

# Treatment outcome of obstructive colorectal cancer resected with laparoscopic surgery after bowel decompression

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## Introduction

- Obstructive colorectal cancer (OCC) often requires immediate bowel decompression to avoid emergency surgery. Transanal or transnasal drainage tube (TDT) are commonly used.
- Self-expandable metallic stent (SEMS) have been available and increasingly used since 2012 in Japan. Bowel decompression by SEMS insertion as a bridge to surgery (BTS) has been achieved without reducing the patient's quality of life (QOL), and laparoscopic resection of the primary tumor has been increasingly performed.
- However, many reports have suggested that oncological safety is not guaranteed.

## Aim

- To evaluate the efficacy of SEMS compared to a transnasal or transanal decompression tube to achieve successful laparoscopic surgery in patients with obstructive colorectal cancer.

## Patients and Methods

- April 2012 to August 2019
- 42 patients with OCC who underwent preoperative decompression
- 22 patients were decompressed by SEMS (SEMS group)
- 20 patients were decompressed by TDT (TDT group)
- Clinical factors, treatment results, and outcomes were retrospectively evaluated.

## Results

### Patient and tumor characteristics

|                                    |                         | SEMS<br>(N=22)   | TDT<br>(N=20)   | p value |
|------------------------------------|-------------------------|------------------|-----------------|---------|
| Age                                | (years)                 | 71.0 (39-97)     | 70.5 (42-82)    | 0.60    |
| Gender                             | (Male/Female) (n)       | 15 / 7           | 14 / 6          | 0.89    |
| Body mass index                    | kg/cm <sup>2</sup>      | 21.5±0.8         | 20.7±0.8        | 0.40    |
| Tumor location                     | C                       | 0                | 1               | 0.23    |
|                                    | A                       | 2                | 3               |         |
|                                    | T                       | 5                | 9               |         |
|                                    | D                       | 2                | 2               |         |
|                                    | S                       | 10               | 3               |         |
|                                    | RS<br>Ra                | 2<br>1           | 2<br>0          |         |
| Tumor size                         | (mm)                    | 70.9±4.7         | 53.5±5.0        | 0.02    |
| Histological differentiation       | Differentiated*         | 20 (90.9)        | 18 (90.0)       | 0.92    |
|                                    | Poorly Differentiated** | 2 (9.1)          | 2 (10.0)        |         |
| Depth of tumor invasion (pT)(n)(%) | T3                      | 14 (63.6)        | 8 (40.0)        | 0.30    |
|                                    | T4a                     | 5 (22.7)         | 8 (40.0)        |         |
|                                    | T4b                     | 3 (13.7)         | 4 (20.0)        |         |
|                                    |                         |                  |                 |         |
| Lymph node metastasis(pN)(n)(%)    | N0                      | 8 (36.4)         | 8 (40.0)        | 0.81    |
|                                    | N1,2,3                  | 14 (63.6)        | 12 (60.0)       |         |
| Distant metastasis(M)              | M0                      | 14(63.6)         | 13 (65.0)       | 0.66    |
|                                    | M1                      | 8 (36.4)         | 7 (35.0)        |         |
| Lymphatic invasion                 | ly0・1a                  | 7                | 9               | 0.37    |
|                                    | ly1b・1c                 | 15               | 11              |         |
| Venous invasion                    | v0・1a                   | 2                | 5               | 0.16    |
|                                    | v1b・1c                  | 20               | 15              |         |
| TNM pStage                         | II                      | 5 (22.7)         | 8 (40.0)        | 0.47    |
|                                    | III                     | 9 (40.9)         | 6 (30.0)        |         |
|                                    | IV                      | 8 (36.4)         | 6 (30.0)        |         |
| CEA                                | (ng/ml)                 | 16.4 (1.3-1163)  | 9.3 (1.4-287)   | 0.46    |
| CA19-9                             | (U/ml)                  | 15.2 (2.1-23076) | 18.8 (1.0-3915) | 0.61    |

\* : Differentiated : tub・pap, \*\* : Poorly Differentiated : por・sig・muc  
cotinuous variable : mean±SD, ordered variable : median (interquartile range)

