

| Supplementary Table 1 Cannula group ( <i>n</i> = 37) |        |     |                         |                      |                                                  |                             |                                               |                                    |                                 |                                 |                                |                               |             |
|------------------------------------------------------|--------|-----|-------------------------|----------------------|--------------------------------------------------|-----------------------------|-----------------------------------------------|------------------------------------|---------------------------------|---------------------------------|--------------------------------|-------------------------------|-------------|
| Name                                                 | Sex    | Age | Hospitalization<br>days | Date of<br>operation | Obstruction of<br>intestinal tube<br>length (cm) | Obstruction<br>time (hours) | Intestinal<br>decompression<br>time (minutes) | Reduced<br>pressure<br>amount (mL) | Surgical field<br>contamination | Surgical field<br>contamination | Operative<br>time<br>(minutes) | Surgical<br>site<br>infection | Readmission |
| Subject 1                                            | Male   | 72  | 10                      | 2023.12.01           | 250                                              | 72                          | 10                                            | 750                                | No                              | 48                              | 180                            | No                            | No          |
| Subject 2                                            | Male   | 60  | 10                      | 2024.02.14           | 300                                              | 75                          | 10                                            | 800                                | No                              | 48                              | 140                            | Yes                           | Yes         |
| Subject 3                                            | Male   | 42  | 10                      | 2023.07.21           | 260                                              | 80                          | 8                                             | 720                                | No                              | 50                              | 150                            | No                            | No          |
| Subject 4                                            | Female | 66  | 10                      | 2023.12.06           | 250                                              | 79                          | 8                                             | 680                                | Yes                             | 52                              | 170                            | No                            | No          |
| Subject 5                                            | Female | 77  | 10                      | 2023.11.13           | 210                                              | 83                          | 10                                            | 680                                | No                              | 50                              | 170                            | No                            | No          |
| Subject 6                                            | Female | 24  | 10                      | 2023.04.07           | 220                                              | 86                          | 12                                            | 750                                | No                              | 48                              | 140                            | No                            | No          |
| Subject 7                                            | Female | 54  | 11                      | 2023.03.18           | 220                                              | 76                          | 11                                            | 720                                | No                              | 54                              | 150                            | No                            | No          |
| Subject 8                                            | Male   | 60  | 11                      | 2024.06.13           | 300                                              | 76                          | 10                                            | 700                                | Yes                             | 52                              | 160                            | No                            | No          |
| Subject 9                                            | Male   | 69  | 11                      | 2024.01.05           | 270                                              | 81                          | 10                                            | 700                                | No                              | 50                              | 170                            | No                            | No          |
| Subject 10                                           | Female | 55  | 12                      | 2023.12.26           | 250                                              | 96                          | 12                                            | 780                                | No                              | 58                              | 140                            | No                            | No          |
| Subject 11                                           | Female | 55  | 12                      | 2023.11.21           | 260                                              | 91                          | 10                                            | 740                                | No                              | 62                              | 140                            | Yes                           | No          |
| Subject 12                                           | Female | 61  | 13                      | 2023.06.18           | 240                                              | 88                          | 10                                            | 680                                | No                              | 58                              | 150                            | No                            | No          |
| Subject 13                                           | Male   | 72  | 13                      | 2023.10.25           | 240                                              | 85                          | 9                                             | 680                                | No                              | 56                              | 150                            | No                            | No          |
| Subject 14                                           | Male   | 66  | 13                      | 2024.05.27           | 250                                              | 84                          | 10                                            | 700                                | No                              | 58                              | 140                            | No                            | No          |
| Subject 15                                           | Male   | 72  | 14                      | 2023.12.12           | 270                                              | 92                          | 10                                            | 750                                | No                              | 60                              | 150                            | No                            | No          |
| Subject 16                                           | Female | 63  | 15                      | 2023.04.03           | 280                                              | 89                          | 11                                            | 780                                | No                              | 62                              | 140                            | No                            | No          |
| Subject 17                                           | Male   | 71  | 15                      | 2023.05.28           | 280                                              | 80                          | 9                                             | 720                                | Yes                             | 58                              | 160                            | No                            | No          |
| Subject 18                                           | Female | 73  | 11                      | 2024.05.29           | 270                                              | 72                          | 8                                             | 720                                | No                              | 58                              | 170                            | No                            | No          |
| Subject 19                                           | Female | 51  | 9                       | 2024.01.27           | 260                                              | 80                          | 8                                             | 800                                | No                              | 56                              | 160                            | Yes                           | No          |
| Subject 20                                           | Female | 35  | 5                       | 2023.04.23           | 220                                              | 82                          | 8                                             | 660                                | No                              | 52                              | 160                            | No                            | No          |
| Subject 21                                           | Female | 30  | 6                       | 2023.12.31           | 310                                              | 84                          | 8                                             | 680                                | No                              | 50                              | 150                            | No                            | No          |
| Subject 22                                           | Male   | 53  | 7                       | 2023.11.05           | 330                                              | 84                          | 10                                            | 740                                | No                              | 60                              | 130                            | No                            | No          |
| Subject 23                                           | Male   | 57  | 7                       | 2023.04.08           | 300                                              | 80                          | 10                                            | 750                                | No                              | 60                              | 150                            | No                            | No          |
| Subject 24                                           | Female | 73  | 7                       | 2024.01.30           | 290                                              | 86                          | 9                                             | 670                                | No                              | 58                              | 140                            | No                            | No          |

