**Supplementary Table 1.** Baseline Characteristics of Patient Groups and Difference Analysis Results

| Parameters | Non-leaking group (*n* = 274) | Leaking group (*n* = 29) | *P* value |
|---|---|---|---|
| Age, mean ± SD | 54.6 ± 13.9 | 52.6 ± 19.2 | .596[a] |
| **Gender, *n* (%)** | | | **.788[b]** |
| Female | 111 (40.5) | 11 (37.9) | |
| Male | 163 (59.5) | 18 (62.1) | |
| **Comorbidities, n (%)** | | | |
| Hypertension | 86 (31.4) | 7 (24.1) | .421 |
| Diabetes mellitus | 49 (17.9) | 4 (13.8) | .581 |
| Chronic artery disease | 36 (13.1) | 6 (20.7) | .262 |
| Chronic obstructive pulmonary disease | 5 (1.8) | 2 (6.9) | .137 |
| Chronic heart failure | 20 (7.3) | 4 (13.8) | .266 |
| Chronic kidney failure | 1 (0.4) | - | .999 |
| Smoking, *n* (%) | 88 (32.1) | 11 (37.9) | .526 |
| **ASA score, n (%)** | | | **.210** |
| I | 131 (47.8) | 10 (34.5) | |
| II | 126 (46.0) | 15 (51.7) | |
| III | 15 (5.5) | 4 (13.8) | |
| IV | 2 (0.7) | - | |
| **Diagnosis, *n* (%)** | | | **.362** |
| Colorectal tumor | 165 (60.2) | 14 (48.3) | |
| Obstructive defecation syndrome | 13 (4.7) | 3 (10.3) | |
| Divercule | 4 (1.5) | 1 (3.4) | |
| Ileostomy | 66 (24.1) | 7 (24.1) | |
| Colostomy | 9 (3.3) | 1 (3.4) | |
| FAP | 3 (1.1) | - | |
| IBD | 2 (0.7) | 1 (3.4) | |
| RV fistula | 2 (0.7) | - | |
| Volvulus | 1 (0.4) | - | |
| Other malignity | 9 (3.3) | 2 (6.9) | |
| **Malignancy, *n* (%)** | | | **.494** |
| Malign | 169 (61.7) | 16 (55.2) | |
| Benign | 105 (38.3) | 13 (44.8) | |
| Ileus, *n* (%) | 10 (3.6) | 1 (3.4) | .999 |
| Perforation, *n* (%) | 2 (0.7) | - | .999 |

**Supplementary Table 2.** Operation Parameters of Patient Groups and Difference Analysis Results

| Parameters | Non-leaking group (*n* = 274) | Leaking group (*n* = 29) | *P* value |
|---|---|---|---|
| Neoadjuvant treatment, n (%) (for rectums) | 68 (95.8) | 3 (75.0) | .201 |
| **Operation, *n* (%)** | | | .212 |
| Low anterior resection | 81 (29.6) | 7 (24.1) | |
| Anterior resection | 48 (17.5) | 2 (6.9) | |
| Right hemicolectomy | 28 (10.2) | 3 (10.3) | |
| Subtotal colectomy | 16 (5.8) | 4 (13.8) | |
| IB anastomosis | 66 (24.1) | 6 (20.7) | |
| Colocolic anastomosis | 8 (2.9) | 1 (3.4) | |
| Extended right hemicolectomy | 25 (8.0) | 5 (17.2) | |
| IPAA (pouch surgery) | 2 (0.7) | 1 (3.4) | |
| Small bowel resection | 3 (1.1) | - | |
| Operation type, *n* (%) | 84 (30.7) | 11 (37.9) | .697 |
| **Open** | | | |
| Laparoscopic | 179 (65.3) | 18 (62.1) | |
| Robotic | 9 (3.3) | - | |
| Return to open | 2 (0.7) | - | |
| Minimal invasive, *n* (%) | 190 (69.3) | 18 (62.1) | .422 |
| Deflecting stroma, *n* (%) | 87 (31.8) | 8 (27.6) | .646 |
| Anastomosis region | | | .036 |
| Ileoileal | 68 (24.8) | 3 (10.3) | |
| Ileocolic | 56 (20.4) | 12 (41.4) | |
| Ileorectal | 11 (4.0) | 3 (10.3) | |
| Coloanal | 54 (19.7) | 4 (13.8) | |
| Chocoholic | 5 (1.8) | - | |
| Colorectal | 78 (28.5) | 6 (20.7) | |
| Pouch-anal | 2 (0.7) | 1 (3.4) | |
| Anastomosis type | | | .232 |
| End to end | 125 (45.6) | 10 (34.5) | |
| Side to end | 19 (6.9) | 3 (10.3) | |
| Side to side | 128 (46.7) | 15 (51.7) | |
| Pouch | 2 (0.7) | 1 (34) | |
| Anastomosis technique, | | | .999 |
| Stapler | 232 (84.7) | 25 (86.2) | |
| Hand | 42 (15.3) | 4 (13.8) | |
| **Antibiotic type, *n* (%)** | | | .461 |
| Cefazolin-metronidazole | 237 (86.5) | 24 (82.8) | |
| Ceftriaxone metronidazole | 29 (10.6) | 5 (17.2) | |
| Other | 8 (2.9) | - | |
| Complication, *n* (%) [*n* = 35/*n* = 8] | | | .027 |
| Wound infection | 8 (2.9) | 4 (13.8) | |
| Pulmonary emboli | 1 (0.4) | - | |
| Pneumonia | 2 (0.7) | - | |
| Urine retention | 2 (0.7) | - | |
| Gastric dilatation | 22 (8.0) | 3 (10.3) | |
| Evisceration | - | 1 (3.4) | |
| Leukocyte at 3rd day | 7410 (1740-29880) | 10520 (1100-22280) | .000 |
| CRP at 3rd day | 131.5 (0.1-505.0) | 205.0 (60-445) | .000 |
| Procalcitonin at 3rd day | 0.4 (0-25.8) | 1.5 (0.1-14) | .000 |
| Leukocyte at 5th day | 6005 (1620-18350) | 8350 (2780-20000) | .000 |
| CRP at 5th day | 43 (5-383) | 130 (24-292) | .000 |
| Procalcitonin at 5th day | 0.2 (0-5.1) | 0.5 (0.1-9.3) | .000 |