Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.
**eAppendix. Trial protocol modification in ClinicalTrials.gov**

I cross-examined all modifications in the trial registry and our trial records, and wish to make the following clarifications: 1) Tumor size for eligibility criteria has never been modified. We did not specify the tumor size requirement in the first version (July 11, 2013) and added the specification (<6 cm diameter) in the version (November 5, 2013). DSMB was not involved in this modification. 2) Primary endpoint was a 5-year OS rate in the first version (July 11, 2013) and changed to a 3-year DFS rate in the version (October 7, 2013). This change was made based on the recommendation of the DSMB and prior to the enrollment of the first patient. 3) Definitions of secondary endpoints were added to the registry upon a subsequent amendment. Indeed, several secondary outcomes in the first version (i.e., negative CRM/DRM, length of DRM, and number of retrieved lymph nodes) were placed under an umbrella concept of “pathologic outcomes” in a subsequent version (September 26, 2021). DSMB was not involved in this modification.

| Date            | Section                  | Description                                                                 |
|-----------------|--------------------------|----------------------------------------------------------------------------|
| July 11, 2013   | LASRE registration       |                                                                            |
| July 14, 2013   | Inclusion Criteria       | Replacing “T3” with “T3-4”                                                |
| October 7, 2013 | Title                    | Adding “open-label”                                                        |
| Sponsor/Collaborators |                     | Adding study sites:  
Sixth Affiliated Hospital Sun Yat-sen University, Peking Union Medical College Hospital, Beijing Cancer Hospital, Liaoning Tumor Hospital & Institute, Union Hospital Huazhong University of Science and Technology, West China Hospital, The Second Affiliated Hospital of Fujian Medical University, The First Affiliated Hospital of Xiamen University, Zhangzhou Affiliated Hospital of Fujian Medical University, Longyan Affiliated Hospital of Fujian Medical University  |
| Primary Outcome Measures | Replacing “overall survival [Time Frame: 5 years]” with “disease-free survival [Time Frame: 3 years]” |
| Secondary Outcome Measures | Replacing “disease-free survival [Time Frame: 5 years]” with “overall survival [Time Frame: 3 and 5 years]” |
| Inclusion Criteria | Changing “7 cm from the anal verge” to “within 5 cm from the dentate line” |
| October 9, 2013 | Sponsor/Collaborators   | Adding study site:  
Shengjing Hospital  |
| November 5, 2013 | Sponsor/Collaborators   | Adding study sites:  
Second Affiliated Hospital, School of Medicine, Zhejiang University  |
| Inclusion Criteria | Replacing “T3-4, N0 or Tany, N1-2” with “T3-4a, N0 or T1-4a, N1-2”  |
| |
| August 16, 2015 | Sponsor/Collaborators   | Adding study sites:  
Wuhan Union Hospital, Fudan University Shanghai  |

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| September 26, 2021 | Primary Outcome Measures | Adding definition for disease-free survival [Time Frame: 3 years]: Disease-free survival is defined as the time from date of surgery to the date of rectal cancer recurrence or metastasis or cancer-related death (locoregional or distant recurrence). |
|-------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | Secondary Outcome Measures | Placing individual pathologic outcomes, including distal resection margin [Time Frame: 1 week post-operatively], circumferential margin [Time Frame: 1 week post-operatively], and proximal resection margin [Time Frame: 1 week post-operatively], under an umbrella scheme of Pathologic outcomes [Time Frame: 1 week post-operatively] Adding definitions; Pathologic outcomes are defined as TME quality, negative CRM and negative DRM, length of proximal resection margin (PRM), length of DRM, and the number of retrieved lymph nodes. The TME quality was graded based on the criteria proposed by Nagtegaal et al. as complete, nearly complete, or incomplete. Positive resection margin, including circumferential resection margin (CRM) and distal resection margin (DRM), was defined as the presence of cancer cells within 1 mm from the cut edge. Adding definition for 30-day postoperative complications [Time Frame: 1 month within operatively]: Thirty-day postoperative complications included any complications occurring within 30 days after surgery. Postoperative complications were graded according to the Clavien-Dindo classification. Severe complications were defined as Clavien-Dindo III-V. |
|                   |                          | Adding definition for 30-day postoperative mortality [Time Frame: 30 days post-operatively]: Thirty-day operative mortality is defined as deaths occurring from any cause during the first 30 postoperative days. |
|                   |                          | Adding definition for locoregional recurrence rate [Time Frame: 3 and 5 years post-operatively]: Locoregional recurrence was defined as the presence of any anastomotic, pelvic or perineal tumour documented by clinical and/or pathological examination. Placing distal resection margin [Time Frame: 1 week post-operatively] under Pathologic outcomes |
|                   |                          | Placing circumferential margin [Time Frame: 1 week post-operatively] under Pathologic outcomes |
| | Placing proximal resection margin [Time Frame: 1 week post operatively] under Pathologic outcomes |
## eTable 1. Eligibility Criteria for the Enrollment of the Patients