|            |        |    |   |            |     |    |    |     |     |    |     |     |    |
|------------|--------|----|---|------------|-----|----|----|-----|-----|----|-----|-----|----|
| Subject 25 | Female | 55 | 7 | 2024.05.04 | 280 | 48 | 10 | 680 | No  | 56 | 130 | No  | No |
| Subject 26 | Male   | 64 | 8 | 2023.01.05 | 310 | 60 | 8  | 650 | Yes | 58 | 150 | No  | No |
| Subject 27 | Female | 48 | 8 | 2023.02.05 | 290 | 64 | 9  | 650 | No  | 60 | 140 | No  | No |
| Subject 28 | Female | 49 | 8 | 2024.03.11 | 280 | 58 | 10 | 670 | No  | 56 | 130 | Yes | No |
| Subject 29 | Female | 72 | 8 | 2024.02.04 | 280 | 72 | 10 | 680 | No  | 56 | 150 | No  | No |
| Subject 30 | Male   | 76 | 8 | 2024.03.26 | 290 | 48 | 10 | 700 | No  | 58 | 160 | No  | No |
| Subject 31 | Male   | 37 | 8 | 2024.01.10 | 300 | 66 | 10 | 720 | No  | 64 | 160 | No  | No |
| Subject 32 | Male   | 61 | 8 | 2023.05.28 | 250 | 68 | 9  | 700 | Yes | 62 | 140 | No  | No |
| Subject 33 | Male   | 52 | 8 | 2023.12.11 | 280 | 72 | 11 | 720 | No  | 62 | 150 | No  | No |
| Subject 34 | Female | 38 | 8 | 2023.11.09 | 310 | 76 | 10 | 760 | No  | 58 | 140 | No  | No |
| Subject 35 | Female | 47 | 9 | 2023.05.19 | 340 | 68 | 11 | 820 | No  | 62 | 160 | No  | No |
| Subject 36 | Female | 69 | 9 | 2023.09.14 | 270 | 70 | 9  | 780 | No  | 60 | 170 | No  | No |
| Subject 37 | Female | 53 | 9 | 2023.11.12 | 290 | 66 | 8  | 780 | No  | 60 | 150 | No  | No |

Supplementary Table 1 Control group (*n* = 33)

| Name       | Sex    | Age | Hospitalization<br>days | Date<br>of<br>Operation | Obstruction of<br>intestinal tube<br>length (cm) | Obstruction<br>time<br>(hours) | Intestinal<br>decompression<br>time (minutes) | Reduced<br>pressure<br>amount (mL) | Surgical field<br>contamination | Surgical field<br>contamination | Operative<br>time<br>(minutes) | Surgical<br>site<br>infection | Readmission |
|------------|--------|-----|-------------------------|-------------------------|--------------------------------------------------|--------------------------------|-----------------------------------------------|------------------------------------|---------------------------------|---------------------------------|--------------------------------|-------------------------------|-------------|
| Subject 1  | Male   | 71  | 11                      | 2023.05.02              | 260                                              | 55                             | 15                                            | 560                                | Yes                             | 70                              | 170                            | No                            | No          |
| Subject 2  | Male   | 68  | 11                      | 2024.01.05              | 250                                              | 76                             | 15                                            | 520                                | No                              | 68                              | 150                            | Yes                           | No          |
| Subject 3  | Female | 56  | 12                      | 2024.05.28              | 210                                              | 76                             | 16                                            | 550                                | No                              | 72                              | 150                            | No                            | No          |
| Subject 4  | Male   | 62  | 12                      | 2023.09.05              | 220                                              | 81                             | 18                                            | 610                                | Yes                             | 76                              | 190                            | Yes                           | No          |
| Subject 5  | Male   | 66  | 12                      | 2024.05.19              | 220                                              | 96                             | 14                                            | 580                                | No                              | 68                              | 160                            | No                            | No          |
| Subject 6  | Female | 66  | 13                      | 2024.05.08              | 300                                              | 91                             | 16                                            | 280                                | No                              | 76                              | 200                            | No                            | No          |
| Subject 7  | Male   | 77  | 13                      | 2023.08.17              | 270                                              | 88                             | 15                                            | 570                                | No                              | 72                              | 180                            | Yes                           | No          |
| Subject 8  | Male   | 59  | 13                      | 2023.01.14              | 310                                              | 85                             | 16                                            | 610                                | Yes                             | 70                              | 180                            | No                            | No          |
| Subject 9  | Male   | 71  | 13                      | 2023.11.29              | 310                                              | 48                             | 16                                            | 620                                | No                              | 74                              | 170                            | Yes                           | Yes         |
| Subject 10 | Female | 60  | 13                      | 2024.01.08              | 330                                              | 70                             | 18                                            | 600                                | No                              | 72                              | 200                            | No                            | No          |

