

mFOLFOX6 Chemotherapy after Resection of Anal Canal Mucinous Adenocarcinoma

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Key Words

Anal carcinoma · Anal canal mucinous adenocarcinoma · mFOLFOX6 chemotherapy

Abstract

Because of their rarity, there are no clear guidelines for the treatment of anal carcinomas; such tumors are normally subjected to the same modalities as recommended for rectal cancer. We report a patient with anal canal mucinous adenocarcinoma, with metastases in the pararectal and right inguinal lymph nodes, who was treated with abdominoperineal resection followed by mFOLFOX6 chemotherapy for 6 months (12 cycles). The patient has remained recurrence-free thus far, approximately 2 years since the surgery. As the optimal treatments for anal carcinomas have not been fully elucidated, we present this case to highlight a possible course of action for such patients that appears to be effective and promising.

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Introduction

Anal carcinomas are relatively rare malignancies, representing less than 2.5% of all gastrointestinal carcinomas [1]. Due to a relatively limited number of patients in Japan, Europe, and the USA, no specialized therapies have been established for anal canal adenocarcinomas, which are generally treated with the same modalities recommended for rectal cancers [2, 3].

Furthermore, the efficacy of postoperative adjuvant chemotherapy for anal canal adenocarcinomas has not been fully evaluated.

Herein, we report our experience with a patient who underwent abdominoperineal resection of an anal canal mucinous adenocarcinoma and received mFOLFOX6 chemotherapy for 6 months, in accordance with the treatment recommendations for colon cancer. The patient has since maintained a recurrence-free status for approximately 2 years. Discussion is also provided based on the literature.

Case Report

The patient is a 70-year-old man with a medical history of hypertension and diabetes, but no notable family history. He had been experiencing bleeding during bowel movements for approximately 2 months. He later noticed a mass in his anal area and visited a nearby clinic. Upon suspicion of anal cancer, the patient was referred to our department of surgery for detailed examination and treatment. Lower gastrointestinal endoscopy identified an elevated lesion centered on Herrmann's line in the anus (fig. 1). A biopsy of the lesion led to the diagnosis of mucinous adenocarcinoma. Visual inspection of the anus confirmed the absence of extra-anal tumor protrusion, anal fistula, or pagetoid spread. Pelvic computed tomography (CT) (fig. 2) revealed mucosal thickening with a contrast effect in the rectum, as well as swelling of the right inguinal lymph node and pararectal lymph nodes. There was no distal metastasis in the lung, liver, or any other organ. Pelvic magnetic resonance imaging (fig. 3) also confirmed wall thickening with gadolinium enhancement in the rectum (Rb-P), which was consistent with the pelvic CT finding. Abdominoperineal rectal excision was performed along with bilateral lymph node dissection and bilateral inguinal lymph node dissection. The tumor infiltrated the muscularis propria, and metastasis was confirmed in the pararectal lymph nodes as well as the right inguinal lymph node. Due to inguinal lymph node metastasis and an intraoperative finding of suspected remnant carcinoma, a Cur B excision was determined to be necessary [4]. Macroscopic and pathological findings confirmed the diagnosis of rectal-type adenocarcinoma of the anal canal (mucinous adenocarcinoma). No increases in the levels of tumor markers such as carcinoembryonic antigen and cancer antigen 19-9 were observed relative to preoperative levels. No *RAS* gene mutation was identified.

Because our patient had advanced anal canal adenocarcinoma with multiple metastases to the lymph nodes, postoperative adjuvant therapy was scheduled according to the strategy recommended for rectal cancers with a high risk of recurrence; this regimen is in turn based on the postoperative adjuvant chemotherapy applied for colon cancer treatment. As postoperative positron emission tomography/CT examinations confirmed the absence of abnormal findings such as remnant tumors, mFOLFOX6 therapy was selected. The chemotherapy was administered uneventfully for 6 months (12 cycles). As of this writing, approximately 2 years since the surgery, the patient has no signs of recurrence. Periodical follow-up examinations will continue into the future.