| Inclusion criteria                                                                 |
|------------------------------------------------------------------------------------|
| Aged 18-75 years                                                                    |
| Pathological diagnosis of rectal adenocarcinoma (including highly and moderately    |
| differentiated tubular adenocarcinoma, papillary adenocarcinoma, poorly differentiated|
| tubular adenocarcinoma, mucinous adenocarcinoma, and signet-ring cell carcinoma)    |
| The lower margin of the tumor is < 5 cm from the dentate line at the time of initial |
| diagnosis by rigid proctoscopy                                                      |
| cT1-3N0-2M0 or cT4aN0-2M0 adenocarcinoma after neoadjuvant chemoradiotherapy.       |
| Patients with pelvic lateral lymph nodes are ineligible                             |
| Primary tumor < 6 cm in size                                                        |
| No other concurrent primary cancers                                                  |
| Adequate function of main organs, allowing surgical treatment                      |
| Patients and their family members can understand the study plan, are willing to      |
| participate, and agree to give written informed consent                             |

| Exclusion criteria                                                                 |
|-----------------------------------------------------------------------------------|
| Aged < 18 or > 75 years;                                                           |
| Concurrent or previous malignancies within five years                               |
| Need for emergency surgery due to intestinal obstruction, intestinal perforation,  |
| intestinal hemorrhage, etc.                                                       |
| Previous history of colorectal surgery that might affect the reconstruction of the |
| digestive tract                                                                    |
| Need to remove other organs in addition to the rectum                               |
| ASA classification IV or V                                                         |
| Current pregnancy or lactation:                                                    |
| • Women of childbearing age with a positive pregnancy test at baseline or who have  |
| not taken a pregnancy test; postmenopausal women must be at least 12 months         |
| postmenopausal                                                                      |
| • Sexually active men and women (of reproductive age) who are unwilling to take     |
| contraceptive measures during the study period                                     |
| Severe mental illness                                                               |
| Inability to tolerate surgery due to severe emphysema, interstitial pneumonia,      |
| ischemic heart disease, etc.                                                       |
| Continuous systemic steroid therapy within the last month                           |
| Contraindications to laparoscopic surgery                                          |
| Patients and their family members cannot understand the conditions and objectives    |
| of this study                                                                      |
**eTable 2. Pathologic Outcomes in the Subgroup Analysis Based on Disease Stage in the mITT Population**

