Case report

An elderly patient with marginally unresectable rectal cancer obtained pathological complete response by the treatment with mFOLFOX6

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Abstract
We herein report the successful case resulted to be obtained pathological complete response by the preoperative chemotherapy. Eighty two year-old female patient visited to our clinic with abdominal pain, hematochezia and anorexia. CT scan revealed the primary tumor existed occupying the pelvic cavity and suspiciously invaded to the sacrum. Several enlarged nodes were notified however there was no distant metastasis. She was diagnosed as cStage IIIb rectal cancer. Although radical resection with sacrum below S4 could achieve R0 resection, her rectal cancer was considered to be difficult to resect. Chemotherapy after stoma creation was scheduled with written informed consent. After stoma creation standard dose of mFOLFOX6 was initiated. Chemotherapy continued with 20% dose reduction due to toxicity. After 11 courses, we judged that the response of mFOLFOX6 for her rectal cancer made R0 resection possible without extended resection. Then she underwent low anterior resection with D2 (prx D3) lymphadenectomy. Resected specimen showed that microscopically Ul-IV ulcer that the ulcer bed was replaced with fibrotic tissue and the surface layer covered with regenerated epithelium was found at the primary site. Any cancer cells were not seen in the resected bowel. As for the resected lymph nodes, there were necrotic tissues replaced with xanthoma cells. No cancer cells were found as well. Pathological response of chemotherapy was judged as complete response. Twenty months passed after surgery, there is not any symptom for relapse while undergoing scheduled follow-up observation without postoperative adjuvant chemotherapy because she did not desire adjuvant therapy.

Keywords: marginally unresectable rectal cancer, systemic chemotherapy, pathological complete response

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Introduction
In Japan, an oxaliplatin based chemotherapy has been spread widely for advanced colorectal cancer especially as an initiation chemotherapy. Since general surgeons often perform chemotherapy in Japan, they are quite accustomed to the use of oxaliplatin. Therefore Japanese oncologists including gastrointestinal and general surgeons can often perform chemotherapy for elderly patients with oxaliplatin based regimens1). Oxaliplatin based chemotherapy including FOLFOX and Capeox has high response rate compared to single agent with fluoropyrimidine2). Therefore it is often performed with or without molecular targeted drugs for the unresectable or marginally resectable colorectal cancer to expect that it would be shrunk to be resectable3-6).

In the present case, we performed chemotherapy with mFOLFOX6 for the locally advanced rectal cancer that was judged to be marginally resectable due to suspiciously invasion to the sacrum, although the age of the patient was over eighty. We herein report the successful case resulted to be obtained pathological complete response (CR) by the preoperative chemotherapy.

Case report

Eithy two year-old female patient visited to our clinic with abdominal pain, hematochezia and anorexia on April 2015. She had been performed cholecystectomy, and her topical medicines were aspirin and ticlopidine for cerebral infarction. Colonoscopy was scheduled however she admitted in our hospital because of bowel obstruction induced by the preparation for colonoscopy. Colonoscopy showed a circumferential tumor occupied at the upper and lower rectum. The pathological diagnosis was well differentiated adenocarcinoma. By digital examination, the mobility of tumor was poor and then
her rectal tumor was thought to be fixed at the pelvis. CT scan was performed for the determination of clinical stage. The primary tumor existed occupying the pelvic cavity and suspiciously at least invaded to the sacral periostin. Several enlarged nodes were notified however there was no distant metastasis (Figure 1a, b). She was diagnosed as cStage IIIb rectal cancer (Ra Rb, Circ, cT4b, cN2, cM0) based on Japanese Classification of Colorectal Carcinoma. Although radical resection with sacrum below S4 should be need for R0 resection because of the reserve for radial margin, her rectal cancer was considered to be difficult to resect based on her age and ECOG performance status (PS) judged as PS3. Additionally, her activities of daily living (ADL) assessment was getting worse after admission. Chemotherapy after stoma creation was scheduled with written informed consent. After stoma creation her PS and ADL improved then standard dose of mFOLFOX6 was initiated. Although

