

Safe Distal Resection Margin in Patients With T3 Mid and Distal Rectal Cancer Who Underwent a Sphincter-Saving Resection Without Preoperative Radiotherapy

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The Korean Clinical Practice Guideline for Colon and Rectal Cancer v.1.0 (2012) recommends preoperative chemoradiation as an initial treatment for patients with clinical stage II and III (cT3+ or cN+) rectal cancer [1]. The National Comprehensive Cancer Network guideline v.4. (2013) for rectal cancer also recommends preoperative chemoradiation as an initial treatment for T3N0 or T_{any}N1-2 rectal cancer. Preoperative chemoradiotherapy significantly decreases the local recurrence rate after a total mesorectal excision (TME) curative resection for rectal cancer, but the functional disability of the anal sphincter after radiation therapy cannot be neglected. In Japan, a major trend in the treatment of rectal cancer has been the radical low anterior resection including lateral node dissection without adjuvant radiotherapy.

The Study Group of the Japanese Society for Cancer of the Colon and Rectum reported on the Clinical Significance of the Mesorectal Extension of Rectal Cancer that the distance of mesorectal extension (DME), which was measured with histology after fixation in 20% formalin, was a significant prognostic factor for recurrence-free survival (cut off point, 4 mm) [2]. The multivariate Cox regression analysis showed that the recurrence-free five-year survival rate was significantly higher in patients with a DME ≤4 mm than in patients with DME >4 mm in stage IIA and IIIA cancer, but not in stage IIIC cancer (P = 0.00015, P = 0.0001, and P = 0.2697, respectively). The reports suggested that local recurrences were increased by the status of cancer-positive lymph

nodes even in the same category of T3 cancer in patients without radiation therapy.

The distal resection margin (DRM) means the length of the tumor-free normal mucosa and rectal wall. Han et al. [3] published the manuscript, 'Association between a close distal resection margin and recurrence after sphincter-saving resections for T3 mid- or low-rectal cancer without radiotherapy.' With retrospective data, they described the 5-year local recurrence rates as 6.69% in patient with DRM ≤10 mm and 9.52% in patients with DRM >10 mm, respectively (DRM cut off point, 1 cm; P = 0.3981). However, they gave no descriptions of cancer-positive lymph nodes in the groups with stage IIA, IIIB, and IIIC cancer. The local recurrence may be influenced not only by DRM but also by the status of lymph nodes. A Norwegian national study recommended a DRM of >10 mm for rectal cancer patients treated without radiotherapy [4]. The 5-year local recurrence rate was 14.5% for patients with DRM of 0–10 mm compared to 8.66% for patients with DRM >11 mm (P < 0.001). The proportions of T3 cancer were 48% and 63%, respectively, in those two groups. Current Japanese guidelines state a 2-cm DRM is needed for rectal cancer with a distal edge below the peritoneal reflection. Intramural and extramural distal spread prevents local control and promotes systemic metastasis. If the specimen is not pinned, the length of the DRM can shrink by 50% in a nonradiated rectum after formalin fixation. A gross determination of a safe distal resection margin is difficult in the operating room. The frozen-section result for the DRM may be falsely negative in 12% of all cases.

A systemic review supported the practice of sphincter preservation in selected settings of close distal resection margins (≤1 cm) after mesorectal excision for distal rectal cancer [5]. A further subgroup study suggested that margins as close as ≤5 mm, if they were indeed negative, might be acceptable. However, the importance of patient and tumor selection for this approach must be emphasized.

In distal rectal cancer, the mesorectal fascia does not extend beyond the puborectalis level, and the anal sphincter is another barrier for safe distal resection margins. Local recurrence may de-

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velop with uninvolved margins related to lymphatic spread from the DRM. In preoperative radiation cases, a distal clearance margin of 1 cm or less may be a safe distance in patients who undergo lower rectum cancer surgery [6].

We would like to conclude with the following remark. Although reduction of the DRM to less than 10 mm does not increase local recurrences in many low-risk patients, a DRM >10 mm is safe in cases of rectal cancer with lymphovascular invasion, perineural invasion and multiple lymph-node metastases.

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