| Characteristics               | Laparoscopic Surgery (n = 685) | Open Surgery (n = 354) | Difference | 95% CI         | \( P \) Value |
|-------------------------------|-------------------------------|------------------------|------------|----------------|---------------|
| TME quality No. (%)           |                               |                        |            |                |               |
| Stage I disease, No. (%) a    |                               |                        |            |                |               |
| Complete                      | 177 (86.8)                    | 85 (86.7)              | 0.0        | -7.5 to 9.1    | .53           |
| Nearly complete               | 21 (10.3)                     | 12 (12.2)              | -2.0       | -10.6 to 5.1   |               |
| Incomplete                    | 6 (2.9)                       | 1 (1.0)                | 1.9        | -2.9 to 5.4    |               |
| Stage II/III disease, No. (%) b |                               |                        |            |                |               |
| Complete                      | 344 (84.5)                    | 181 (85.4)             | -0.9       | -6.5 to 5.4    | .32           |
| Nearly complete               | 53 (13.0)                     | 22 (10.4)              | 2.6        | -3.0 to 7.6    |               |
| Incomplete                    | 10 (2.5)                      | 9 (4.2)                | -1.8       | -5.6 to 1.0    |               |
| Length of PRM, median, (IQR)  |                               |                        |            |                |               |
| Stage I disease               | 115 (86–150)                  | 118 (95–150)           | -3.0       | -20.2 to 14.2  | .09           |
| Stage II/III disease          | 128 (100–154)                 | 135 (100–165)          | -7.0       | -17.8 to 3.8   | .09           |
| Length of DRM, median, (IQR)  |                               |                        |            |                |               |
| Stage I disease               | 20 (11–30)                    | 20 (10–27)             | 0.0        | -2.5 to 2.5    | .19           |
| Stage II/III disease          | 21 (15–35)                    | 25 (17–35)             | -3.0       | -6.2 to 0.2    | .47           |
| Negative CRMs, No. (%)        |                               |                        |            |                |               |
| Stage I disease               | 248 (98.4)                    | 128 (100.0)            | -1.6       | -4.0 to 1.5    | .37           |
| Stage II/III disease          | 425 (98.2)                    | 225 (99.6)             | -1.4       | -3.2 to 0.8    | .26           |
| Negative DRMs, No. (%)        |                               |                        |            |                |               |
| Stage I disease               | 252 (100.0)                   | 128 (100.0)            | 0.0        | -1.5 to 2.9    | NA            |
| Stage II/III disease          | 429 (99.1)                    | 226 (100.0)            | -0.9       | -2.4 to 0.8    | .36           |
| Retrieved lymph nodes, median, (IQR) |                               |                        |            |                |               |
| Stage I disease               | 15 (12–19)                    | 14.5 (11–19)           | 1.0        | -0.8 to 2.8    | .68           |
| Stage II/III disease          | 12 (8–16)                     | 12 (6–15)              | 0.0        | -1.0 to 1.0    | .60           |
| Pathologic T stage, No. (%)   |                               |                        |            |                |               |
| T0/ Tis                       | 99 (14.5)                     | 41 (11.6)              | 2.8        | -1.6 to 6.9    | .87           |
| T1                            | 66 (9.6)                      | 34 (9.6)               | 0.0        | -4.0 to 3.6    |               |
| T2                            | 243 (35.5)                    | 131 (37.0)             | -1.6       | -7.8 to 4.5    |               |
| T3                            | 238 (34.7)                    | 129 (36.4)             | -1.7       | -7.9 to 4.3    |               |
| T4a                           | 36 (5.3)                      | 17 (4.8)               | 0.4        | -2.7 to 3.1    |               |
| T4b                           | 3 (0.4)                       | 2 (0.6)                | -0.1       | -1.6 to 0.8    |               |
eTable 2. Pathologic Outcomes in the Subgroup Analysis Based on Disease Stage in the mITT Population (continued)

| Pathologic N stage, No. (%) |          |          |          |
|-----------------------------|----------|----------|----------|
| N0                          | 511 (74.6) | 266 (75.1) | -0.7     |
| N1a                         | 70 (10.2)  | 32 (9.0)  | 1.2      |
| N1b                         | 58 (8.5)   | 31 (8.8)  | -0.3     |
| N1c                         | 7 (1.0)    | 3 (0.8)   | 0.2      |
| N2a                         | 28 (4.1)   | 12 (3.4)  | 0.7      |
| N2b                         | 12 (1.7)   | 10 (2.8)  | -1.2     |

Note. Data are presented as number (%) or median (IQR).

Abbreviations: CI, confidence interval; TME, total mesorectal excision; PRM, proximal resection margin; IQR, interquartile range; DRM, distal resection margin; CRM, circumferential resection margin; NA, not applicable.

* Data were obtained from 302 patients.