### Outcomes

| Preoperative                 |                             | SEMS<br>(N=22)       | TDT<br>(N=20)              | p value |
|------------------------------|-----------------------------|----------------------|----------------------------|---------|
| Period of decompression      | (days)                      | 35.1±3.8             | 8.9±4.0                    | <0.0001 |
| CROSS score                  | Before decompression        | 1.0±0.2              | 0.6±0.2                    | 0.08    |
|                              | After decompression         | 4.0±0.0              | 0.9±0.1                    | <0.0001 |
| Oral intake before operation | (n)(%)                      | 14 (93.3)            | 0 (0)                      | <0.001  |
| Temporary discharge          | (n)(%)                      | 21 (95.5)            | 0 (0)                      | <0.001  |
| Full colonic evaluation      | (n)(%)                      | 6 (27.3)             | 8 (40)                     | 0.38    |
| Complications                | (n)(%)                      | 1 (4.5)<br>Ulcer : 1 | 1 (5.0)<br>Perforation : 1 | 0.38    |
| Alb                          | (g/dl)                      | 3.4±0.1              | 3.5±0.1                    | 0.52    |
| CRP                          | (mg/l)                      | 1.3±0.9              | 3.4±0.8                    | 0.11    |
| mGPS                         | 0                           | 5 (33.3)             | 4 (20.0)                   | 0.44    |
|                              | 1                           | 4 (26.7)             | 9 (45.0)                   |         |
|                              | 2                           | 6 (40.0)             | 6 (30.0)                   |         |
| PNI                          |                             | 35.2±1.4             | 36.2±1.2                   | 0.58    |
| CONUT                        |                             | 3.5±0.6              | 3.5±0.5                    | 0.93    |
| Operative                    |                             | SEMS<br>(N=22)       | TDT<br>(N=20)              | p value |
| Approach                     | (n)(%) Laparoscopic<br>Open | 22 (100)<br>0 (0)    | 20 (100)<br>0 (0)          | —       |
| Primary resection            | (n)(%)                      | 22 (100)             | 20 (100)                   | —       |
| Anastomosis                  | (n)(%)                      | 21 (95.5)            | 20 (100)                   | 0.25    |
| Operation time               | (min)                       | 219.5 (110-349)      | 209 (113-402)              | 0.91    |
| Blood loss                   | (ml)                        | 17.5 (0-770)         | 37.5 (5-330)               | 0.69    |
| Curability                   | A                           | 13 (59.1)            | 11 (55.0)                  | 0.58    |
|                              | B                           | 2 (9.1)              | 4 (20.0)                   |         |
|                              | C                           | 7 (31.8)             | 5 (25.0)                   |         |

Statistical analyses  
All statistical analyses were performed using JMP® 10.0.2 (SAS Institute Inc., Cary, NC, USA). Statistical comparisons were performed using a Student's t-test between the SEMS group and TDT group. P-values less than 0.05 were considered to indicate statistical significance.

## Preoperative decompressive procedures as a BTS at our institutions

BTS in patients with occ

### Urgent decompression

Gastroenterology

- transnasal decompression tube
- transanal decompression tube
- SEMS...

consultation

### Operation

Digestive and general surgery

With a **CROSS score** between **0 and 1** indicating that stenting as a bridge to surgery (BTS) is appropriate.