| Subject Data Summary - Q1 2024 |        |     |             |             |     |             |             |             |             |             |             |             |             |
|--------------------------------|--------|-----|-------------|-------------|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Subject ID                     | Gender | Age | Height (cm) | Weight (kg) | DOB | Height (cm) | Weight (kg) | Height (cm) | Weight (kg) | Height (cm) | Weight (kg) | Height (cm) | Weight (kg) |
| Subject 11                     | Female | 68  | 14          | 2023.01.18  | 300 | 62          | 15          | 590         | Yes         | 68          | 210         | Yes         | No          |
| Subject 12                     | Male   | 14  | 14          |             | 280 | 84          | 16          | 580         | No          | 70          | 170         | No          | No          |
| Subject 13                     | Female | 63  | 14          |             | 280 | 82          | 15          | 580         | No          | 68          | 170         | Yes         | No          |
| Subject 14                     | Female | 47  | 14          | 2023.04.24  | 310 | 86          | 17          | 610         | Yes         | 72          | 200         | No          | No          |
| Subject 15                     | Male   | 59  | 15          | 2023.01.09  | 290 | 78          | 18          | 600         | No          | 72          | 210         | No          | No          |
| Subject 16                     | Female | 53  | 15          | 2023.03.03  | 280 | 65          | 15          | 580         | No          | 68          | 200         | No          | No          |
| Subject 17                     | Male   | 74  | 15          | 2023.06.15  | 240 | 76          | 16          | 590         | Yes         | 66          | 180         | No          | No          |
| Subject 18                     | Male   | 72  | 15          | 2024.11.26  | 290 | 74          | 18          | 600         | No          | 72          | 200         | Yes         | No          |
| Subject 19                     | Male   | 74  | 15          | 2023.02.02  | 280 | 72          | 18          | 600         | No          | 70          | 180         | No          | No          |
| Subject 20                     | Male   | 72  | 15          | 2023.11.30  | 250 | 68          | 15          | 580         | No          | 70          | 180         | No          | No          |
| Subject 21                     | Female | 65  | 16          | 2024.03.27  | 280 | 64          | 16          | 590         | No          | 68          | 210         | No          | No          |
| Subject 22                     | Male   | 41  | 16          | 2024.02.16  | 310 | 86          | 18          | 550         | Yes         | 62          | 160         | No          | No          |
| Subject 23                     | Male   | 74  | 17          | 2023.02.04  | 300 | 75          | 14          | 610         | No          | 72          | 210         | Yes         | No          |
| Subject 24                     | Female | 55  | 19          | 2023.09.13  | 270 | 72          | 16          | 550         | No          | 64          | 200         | No          | No          |
| Subject 25                     | Female | 26  | 20          | 2023.10.12  | 260 | 68          | 10          | 520         | No          | 68          | 160         | No          | No          |
| Subject 26                     | Male   | 64  | 21          | 2023.02.13  | 240 | 66          | 16          | 500         | Yes         | 70          | 180         | No          | No          |
| Subject 27                     | Female | 47  | 8           | 2023.04.25  | 240 | 64          | 15          | 520         | No          | 66          | 170         | Yes         | Yes         |
| Subject 28                     | Male   | 40  | 8           | 2023.03.07  | 250 | 66          | 18          | 540         | No          | 72          | 190         | No          | No          |
| Subject 29                     | Male   | 48  | 9           | 2023.04.22  | 260 | 70          | 18          | 500         | Yes         | 70          | 200         | No          | No          |
| Subject 30                     | Male   | 58  | 9           | 2023.03.21  | 280 | 72          | 16          | 540         | Yes         | 68          | 210         | No          | No          |
| Subject 31                     | Male   | 73  | 13          | 2023.01.06  | 300 | 68          | 16          | 580         | Yes         | 70          | 180         | No          | No          |
| Subject 32                     | Male   | 60  | 13          | 2023.02.17  | 290 | 66          | 15          | 520         | No          | 72          | 170         | Yes         | No          |
| Subject 33                     | Male   | 62  | 11          | 2024.06.03  | 260 | 76          | 17          | 520         | Yes         | 68          | 190         | No          | No          |