Discussion

Postoperative adjuvant chemotherapy has been reported to be effective for gastrointestinal carcinomas, such as esophageal carcinoma [5] and gastric cancer [6], as well as various other types of cancers including breast cancer [7]. In colon cancer [8, 9], the efficacy of this

method has been particularly demonstrated in patients with stage III cancer and lymph node metastases; however, its applicability for rectal cancer is still debated [10]. To assess the efficacy of postoperative adjuvant chemotherapy for rectal cancer, it is important to understand the differences in approaches to rectal cancer therapy in Japan compared to Europe and the USA. Preoperative chemoradiotherapy, which is performed in Europe and the USA [11], is not common in Japan. There is also a discrepancy in the approach to lymph node dissection and the range of such dissection (including the definition of lateral lymph node dissection). Differences have also been noted in survival rates after surgery alone. Moreover, the description of the rectum is different in Japanese and European/American anatomical maps. For example, the rectosigmoid (Rs) [4] is a part of the rectum in Japanese maps but is a component of the sigmoid colon in Europe/American maps. A segment up to Ra [4], as it is referred to in Japan, may be considered a part of the colon in Europe and the USA. Under these circumstances, rectal cancers in Japan cannot be directly compared to those in Europe or the USA.

For rectal cancers at a high risk of postoperative recurrence, therapeutic regimens normally used for colon cancer are employed based on the current recommendations of postoperative adjuvant chemotherapies [12]. For cancer of the anal canal, however, a standard regimen has yet to be established in this regard. In postoperative adjuvant chemotherapy for rectal cancer, Tegafur-uracil [13] and S1 are considered therapeutic options, particularly in Japan. However, our case was not a Cur A (R0) surgery [4]; hence, there are no strict postoperative adjuvant therapy directives. As we considered the patient to have a high risk of recurrence, we selected mFOLFOX6 as an oxaliplatin-based regimen based on current Japanese guidelines as described above. Use of a molecular targeted agent was not considered because the efficacies of such therapies have not been demonstrated when attempted postoperatively with bevacizumab [14] and anti-EGFR agents [15] for colorectal cancers.

The efficacy of postoperative adjuvant chemotherapy for anal canal cancer has not been fully evaluated due to a limited number of patients. Although no definitive conclusion can be drawn given the short period of postoperative follow-up, 6 months of mFOLFOX6 therapy was shown to be effective in reducing the risk of recurrence of anal canal mucinous adenocarcinoma in our case. Accumulation of further case studies is expected to help further evaluate the efficacy of postoperative adjuvant therapy for anal canal adenocarcinomas.

Statement of Ethics

Informed consent was obtained from the patient for publishing this case and accompanying images. The study protocol was approved by our institutional review board.

Disclosure Statement

The authors declare no conflicts of interest.

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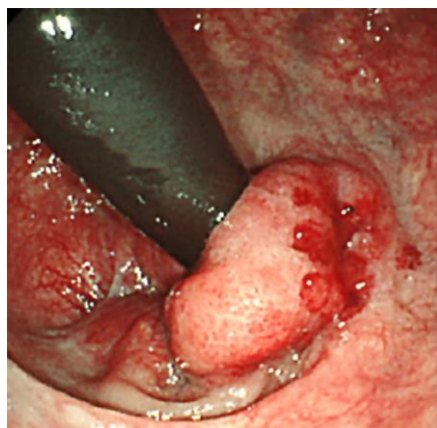


Fig. 1. Anal canal endoscopy (reverse observation). Elevated lesion is observed on Herrmann's line of the anus.