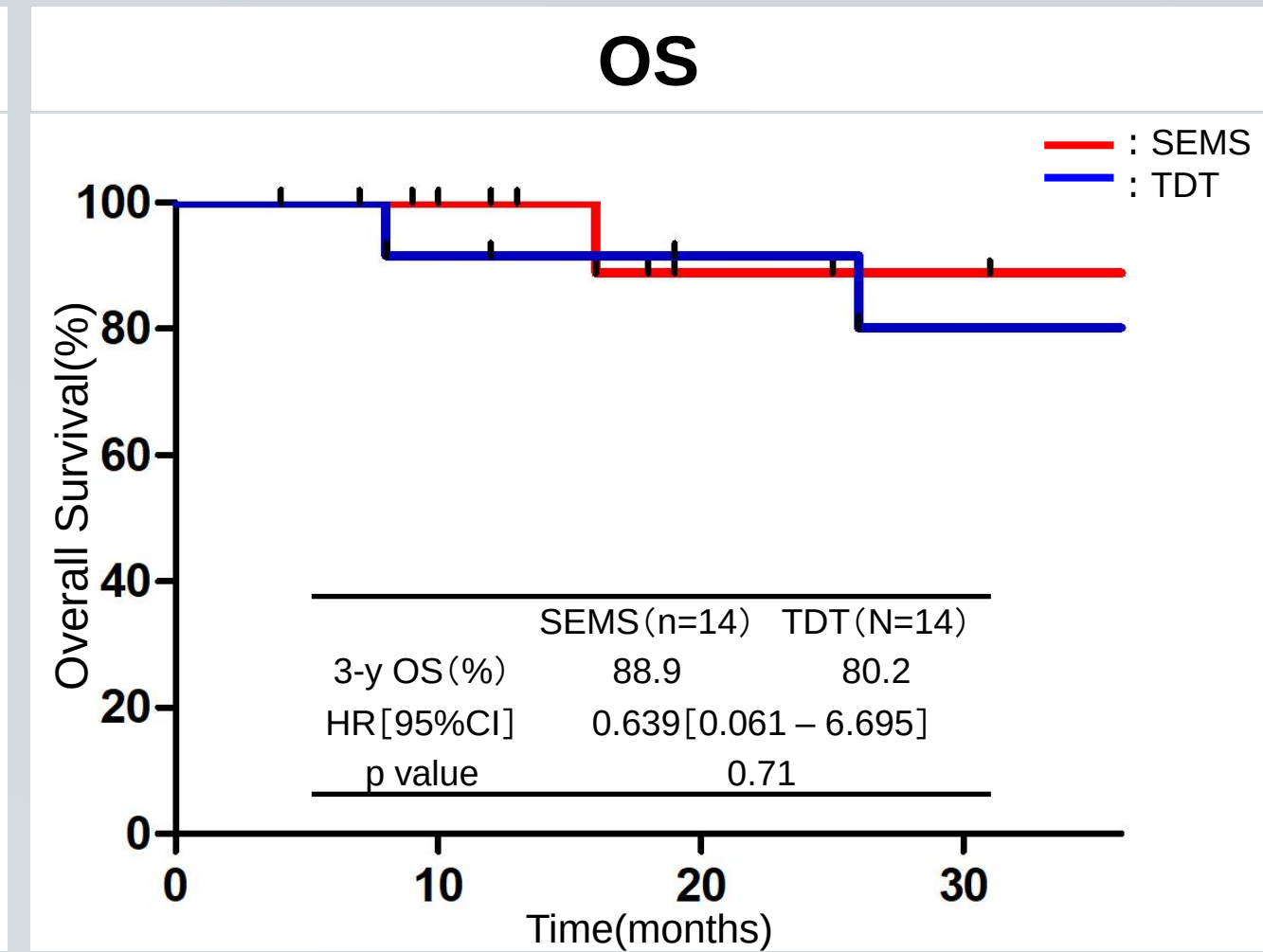
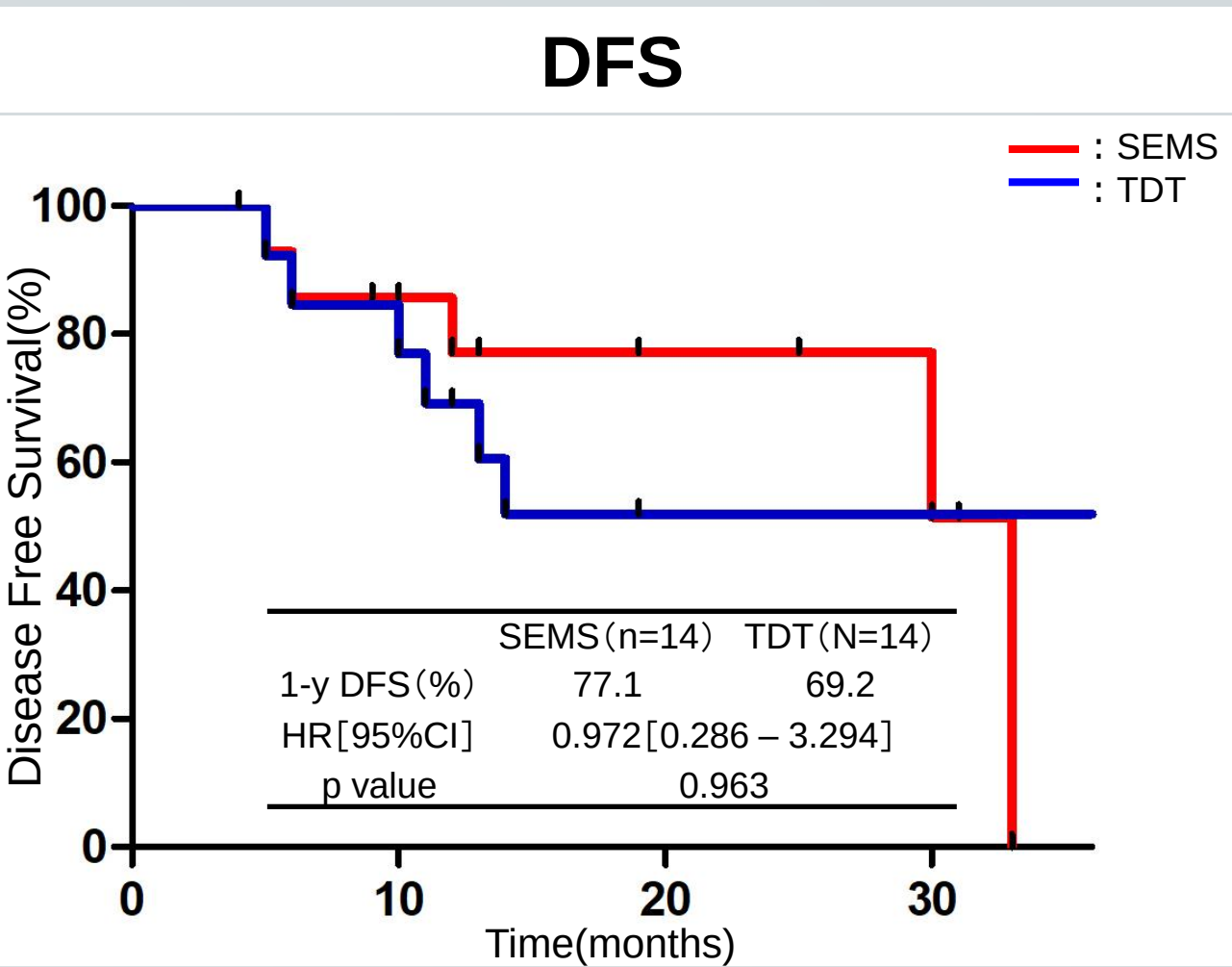
### The ColoRectal Obstruction Scoring System (CROSS)

| Level of oral intake                                                   | Score |
|------------------------------------------------------------------------|-------|
| Requiring continuous decompressive procedure                           | 0     |
| No oral untake                                                         | 1     |
| Liquid or enteral nutrient                                             | 2     |
| Soft solids, low-residue, and full diet with symptoms of stricture     | 3     |
| Soft solids, low-residue, and full diet without symptoms of stricture* | 4     |

\*Symptoms of stricture contain abdominal pain/cramps, abdominal distension, nausea, vomiting, constipation, and diarrhea which are related to gastrointestinal transit.

Japan Colonic Stent Safe Procedure Research Group's home page (<http://colon-stent.com/>);

### StageII・III



## Discussion & Conclusion

- In OCC patients, the use of SEMS enabled favorable bowel decompression, helped to stabilize the general condition of the patients without reducing their QOL.
- Although each group achieved successful laparoscopic surgery, sufficient decompression of SEMS may have been associated with an improved postoperative course.
- Regarding oncological safety, an increase in the number of cases and evaluation of long-term prognosis are necessary in the future.

### Contact details

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