Transanal total mesorectal excision after incomplete endoscopic submucosal dissection for early-stage low rectal cancer: A small case series

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ABSTRACT
Endoscopic submucosal dissection (ESD) for colorectal cancer is challenging but is gradually being performed worldwide. It is less invasive than surgical resection and can be performed on lesions in which malignancy cannot be diagnosed. In low rectal cancers, changes such as scarring after ESD may make it challenging to preserve the anus when additional surgical resection is required. Transanal total mesorectal excision (TaTME) is a novel surgical technique involving transanal endoscopic manipulation. It is useful for lesions in the deep pelvis near the anus. Herein, we report six cases of TaTME after ESD for early-stage low rectal cancer that resulted in incomplete resection. As a representative case, a 77-year-old female was referred to our hospital, and colonoscopy revealed low rectal cancer. ESD was performed, and the pathological diagnosis was an invasion of the submucosal layer and microscopic lymphovascular invasion. We performed an additional laparoscopic low anterior resection with TaTME. Lymph node metastasis was observed, and the final diagnosis was pT1b, pN1a, pStage IIIa, and R0. In other cases, the anus can also be preserved, and the distal margin can be secured. TaTME enabled anal preservation without being affected by the ESD scars. It is considered useful for additional resection after ESD of low rectal cancer.

1. Introduction
Endoscopic submucosal dissection (ESD) is a novel treatment for benign colorectal tumors and early cancers that achieves en bloc mucosal resection with wider margins [1]. ESD is currently a widely used treatment with advances in techniques and equipment [2]. While diagnostic treatment is possible if additional resection is required (e.g., positive vertical margin or submucosal invasion in a malignant tumor), ESD scars make surgery challenging. Resection and anastomosis at the scar site may lead to anastomotic leakage and stenosis. In addition, anal preservation may be challenging because of the proper distal resection margin (DRM) from the ESD scar.

Low anterior resection (LAR) for low rectal cancer is challenging for lesions located closer to the anus. The narrow and deep pelvis has a poor field of view in open surgery and is restricted by fixed trocar positions and straight laparoscopic instruments, even during laparoscopic surgery. In recent years, transanal total mesorectal excision (TaTME) has become an attractive minimally invasive surgery. Performing a transanal “bottom-up” surgical approach can achieve an accurate DRM with adequate visualization during surgery [3]. Herein, we describe six cases of TaTME after ESD for early-stage low rectal cancer.

2. Case report
2.1. Patient & method
We performed additional resections in patients with low rectal cancer who could not undergo complete resection by ESD. Patients were retrospectively enrolled at a single center (Tonan Hospital) between January 2019 and December 2021, excluding patients aged ≥90 years and American Society of Anesthesiologists physical status classification (ASA-PS) ≥3. This study is registered with the ResearchRegistry and the

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unique identifying number is: researchregistry8205 (https://www.researchregistry.com/browse-the-registry#home/). This case series has been reported in line with the PROCESS Guideline [4]. Curative researchregistry.com/browse-the-registry#home/ ). This case series unique identifying number is: researchregistry8205 (https://www.

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Table 1

| Case | Age | Sex | BMI | Location of lesion | Histological type | Tumor size (mm) | Depth of invasion (μm) | Vascular invasion | Budding |
|------|-----|-----|-----|------------------|------------------|-----------------|----------------------|------------------|---------|
| 1    | 72  | F   | 24.8| Rb, 7 cm         | tub1             | 28 × 26         | 1400                 | ly1, v0           | BD1     |
| 2    | 45  | F   | 26.1| Rb, 2.5 cm       | tub1-muc         | 35 × 27         | 4000                 | ly0, v1           | BD2     |
| 3    | 57  | M   | 22.6| Rb, 6 cm         | tub1-tub2        | 33 × 27         | 1000                 | ly1, v1           | BD1     |
| 4    | 77  | F   | 21.2| Rb, 7 cm         | tub1             | 28 × 26         | 3000                 | ly1, v1           | BD2     |
| 5    | 81  | M   | 22.4| Rb, 7 cm         | tub1 > tub2      | 25 × 20         | 4300                 | ly0, v1           | BD1     |
| 6    | 55  | M   | 19.1| Rb, 4 cm         | tub2 > tub1, por1| 27 × 21         | 7000                 | ly0, v1           | BD1     |

* Distance from the anal verge to the lesion.

† ly: lymphatic vessels invasion; v; vein invasion.

‡ BD; budding grade.
agencies in the public, commercial, or not-for-profit sectors.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Ethical approval

This is an observational study. The Tonan Hospital Research Ethics Committee has confirmed that no ethical approval is required.

Consent

The subjects provided informed consent, and patient anonymity was preserved.

Registration of research studies

This study is registered with the ResearchRegistry and the unique identifying number is: researchregistry8205 (https://www.researchregistry.com/browse-the-registry#home/).
Guarantor

Mamoru Miyasaka

CRediT authorship contribution statement

Conception and study design: M. Miyasaka, S. Kitashiro
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Declaration of competing interest

There are no conflicts of interest to declare.

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The participant has consented to the submission of the case report to the journal.

The work has been reported in line with the PROCESS criteria.

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