

## ENDOSCOPIC RADICAL TREATMENT IN EARLY RECTAL CANCER

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### SUMMARY:

The standard radical treatment for early rectal cancer includes a removal of the tumor with total mesorectal excision. There are lots of new techniques for endoscopic treatment which could shift the strategy for obtaining the postoperative results. We report our radical endoscopic treatment of early rectal carcinoma by endoscopic submucosal dissection. Forty five patients with early-stage rectal cancer (carcinoma in situ, T1sm1 and T1sm2) were enrolled. All of them were staged by 3-D endorectal ultrasound. In 43 cases, of the tumors were endoscopically removed. No oncological results were report. The bleeding was stopped by endoscopic hemostasis. No systematic complications were observed. No mortality was observed. The ESD procedure for early-stage rectal cancers is feasible and safe. The postoperative results are significantly better in comparison of radical surgical treatment. The perioperative morbidity is different as type and the postoperative period is shorter.

**Key words:** radical treatment, rectal cancer, endoscopic treatment, 3-D endorectal ultrasound, endoscopic submucosal dissection

### INTRODUCTION:

Rectal cancer is one of the commonest gastrointestinal cancers worldwide. Low anterior resection and abdomino-perineal resection with total mesorectal excision are the standard treatment methods used for patients with low rectal cancer. However, rectal resection requires surgical intervention with considerable morbidity. Low rectal cancer presents a challenge to surgeons with regard to local disease control and sphincter preservation. With conventional abdomino-perineal resection, an acceptable local control rate can be achieved; however, the permanent stoma is associated with an increased risk of sexual and/or urinary dysfunction. Endoscopic resection and transanal excision are regarded as alternative procedures to radical surgery in patients with early rectal

cancer. Analysis of surgically resected specimens revealed that in cases of early colon cancer with a depth of invasion of >1000 µm from muscular layer (SM 1 or SM2), no lymphatic invasion, no vascular involvement, or without a poorly differentiated adenocarcinoma component, curative resection can be obtained by endoscopic treatment. Endoscopic submucosal dissection (ESD) is an advanced technique, compared with EMR, by which higher *en-bloc* resection and lower rates of tumor recurrence are achieved. However, until now, no comparisons between transanal excision and endoscopic resection in patients with early rectal cancer have been made.

**The aim** of the present study was to compare complete resection and recurrence of early rectal cancer after transanal excision to endoscopic resection, and to investigate the safety and efficacy of transanal excision compared to endoscopic resection for early rectal cancer.

### MATERIAL AND METHODS

Between May 2009 and December 2012, 45 patients were selected for the study. Candidates for transanal excision were chosen according to the following criteria: the mobility, size (< 3.5 cm), and accessibility (usually within 16 cm of the anal verge) of the tumor.

Criteria for endoscopic resection of early rectal cancer at our institution included the following: (1) well or moderately differentiated adenocarcinoma on the forceps biopsy; (2) the mucosal or minute submucosal (sm1 < 1000 µm or sm2, diagnosed ultrasonographically by endorectal ultrasound) type; (3) no lymphatic or vascular invasion. Whether these criteria were satisfied or not was not known before endoscopic resection. The decision to treat cancer patients with endoscopic resection was therefore based on 3-D endorectal ultrasonography with special soft wear evaluation of the submucosal layer. After the endoscopic resection procedure, the patients were regularly re-examined by means of colonoscopy and/or abdominal computed tomography.

### Endoscopic resection:

In 45 cases, the neoplasm was a flat or excavated type, submucosal hypertonic saline mixed with epinephrine (1:10 000) was injected to make a mucosal bleb. The lesion was incised and dissected if larger than 3 cm (Endoscopic submucosal dissection, ESD). The resected specimens were washed in normal saline, fixed in 8% formaldehyde solution, and embedded in paraffin. Complete resection was defined as free of marginal invasion by cancer cells.

### Complete resection rate

Forty-five patients were included in the study. One patient was found to have positive resection margins on the endoscopic resection specimen. Therefore, the number of complete resections carried out on the 43 endoscopic patients was 42 (97.7%).