* Data were obtained from 619 patients.
### eTable 3. Patient Baseline Demographic and Clinical Characteristics in the Per-Protocol Population

| Characteristics                              | Laparoscopic Surgery (n = 665) | Open Surgery (n = 304) |
|----------------------------------------------|--------------------------------|------------------------|
| Age, median (IQR), years                    | 57.0 (50.0–64.0)               | 57.0 (50.0–63.0)       |
| Sex, No. (%)                                 |                                |                        |
| Male                                         | 394 (59.2)                     | 184 (60.5)             |
| Female                                       | 271 (40.8)                     | 120 (39.5)             |
| BMI, median, (IQR), kg/m²                    | 22.9 (20.8–25.0)               | 23.1 (20.9–25.3)       |
| Underweight and normal (< 25.0), No. (%)     | 501 (75.3)                     | 217 (71.4)             |
| Overweight (25.0 - 30.0), No. (%)            | 151 (22.7)                     | 83 (27.3)              |
| Obese (> 30.0), No. (%)                      | 13 (2.0)                       | 4 (1.3)                |
| ECOG performance status, No. (%)<sup>a</sup> |                                |                        |
| 0                                            | 507 (76.4)                     | 228 (75.0)             |
| 1                                            | 154 (23.2)                     | 75 (24.7)              |
| 2                                            | 3 (0.5)                        | 1 (0.3)                |
| ASA score, No. (%)                           |                                |                        |
| I                                            | 471 (70.9)                     | 221 (72.7)             |
| II                                           | 184 (27.7)                     | 80 (26.3)              |
| III                                          | 9 (1.4)                        | 3 (1.0)                |
| Comorbidity, No. (%)                         |                                |                        |
| Yes                                          | 181 (27.2)                     | 88 (28.9)              |
| No                                           | 484 (72.8)                     | 216 (71.1)             |
| Tumor distance from dentate line, median, (IQR), mm<sup>b</sup> | 30.0 (20.0-40.0)               | 30.0 (20.0-40.0)       |
| Clinical TNM stage, No. (%)                  |                                |                        |
| I                                            | 246 (37.0)                     | 96 (31.6)              |
| II/III                                       | 419 (63.0)                     | 208 (68.4)             |
| Preoperative therapy, No. (%)<sup>c</sup>    |                                |                        |
| Chemoradiotherapy                            | 403 (96.2)                     | 202 (97.1)             |
| Radiotherapy alone                           | 0 (0)                          | 1 (0.5)                |
| Chemotherapy alone                           | 3 (0.7)                        | 0 (0)                  |

Note. Data are presented as number (%) or median (interquartile range, IQR).

**Abbreviations**: IQR, interquartile range; BMI, body mass index; ECOG, Eastern Cooperative Oncology Group; ASA, American Society of Anesthesiologists.

<sup>a</sup>Data were obtained from 968 patients.

<sup>b</sup>Data were obtained from 964 patients. Tumors that invaded the dentate line in five patients were excluded.

<sup>c</sup>Only patients with clinical stage II/III disease were included.
### eTable 4. Pathologic Outcomes in the Per-Protocol Population

