A New Technique in Treatment Of Giant Lateral Spreading Tumors With Endoscopic Submucosal Dissection; Pocket Creation Tunneling Method

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Introduction:
Endoscopic submucosal resection (ESD) has been widely accepted as an effectual and minimally invasive treatment for patients with premalignant lesions. ESD allows en bloc resection of a lesion, irrespective of the size. However, en-bloc resection of large laterally spreading tumors (LSTs) with ESD is difficult technically because of anatomical features of the lesion including its longer length, narrower lumen, and thinner wall and needs longer procedure time in the colon. The pocket-creation method (PCM) is a new technique in overcoming these difficulties of ESD in the treatment of colorectal lesions ≥5 cm in size. But for larger lesions both the vascular structures and submucosal area to be dissected is larger. We investigated the efficacy of pocket creation tunneling method (PCM-t) in giant (≥5 cm) LSTs.

Aims & Methods: A total of 426 ESD procedures, which were performed in the esophagus, stomach, colorectum and duodenum between April 2012 and October 2015, were recorded prospectively before and after the procedure. Totally 246 ESD procedures were performed in the colorectum. Patients with lesion size <5 cm (n=156) and those who did not have at least one endoscopic follow-up (n=50) were excluded from the study. The data of the rest 32 patients with lesion size ≥5cm were analyzed retrospectively. The patients were divided into two groups; namely the ESD and PCM-t, according to the technique used. The en-bloc and complete resection rates, complications, size of lesions, pathological results, length of procedure and dissection speed, and frequency of hemostatic forceps use in both groups were compared.

Indications for ESD for colorectal tumors
Laser ablation is required in lesions for which endoscopic en bloc resection with snare ESD is difficult to apply
- LST-N0, particularly LST-N1 (PO)
- Carcinoma with shallow T1 (SM) invasion
- Lesions showing a 5 type pit pattern
- Large depressed-type tumors
- Large protruded-type lesions suspected to be carcinoma
- Malignant tumors with submucosal fibrosis
- Sporadic localized tumors in conditions of chronic inflammation such as ulcerative colitis
- Local residual or recurrent early carcinomas after endoscopic resection.

Results: Standard ESD was performed in 32 patients and PCM-t in 15 patients. There were no statistically significant differences between the two groups regarding age, gender, duration of procedure, size and type, endoscopic view, localization and pathological results of the lesions (p>0.05). The dissection rate was higher in the PCM-t group and the frequency of hemostatic forceps use was less (p=0.046 and 0.049, respectively). En-bloc and complete resection rates were higher in PCM-t group and complication rate was less.

<table>
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<td>26/80</td>
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In conclusion, pocket creation tunneling method seems to be a helpful technique in en-bloc resection of large colorectal tumors ≥5 cm.

Conclusion:
Using PCM-t in giant colorectal lesions can increase en-bloc resection rate, help in controlled dissection, decrease use of forceps besides decreasing the length of duration and increasing dissection rate.

Table 1. Summary of the comparison between ESD and PCM-t groups

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