### Tumor and patient characteristics

There were 21 males and 22 females in the endoscopic resection group. The mean age was  $59.8 \pm 8.9$  years in the endoscopic resection group. The mean tumor size was  $1.8 \pm 1.0$  cm and the main tumor location from

the anal verge was  $9.6 \pm 6.5$  cm. The histological diagnosis of the tumors was that of well differentiated adenocarcinoma in all 43 patients. The tumor invasion depth in the endoscopic resection group was mucosa in 14 and sm1 ( $< 1000 \mu\text{m}$ ) in 1 patient.

### Clinical outcomes

The median follow up period was 12.0 mo (6-70 mo). There was one episode of delayed bleeding after the endoscopic resection that was managed successfully by endoscopic hemoclipping. This episode of delayed bleeding did not need a transfusion and the patient was hospitalized and treated for 2 d. The mean hospital-stay was  $2.7 \pm 1.1$  d. During a median follow-up period 12.0 mo, all 43 patients in the endoscopic resection group were free of disease recurrence.

**In conclusion,** endoscopic resection was safe and effective for the treatment of early rectal cancers; the outcomes were comparable to patients undergoing a transanal excision. In addition, the endoscopic resection had the advantage of a shorter hospital recovery.

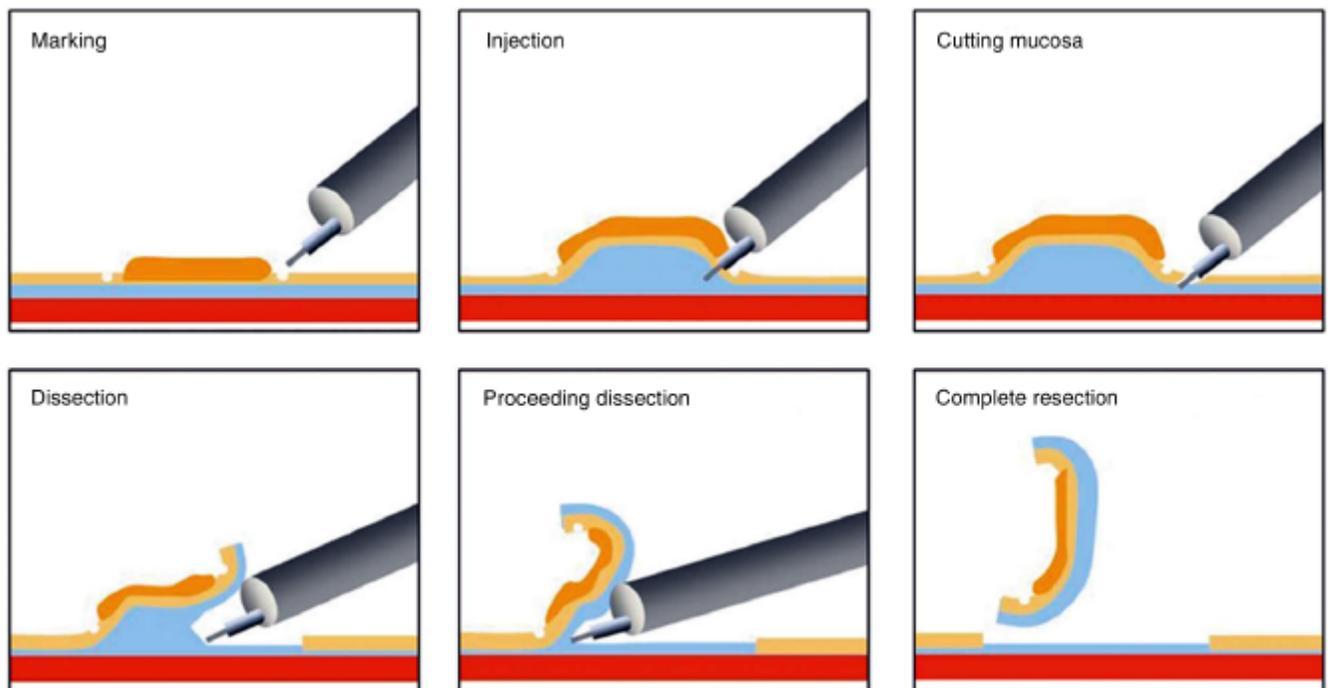
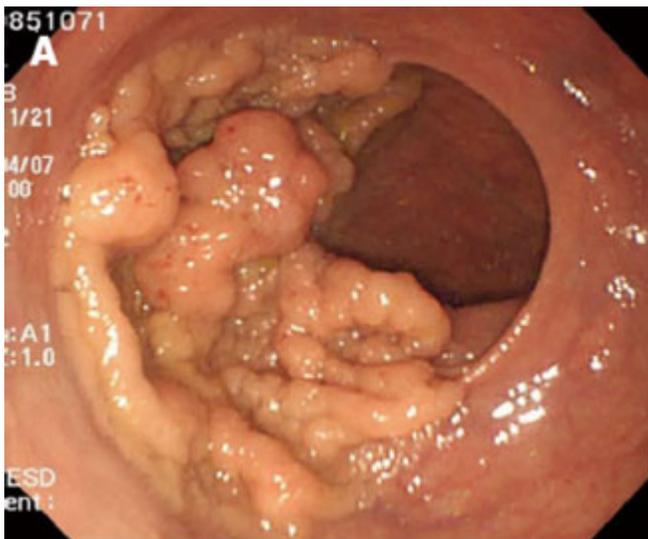