| Characteristics                  | Laparoscopic Surgery (n = 665) | Open Surgery (n = 304) | Difference  | 95% CI        | P Value |
|----------------------------------|--------------------------------|------------------------|-------------|---------------|---------|
| **TME quality No. (%)**          |                                |                        |             |               |         |
| Overall                          |                                |                        |             |               |         |
| Complete                         | 507 (85.6)                     | 242 (87.4)             | -1.7        | -6.3 to 3.4   | .78     |
| Nearly complete                  | 69 (11.7)                      | 28 (10.1)              | 1.5         | -3.2 to 5.7   | .53     |
| Incomplete                       | 16 (2.7)                       | 7 (2.5)                | -0.2        | -2.6 to 2.3   | .48     |
| **Stage I disease, No. (%)**     |                                |                        |             |               |         |
| Complete                         | 172 (86.4)                     | 71 (88.8)              | -2.3        | -9.9 to 7.4   | .69     |
| Nearly complete                  | 21 (10.6)                      | 8 (10.0)               | -0.6        | -8.7 to 7.5   | .32     |
| Incomplete                       | 6 (3.0)                        | 1 (1.3)                | 1.8         | -4.0 to 5.3   | .23     |
| **Stage II/III disease, No. (%)**|                                |                        |             |               |         |
| Complete                         | 335 (85.2)                     | 171 (86.8)             | -1.6        | -7.1 to 4.7   | .73     |
| Nearly complete                  | 48 (12.2)                      | 20 (10.2)              | 2.1         | -3.7 to 7.1   | .29     |
| Incomplete                       | 10 (2.5)                       | 6 (3.0)                | -0.5        | -4.1 to 2.1   | .48     |
| **Length of PRM, median, (IQR) mm** |                                |                        |             |               |         |
| Overall                          | 123 (95–150)                   | 135 (100–158)          | -12.0       | -22.5 to 1.5  | <.001   |
| Stage I disease                  | 114 (85–150)                   | 136 (100–150)          | -20.0       | -37.2 to 2.8  | .001    |
| Stage II/III disease             | 128 (100–153)                  | 135 (100–165)          | -7.0        | -18.1 to 4.1  | .10     |
| **Length of DRM, median, (IQR) mm** |                                |                        |             |               |         |
| Overall                          | 20 (13–30)                     | 20 (15–30)             | 0.0         | -1.7 to 1.7   | .76     |
| Stage I disease                  | 20 (11–30)                     | 20 (10–27)             | 0.0         | -2.5 to 2.5   | .30     |
| Stage II/III disease             | 21 (15–35)                     | 25 (17–35)             | -3.0        | -6.2 to 0.2   | .49     |
| **Negative CRMs, No. (%)**       |                                |                        |             |               |         |
| Overall                          | 654 (98.3)                     | 303 (99.7)             | -1.3        | -2.6 to 0.4   | .16     |
| Stage I disease                  | 248 (98.4)                     | 128 (100.0)            | -1.6        | -4.0 to 2.3   | .49     |
| Stage II/III disease             | 425 (98.2)                     | 225 (99.6)             | -1.4        | -3.2 to 0.8   | .26     |
| **Negative DRMs, No. (%)**       |                                |                        |             |               |         |
| Overall                          | 662 (99.5)                     | 304 (100.0)            | 0.5         | -1.3 to 0.8   | .56     |
| Stage I disease                  | 246 (100.0)                    | 96 (100.0)             | 0.0         | -1.5 to 3.8   | NA      |
### eTable 4. Pathologic Outcomes in the Per-Protocol Population (continued)

| Stage II/III disease | 416(99.3) | 226 (100.0) | -0.7 | -1.8 to 0.9 | .55 |
|----------------------|-----------|-------------|------|-------------|-----|
| Retrieved lymph nodes, median, (IQR) | Overall | 13 (9–17) | 12 (9–17) | 1.0 | 0.1 to 1.9 | .31 |
| | Stage I disease | 15 (12–19) | 15 (11–19) | 1.0 | -1.3 to 1.3 | .80 |
| | Stage II/III disease | 12 (8–16) | 12 (6–15) | 0.0 | -1.0 to 1.0 | .66 |
| Pathologic T stage, No. (%) | T0/ Tis | 98(14.7) | 38(12.5) | 2.2 | -2.6 to 6.6 | 76 |
| | T1 | 63(9.5) | 29(9.5) | -0.1 | -4.4 to 3.7 |
| | T2 | 240(36.1) | 114(37.5) | -1.4 | -8.0 to 5.0 |
| | T3 | 228(34.3) | 104(34.2) | 0.1 | -6.4 to 6.4 |
| | T4a | 35(5.3) | 17(5.6) | -0.3 | -3.8 to 2.5 |
| | T4b | 1(0.2) | 2(0.7) | -0.5 | -2.2 to 0.3 |
| Pathologic N stage, No. (%) | N0 | 499(75.0) | 229(75.3) | -0.3 | -6.0 to 5.7 | 76 |
| | N1a | 68(10.2) | 28(9.2) | 1.0 | -3.3 to 4.8 |
| | N1b | 53(8.0) | 30(9.9) | -1.9 | -6.2 to 1.8 |
| | N1c | 6(0.9) | 3(1.0) | -0.1 | -2.0 to 1.2 |
| | N2a | 28(4.2) | 8(2.6) | 1.6 | -1.2 to 3.8 |
| | N2b | 11(1.7) | 6(2.0) | -0.3 | -2.7 to 1.3 |
| Pathologic TNM stage, No. (%) | 0/pCR | 92(13.8) | 38(12.5) | 1.3 | -3.5 to 5.7 | 87 |
| | I | 247(37.1)) | 114(37.5) | -0.4 | -7.0 to 6.1 |
| | IIA | 137(20.6) | 66(21.7) | -1.1 | -6.9 to 4.2 |
| | IIB | 22(3.3) | 11(3.6) | -0.3 | -3.3 to 2.0 |
| | IIC | 0(0) | 1 (0.3) | -0.3 | -1.8 to 0.3 |
| | IIIA | 52(7.8) | 26(8.6) | -0.7 | -4.8 to 2.8 |
| | IIIB | 99(14.9) | 42(13.8) | 1.1 | -3.9 to 5.6 |
| | IIIC | 16(2.4) | 6(2.0) | 0.4 | -2.0 to 2.2 |