Figure 1  CT scan at first visit. Horizontal view (a). The rectal tumor was attached to sacrum (white arrow) with enlarged node (arrow head). Sagittal view (b) showed a long attachment of tumor and scrun.
grade 3 toxicities of neutropenia and stomatitis were observed after first course, chemotherapy continued with 20% dose reduction. Five courses after initiation, the thickening of rectal wall was markedly improved and lymph nodes were shrunk. After additional 6 courses, CT scan showed that the rectal tumor and lymph nodes were difficult to be pointed out (Figure 2). However barium enema showed rectal stenosis (Figure 3) and it was not sufficient to evaluate the effect of chemotherapy on rectal tumor by colonoscopy because of stenosis. We judged that the response of mFOLFOX6 for her rectal cancer made R0 resection possible without extended resection. Then she underwent low anterior resection with D2 (prx D3) lymphadenectomy. Postoperative course was al-

Figure 2  CT scan after 11 cycles of mFOLFOX6. The rectal tumor and nodes (arrow head) were markedly shrunk showing a gap between tumor and sacrum (white arrow).

Figure 3  Barium enema after 11 cycles of mFOLFOX6. Barium enema showed a rectal stenosis without tumor shadow.
most uneventful except for anastomotic bleeding judged as grade 1 according to Clavien-Dindo classification\(^8\). Resected specimen showed that the part of tumor formed a depressed surface (Figure 4). Microscopically Ul-IV ulcer that the ulcer bed was replaced with fibrotic tissue and the surface layer covered with regenerated epithelium was found at the primary site. Any cancer cells were not seen in the resected bowel (Figure 5a). As for the resected lymph nodes, there were necrotic tissues replaced with xanthoma cells (Figure 5b). No cancer cells were found as well. Pathological response of chemotherapy was judged as pathological CR. She discharged on the postoperative day18. Twenty months passed after surgery, there is not any symptom for relapse while undergoing scheduled follow-up observation without postoperative adjuvant chemotherapy because she did not desire adjuvant therapy.

**Discussion**

Different therapeutic strategies were existed for locally advanced rectal cancer in between Japan and Western countries. While the neoadjuvant chemoradiotherapy before surgery is the standard in Western countries, surgical resection has been performed without neoadjuvant radiotherapy or chemoradiotherapy in Japan. However, the neoadjuvant therapy for T3 and T4 rectal cancer has been considered to obtain the negative circumferential margin because the circumferential margin is the important marker for the intrapelvic recurrence\(^9\),\(^10\).

In the present case, preoperative imaging using CT showed her rectal tumor suspiciously invaded to sacrum judged as clinical T4b. Since the invasion front of colorectal cancer often involves inflammation, it is not

![Figure 4](image1.png)

**Figure 4** Resected specimen. The part of tumor formed a depressed surface.

![Figure 5](image2.png)

**Figure 5** Microscopic examination. The ulcer bed was replaced with fibrotic tissue and the surface layer covered with regenerated epithelium (a). As for the resected lymph nodes, there were necrotic tissues replaced with xanthoma cells (b). Any cancer cells were not seen in the specimen.
easy to diagnose as T4b rectal cancer. For R0 resection, it was needed low anterior resection accompanied with partial sacral resection however it was thought to be too invasive to be tolerable for surgery under considering her age and PS. Then chemotherapy with FOLFOX was initiated and shrinkage of rectal tumor and disappearance of enlarged nodes were obtained after some cycles with 80% dose. Generally, additional molecular targeted drugs increase anti-tumor response however she could not be added bevacizumab due to her history of cerebral infarction. Because of judgement that can be R0 resection without sacral resection, she underwent low anterior resection. Ultimately she obtained pathological complete response and there were some similar reports in the literature. Since the oxaliplatin based chemotherapy seems to be tolerable for elderly patients, it should be tried oxaliplatin based chemotherapy for colorectal cancer that needs anticancer drug treatment even elderly patients over eighty years old.

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