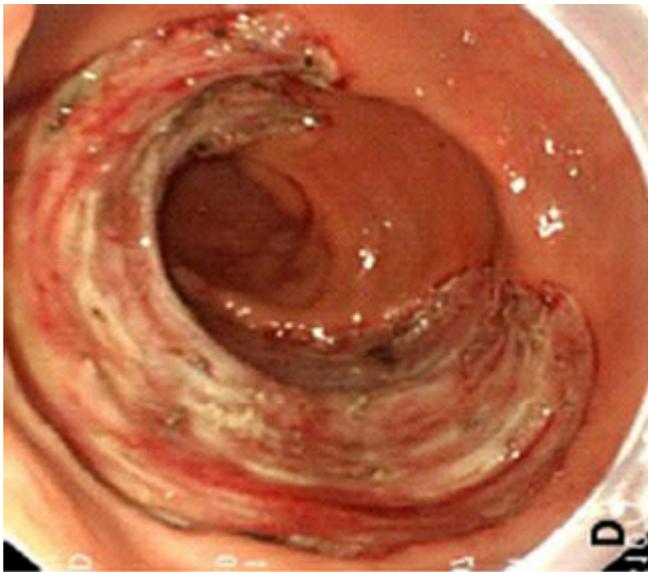
Fig. 1. The method of endoscopic submucosal dissection



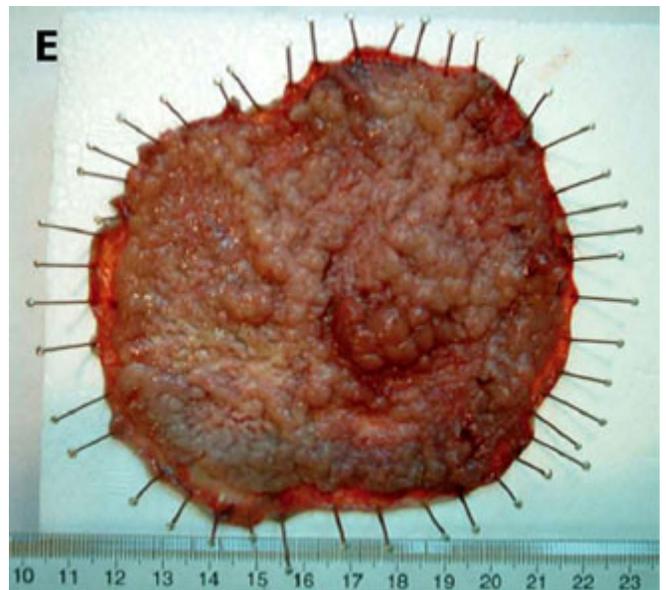
**Fig. 2.** Bulky tumor with locus of carcinoma in situ



**Fig. 3.** Initial mucosal incision



**Fig. 4.** Final layout after specimen removal



**Fig. 5.** The specimen

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