Note. Data are presented as number (%) or median (interquartile range, IQR).  
**Abbreviations:** CI, confidence interval; TME, total mesorectal excision; PRM, proximal resection margin; IQR, interquartile range; CRM, circumferential resection margin; DRM, distal resection margin; NA, not applicable; pCR, pathological complete response.  
*Data were obtained from 869 patients.  
*Data were obtained from 279 patients.  
*Data were obtained from 590 patients.
| Characteristics                              | Laparoscopic Surgery (n = 665) | Open Surgery (n = 304) | Difference | 95% CI | P Value |
|--------------------------------------------|--------------------------------|------------------------|------------|--------|---------|
| Operative time, median, (IQR), min         | 193.0 (155.0–240.0)            | 180.0 (140.0–218.0)    | 13.0       | 3.8 to 22.2 | < .001  |
| Estimated blood loss, median, (IQR), mL     | 50.0 (30.0–100.0)              | 100.0 (50.0–100.0)     | -50.0      | -50.0 to 50.0 | < .001  |
| Intraoperative complications No. (%)        | 1 (0.2)                        | 3 (1.0)                | -0.8       | -2.7 to 0.1  | .18     |
| Type of surgery, No. (%)                   |                                |                        |            |        |         |
| Low anterior resection                      | 419(63.0)                      | 172(56.6)              | 6.4        | 0.2 to 13.1 | .12     |
| Intersphincteric resection                 | 56(8.4)                        | 25(8.2)                | 0.2        | -3.9 to 3.7  |        |
| Abdominoperineal resection                 | 188(28.3)                      | 104(34.2)              | -5.9       | -12.3 to -0.3 |        |
| Others a                                    | 2(0.3)                         | 3(0.6)                 | -0.7       | -2.6 to 0.3  |        |
| Sphincter preservation, No. (%) b          | 477(71.7)                      | 199(65.5)              | 6.3        | 0.0 to 12.7  | .05     |
| Diverting ostomy, No. (%) c                 |                                |                        |            |        |         |
| Yes                                        | 376 (78.8)                     | 150(75.4)              | 3.4        | -3.3 to 10.7 | .33     |
| No                                         | 101 (21.2)                     | 49(24.6)               | -3.4       | -10.7, to 3.3 |        |
| Type of diverting ostomy                   |                                |                        |            |        |         |
| Ileostomy                                  | 360(95.7)                      | 147(98.0)              | -2.3       | -5.1 to 1.8  | .21     |
| Colostomy                                  | 16(4.3)                        | 3(2.0)                 | 2.3        | -1.8 to 5.1  |        |

Note. Data are presented as number (%) or median (interquartile range, IQR).

**Abbreviations:** CI, confidence interval; IQR, interquartile range.

*In the laparoscopic surgery group, two patients underwent Hartmann’s procedure. In the open group, one underwent transanal total mesorectal excision, one underwent Hartmann’s procedure, and one underwent total proctocolectomy.

b Only patients who underwent sphincter-preserving surgery were included. In the laparoscopic surgery group, 419 patients underwent low anterior resection, 56 underwent intersphincteric resection, and two underwent Hartmann’s procedure. In the open surgery group, 172 underwent low anterior resection, 25 underwent intersphincteric resection, one underwent transanal total mesorectal excision, and one underwent Hartmann’s procedure.

