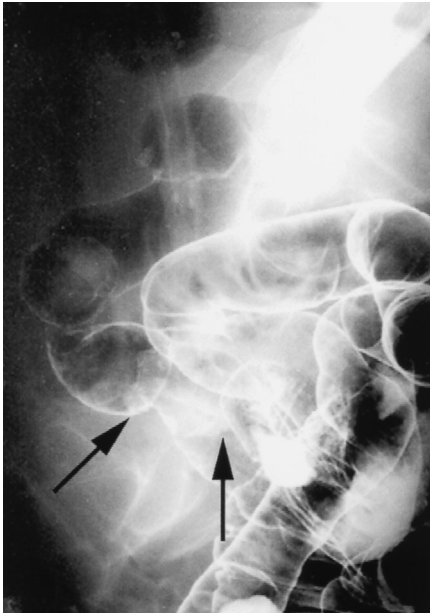
The patient underwent a flexible fiberoptic endoscopic resection for these recurrent lesions. Histologic findings showed that these lesions were moderately differentiated

adenocarcinoma of the same type as the primary tumor, and suggested that these recurrent lesions were completely resected (Fig. 3).

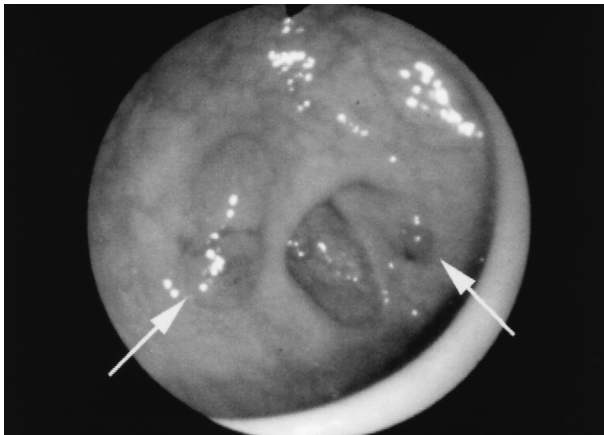
The patient is now stable, having experienced neither recurrence nor metastasis 7 years after the endoscopic resection.

## Discussion

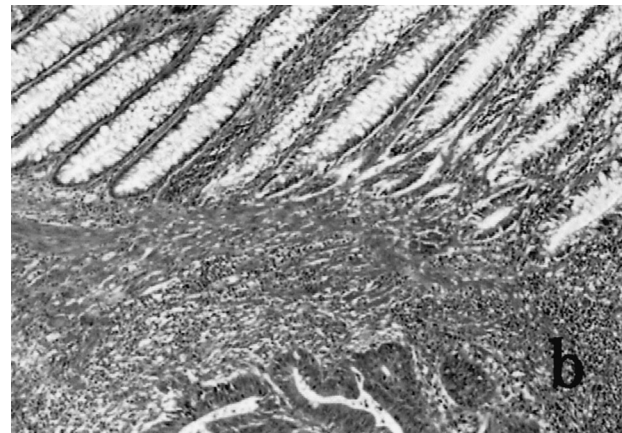
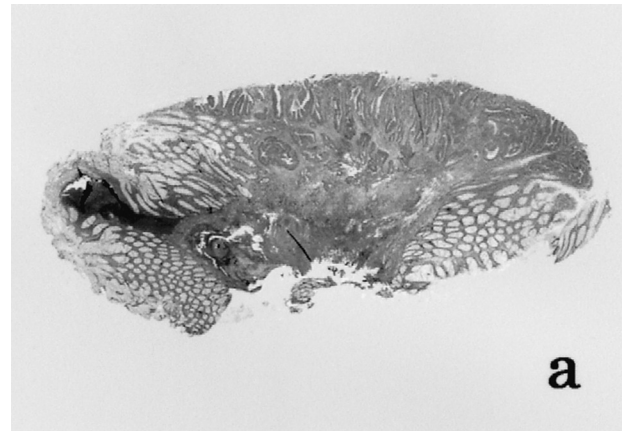
Colorectal carcinoma can spread in many ways: by direct extension, peritoneal seeding, lymphatic spreading, hematogenous spreading, and intraluminal implantation. Several reports have observed that exfoliated malignant cells are capable of implanting themselves in the raw bowel surface. Among the sites in which intraluminal implantation occurs, normal mucosa is uncommon. Anastomotic suture lines, especially those that have been



**Fig. 1** Preoperative examinations of barium enema showed a rectal tumor (arrows). There was no other lesion in the rectum.



**Fig. 2** Proctoscopy revealed 2 protuberant lesions in the rectum apart from the anastomotic line (arrows).



**Fig. 3** Histologic findings of the larger lesion revealed that the lesion invaded into the submucosa slightly, and was completely resected (HE: a, low power field; b, middle power field).

stapled, and rectal stumps resulting from Hartmann's procedure are common sites for intraluminal implantation to occur. Hemorrhoidectomy wounds or fistula in ano have also been reported [1, 2]. In the present case, as both of the lesions were found 5 mm anally from the anastomotic line, the implantation metastasis might have occurred in mucosa injured by an operating procedure such as bowel clamping.

To prevent intraluminal implantation, several methods have been reported: intra-operative colorectal irrigation with cytotoxic agents such as povidone-iodine or formalin, a no-touch isolation technique, early application of bowel ligature, and adjuvant radio-and chemotherapy [3-5]. In the present case, we tried to minimize tumor manipulation and performed adjuvant chemotherapy, but did not perform intra-operative bowel irrigation or early application of bowel ligature.

The effectiveness of colonoscopic surveillance of intraluminal local recurrence has been reported. But the benefit provided by colonoscopy remains unproven, and the best time for examination has not been determined [6]. In the present case, the intraluminal implantation was found only 4 months after surgery. A case of intraluminal implantation that had developed only 3 months after surgery has also reported [7]. Pietra *et al.* recommended an intense follow-up plan, at least in patients with rectal carcinoma [8]. Their follow-up plan after surgery involved examinations every 3 months during the first 2 years, at 6 months for the next 3 years,

and once a year thereafter. However, considering that the screening is not cost-effective, colonoscopy is not appropriate for intense examination. Therefore, we propose that anterior resection for rectal carcinoma should be followed up by proctoscopy and that this occur early, within 4 months after surgery.

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