Decreasing Anastomotic Leakage Rate Following Preoperative Radiotherapy and Low Anterior Resection for Rectal Cancer: Reply

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We are grateful to Dr. Hottenrott for his comments. In his letter he focused on the indications for preoperative radiotherapy of locally advanced rectal cancer, the value of defunctioning the stoma, and the influence of total mesorectal excision (TME) on the leakage rate. The meta-analyses [1] indicated that preoperative radiotherapy at a biological equivalent dose (BED) ≥ 30 Gy could significantly reduce the local recurrence rate. As reported in the Dutch TME trial [2], short-course preoperative radiotherapy could reduce the risk of local recurrence in rectal cancer patients who underwent a standardized TME. In our retrospective research [3], the adoption of preoperative radiotherapy was based on prestaging by endorectal ultrasonography or magnetic resonance imaging. Only T3+ or any T/N+ cases were irradiated. The BED of a 30 Gy/10f regimen was 36 Gy.

The TME performed was the standardized technique for mid-low rectal cancer in our unit. Comparable to other leakage risk factors, TME itself is a risk factor that reduces the blood supply to the rectum stump [4]. However, it is difficult to conduct a trial to compare TME and conventional surgery because non-TME surgery would be ethically unacceptable.

Although the defunctioning stoma may reduce the anastomotic leakage and contribute to faster healing, the results from several randomized controlled trials (RCTs) of preoperative radiotherapy were unable to define whether a protective stoma could reduce the leakage rate. As reported by Marijnen et al. [5], the percentage of low anterior resection patients who exhibited clinical leakage was not statistically

different for preirradiated and non-preirradiated patients (11 vs. 12%, $P > 0.05$). However, the proportion of protective stoma in the irradiation group or the control group was not comparable in this RCT (60 vs. 53%, $P = 0.05$) [2, 5]. Second, most surgeons are prone to allow more protective stomas in irradiated patients than in nonirradiated patients [6]. Moreover, in a recent RCT ($n = 234$, 79% preirradiated, 25 Gy/5f), Matthiessen et al. [7] proved that a protective stoma could decrease the leakage rate. It seems evident that a protective stoma is indispensable in patients who undergo preoperative radiotherapy and low anterior resection.

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