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### eTable 6. Postoperative Recovery and Complications in the Per-Protocol Population

| Characteristics                                      | Laparoscopic Surgery (n = 665) | Open Surgery (n = 304) | Difference | 95% CI       | P Value |
|-------------------------------------------------------|-------------------------------|------------------------|------------|--------------|---------|
| **Postoperative recovery**                            |                               |                        |            |              |         |
| Time to first flatus, median, (IQR), h                | 40.4 (18.7–63.6)              | 44.1 (20.0–65.4)       | -3.5       | -7.8 to 0.8  | .03     |
| Time to first defecation, median, (IQR), h            | 61.4 (30.0–94.5)              | 64.9 (31.1–104.3)      | -3.4       | -11.7 to 4.9 | .34     |
| Time to liquid diet, median, (IQR), h                 | 46.3 (22.5–86.7)              | 48.2 (20.7–84.5)       | -1.8       | -9.6 to 6.0  | .73     |
| Time to normal diet, median, (IQR), h                 | 116.0 (70.2–164.0)            | 115.2 (68.2–164.6)     | 0.7        | -14.3 to 15.7| .71     |
| Duration of analgesic use, h                          | 45.1 (28.8–65.2)              | 49.5 (39.6–68.8)       | -4.4       | -8.5 to -0.3 | <.001   |
| **30-day postoperative complications, No. (%)**       | 86 (12.9)                     | 58 (19.1)              | -6.1       | -11.5 to -1.3| .01     |
| **Type of postoperative complications, No. (%)**²     |                               |                        |            |              |         |
| Presacral hemorrhage                                  | 1 (0.2)                       | 1 (0.3)                | -0.2       | -1.7 to 0.6  | .53     |
| Active intraabdominal bleeding                        | 2 (0.3)                       | 3 (1.0)                | -0.7       | -2.6 to 0.3  | .37     |
| Anastomotic bleeding²                                 | 3 (0.6)                       | 2 (1.0)                | -0.4       | -3.0 to 1.0  | .98     |
| Anastomotic leakage³                                  | 12 (2.5)                      | 12 (6.0)               | -3.5       | -7.9 to -0.4 | .02     |
| Chylous leakage                                       | 4 (0.6)                       | 0 (0)                  | 0.6        | -0.7 to 1.5  | .42     |
| Ileus                                                 | 15 (2.3)                      | 9 (3.0)                | -0.7       | -3.4 to 1.3  | .51     |
| Incision complications                                | 16 (2.4)                      | 17 (5.6)               | -3.2       | -6.5 to -0.6 | .01     |
| Stoma-related complications                           | 2 (0.3)                       | 0 (0)                  | 0.3        | -1.0 to 1.1  | .99     |
| Urinary disorder                                      | 12 (1.8)                      | 2 (0.7)                | 1.1        | -0.7 to 2.6  | .27     |
| Urinary tract infection                               | 6 (0.9)                       | 2 (0.7)                | 0.2        | -1.5 to 1.4  | .99     |
| Cardiovascular event                                  | 2 (0.3)                       | 3 (1.0)                | -0.7       | -2.6 to 0.3  | .37     |
| Pneumonia                                             | 6 (0.9)                       | 6 (2.0)                | -1.1       | -3.4 to 0.4  | .28     |
| Others                                                | 18 (2.6)                      | 6 (1.7)                | 0.9        | -1.7 to 2.7  | .34     |
| **Clavien-Dindo classification, No. (%)**             |                               |                        |            |              |         |
| I-II                                                  | 81 (12.2)                     | 52 (17.1)              | -4.9       | -10.1 to 0.2 | .03     |
| IIIa-IVa                                              | 5 (0.8)                       | 6 (2.0)                | -1.2       | -3.5 to 0.2  | .2       |
| **30-day mortality, No. (%)**                         | 0 (0)                         | 0 (0)                  | 0.0        | -1.2 to 0.6  | NA      |
| Duration of hospitalization, median, (IQR), d         | 8.0 (7.0–11.0)                | 9.0 (7.0–12.0)         | -1.0       | -1.7 to -0.3 | .007    |

Note. Data are presented as number (%) or median (interquartile range, IQR).

Abbreviations: CI, confidence interval; NA, not applicable.

² The number of individual complications exceeded the total number of complications because one patient may have had more than two complications.
Patients who underwent sphincter-preserving surgery and one who underwent Hartmann’s procedure were excluded.

Patients who underwent sphincter-preserving surgery and two patients who underwent Hartmann’s procedure were excluded.