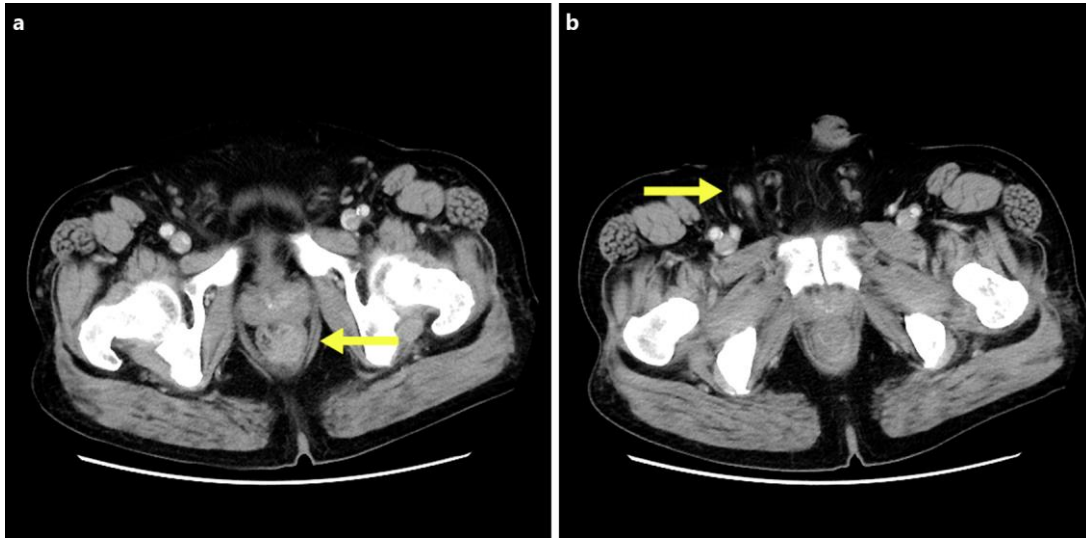


Fig. 2. Pelvic computer tomography. **a** Mucosal thickening with contrast effect is observed in the rectum (arrow). **b** Swelling of the right inguinal lymph node is noted (arrow).

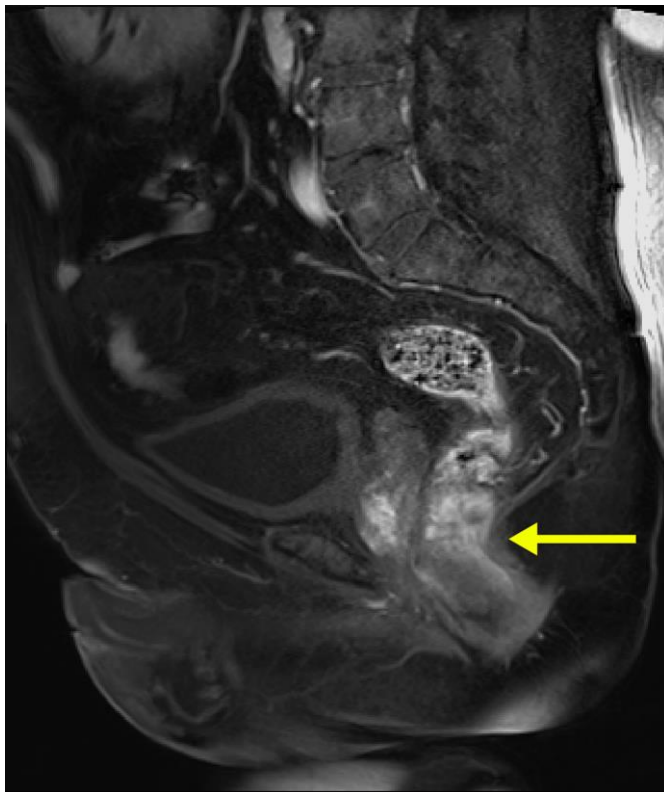


Fig. 3. Pelvic magnetic resonance imaging (sagittal plane). Wall thickening with gadolinium enhancement is seen in the rectum (Rb-P). No infiltration beyond the outer membrane of the rectum is observed.