Endoscopic Treatment for Rectal Carcinoids in the GI Tract

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Introduction

Rectal carcinoid tumors are uncommon, representing 1.8% of all anorectal neoplasms, and are relatively slow-growing tumors. However, due to the widespread performance of screening colonoscopy, the incidence of rectal carcinoid tumors is on the rise. Rectal NETs typically present as small, localized tumors that are good candidates for local treatment. The early detection of small rectal carcinoid tumors has contributed to expanding candidacy for endoscopic treatments and increasing the rate of successful local excisions, as well as the five-year survival rate. Endoscopic mucosal resection (EMR) is widely used to treat superficial colorectal neoplasms confined to the mucosa or superficial submucosa. With advances in EMR techniques, its indications have been broadened. However, the optimal treatment methods and recommendations for disease surveillance after tumor resection have not been well established.

Feasibility of endoscopic treatment for rectal carcinoid tumors according to tumor size

This study was aimed to assess whether endoscopic treatment for rectal carcinoid tumors is feasible by comparing the rates of en bloc resection, histological complete resection, complication incidence, and tumor recurrence after endoscopic treatment according to tumor size.

Endoscopic treatments including conventional EMR, EMR-C, and ESD were performed on 101 patients among 111 patients diagnosed to have rectal carcinoid tumor at Severance Hospital in Seoul, Korea, between January 2005 and December 2009. All patients were confirmed to have no muscular layer invasion, no metastases to the lymph nodes or distal organs, and no atypical histological features. The patients were categorized into three groups by tumor size: (A) 1~10 mm, (B) 11~15 mm, and (C) 16~20 mm. We retrospectively reviewed their endoscopic pictures/videos and medical records including characteristics of the patients and tumors, rates of en bloc resection, histological complete resection, complication incidence, local recurrence of tumor or distant metastases after endoscopic treatment, and statistically analyzed differences among the 3 groups categorized by tumor size.

Among the 3 groups, significant differences in baseline characteristics of patients and tumors were not
shown. Although the rates of En Bloc resection and pathologic complete resection did not differ according to tumor size, complication incidence and the rates of local recurrence, metastasis, and need for additional rescue therapy were higher as tumor size was larger (complication rate; 8.1%, 21.4%, 46.2%, p=0.001/recurrence rate; 1.4%, 7.1%, 38.5%, p<0.001/metastasis rate; 1.4%, 7.1%, 23.1%, p=0.004/ need for rescue therapy; 5.4%, 21.4%, 61.5%, p<0.001, in A, B, C group, respectively). In the multivariate analysis for the risk factors of additional treatment after endoscopic treatment of rectal carcinoid, method of endoscopic treatment, invasion depth, and En Bloc resection were not found to be independent risk factors, but only tumor size was an independent risk factor (RR of 11~20 mm to 1~10 mm in tumor size; 13.098, p=0.008/ RR of 16~20 mm to 1~15 mm in tumor size; 20.894, p=0.002). ESD was superior to EMR/EMR-C in terms of the rates of endoscopically and pathologically complete resection and complication. However, the procedure time of ESD was longer than EMR/EMR-C and the rate of additional rescue therapy after ESD did not reveal statistical differences as compared with EMR/EMR-C in all groups.

Feasibility of salvage endoscopic mucosal resection using a cap (EMR-C) for remnant rectal carcinoids after primary EMR

Endoscopic mucosal resection using a cap (EMR-C) is a useful procedure to dissect the submucosal layer by suction using a transparent cap and to ensure a safe margin easily. The aim of this study was to assess the efficacy and safety of salvage EMR-C in the treatment of remnant or locally recurrent rectosigmoid tumors following primary EMR or polypectomy.

Salvage EMR-C was performed on 35 patients who had remnant or locally recurrent rectosigmoid tumors after primary EMR or polypectomy between January 2007 and December 2009. Their pre- and post-treatment data including clinical, endoscopic, pathological results, complications, and follow-up results were retrospectively reviewed.

Mean age of the patients was 52.7 ± 11.7 (30~78) years. The most common location of the tumors was rectum (32; 91.4%). Mean size of the tumors was 9.3 ± 3.5 (5.0~18.0) mm. Before salvage EMR-C, 31 patients (88.6%) had carcinoid tumor, two (5.7%) had tubular adenoma, and two (5.7%) had adenocarcinoma. Mean procedure time of salvage EMR-C was 9.3 ± 3.7 minutes and clear resection margins were pathologically confirmed in all the 35 patients. The main complication of salvage EMR-C was bleeding that occurred in 9 patients (25.7%), all of which were completely treated by hemoclipping. The results of the one year follow-up using colonoscopy and CT were all negative in terms of recurrence.

Surveillance strategy for rectal neuroendocrine tumors according to recurrence risk stratification

Rectal neuroendocrine tumors (NETs) have been increasing in incidence. Rectal NETs typically present as small, localized tumors that are good candidates for local treatment. However, the recommendations for disease surveillance after tumor resection have not been well established. We evaluated the long-term outcomes of rectal NETs and surveillance strategies according to recurrence risk stratification.

From January 2000 to July 2011, a total of 263263 patients diagnosed with rectal NETs were identified from
the medical database at our institution. Seventy-five pa-tient patients were excluded due to synchronous rectal cancer (n=1), distant metastasis at initial presentation (n=4), or ≤ 12 months of follow-up (n=70). Patient characteristics, treatment methods, recurrence rates, risk factors of recurrence, and surveillance schedules were ana-lyzed. The mean duration of follow-up was 40.8 months (range: 13-151).

A total of 188 patients were included in this study. The male-to-female ratio was 1.29:1 and the mean age at diagnosis was 50.6 years. The mean tumor size was 6.5 mm (range: 1-30). One hundred forty-four patients (76.6%) were treated with endoscopic resection, and 44 patients (23.4%) were treated with surgical resection as the initial treatment. During the follow-up period, ten patients (5.3%) had disease recurrence, including one case of local recurrence and nine cases of recurrence at a distant site.

Tumor size greater than 10mm (OR 17.4, 95% CI 3.2-95.1), invasion of the muscularis pro-pria (OR 114.7, 95% CI 19.9-660), increased mitotic index (OR 37.7, 95% CI 5.7-248.2), lymphovascular invasion (OR 29, 95% CI 5.8-144.7), and regional lymph node metastases (OR 31.9, 95% CI 7.5-135.9) were statistically significant predictors of recurrence by uni-variate analysis. Among 152 patients without risk factors of recurrence, only one patient who underwent transanal resection had a local recurrence at 15 months after surgery. During the overall follow-up period, endoscopy and imaging studies were performed every 27.9 months and 13 months, respectively.

Conclusions

In rectal carcinoid tumors with size < 10 mm in size, endoscopic treatment might be the most feasible and both EMR/EMR-C and ESD showed similar efficacy and safety. However, although endoscopic treatment could be safely performed on highly selected cases when the tumor size is 11 to 15 mm, surgery is still indicated recommended for rectal carcinoid tumors which are larger than 10 mm because of the high risk of need forchance for additional rescue therapy and metastasis needed later. Moreover, EMR-C might be an easy, safe, and efficacious salvage therapeutic option for the complete resection of remnant and locally recurrent rectal carcinoid tumors. Finally, patients with rectal NETs showed favorable clinical outcomes and had a low rate of recurrence. We suggest that intensive surveillance with endoscopy or imaging study is not required in patients without risk factors for recurrence.

References