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Clinical outcomes of endoscopic submucosal dissection for early gastric cancer in the remnant stomach after gastrectomy

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Title: Endoscopic submucosal dissection for early gastric cancer in the remnant stomach after gastrectomy
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Summary

Endoscopic submucosal dissection (ESD) for early gastric cancer (EGC) has been widely accepted as a standard treatment in Korea and Japan [1,2]. However, ESD for EGC after gastrectomy (remnant EGC) is a technically difficult procedure because of the narrow working space in the remnant stomach as well as the existence of severe fibrosis and staples under the suture line [3]. Therefore, ESD for remnant EGC is not yet widespread. The aim of this study was to evaluate clinical results including short-term and long-term outcomes to determine the feasibility and effectiveness of ESD for remnant EGC. The authors retrospectively investigated patients who had undergone ESD for remnant EGC from 1997 to 2011 at the National Cancer Center Hospital in Tokyo, Japan. A total of 128 consecutive patients after gastrectomy - 87 (68%) distal, 25 (19.5%) proximal and 16 (12.5%) pylorus-preserving - with 139 lesions were enrolled. The median tumor size was 13 mm (range 1-60 mm), and the median procedure time was 60 min (range 15-310 min). *En bloc* resection and curative resection were achieved in 131 (94%) and in 109 (78%) lesions, respectively. For 22 (16%) lesions the resection was non-curative, and 8 (6%) lesions had a horizontal margin of positive or inconclusive results after resection. Adverse events included 2 (1.4%) cases of delayed bleeding; no patient required blood transfusion and 2 (1.4%) perforations; 1 patient required emergency surgery. The 5-year overall survival was 87.3%, and no patient died of gastric cancer during a median follow-up period of 4.5 years (range 0-13.7 years). Local recurrences were detected in 2 (1.6%) patients with non-curative resections and metachronous cancers were found in 8 (6.3%) patients. Based on the favorable long-term outcomes, the authors concluded that ESD for remnant EGC was a feasible and effective therapeutic method and should become the standard treatment in such cases [3].

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Conflict of Interest: None

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Opinion

In the past, remnant gastric cancer (RGC) was commonly detected at an advanced stage that resulted in low rates of curative resection (38-40%) and a consequently poor prognosis [4,5]. However recently, early detection of RGC is increasing due to recent advances in diagnostic techniques and endoscopic surveillance programs [6,7]. Radical surgical resection has previously been considered to be the only method for achieving cure of RGC. However, surgery still has relatively high postoperative morbidity and mortality [8,9]. Consequently, in the absence of evidence for lymph node (LN) metastasis, ESD offers the possibility of cure without the risks associated with a surgical procedure [10]. However, the few earlier reports on ESD for remnant EGC included relatively small numbers of patients and they had short follow-up period [10-15].

Chung *et al* [1] in Korean ESD study group have reported rates of *en bloc* resection, complete resection, and curative resection of 95%, 90% and 88%, respectively and Oda *et al* [16] also reported 98%, 93%, and 84%, respectively in unresected stomach. Reported rates of *en bloc* resection, complete resection, and curative resection of ESD for remnant EGC were 93-100%, 85-91.7%, and 74-91.7%, respectively [10-15]. In this study, Nonaka *et al* [3] reported rates of *en bloc* resection, complete resection, and curative resection of 94%, 85%, and 78%, respectively; being slightly lower than the corresponding rates of ESD for unresected stomach, but similar to those for remnant EGC.

Considering the long-term outcomes, the 5-year overall and cause-specific survival rates were 87.3%, 100%, respectively. The 5-year survival rate was lower than the rate of 92.4% to 95.6% reported in the article on regular gastric ESD reported by Gotoda *et al* [17], but it was similar to the 3-year overall survival rate (85%) of ESD for remnant EGC reported by Nishide *et al* [12]. According to the authors, this discrepancy was explained by the different patient populations included in the studies and the by slightly higher mean age of patients in their study. The authors identified metachronous cancers (6.3%) and local recurrences (1.6%), which were similar to those detected in an unresected stomach study [18].

The major complications of ESD are perforation and delayed bleeding. In previous studies of ESD for remnant gastric cancers, the bleeding and perforation rates were 0-18% and 0-18%, respectively [10-15]. In this study, adverse events rates were very low, including two perforations and two delayed bleedings. Authors did not explain the reasons of their low complication rates, but there are several possible explanations to my knowledge. ESD might have been performed by technically qualified experts with appropriate devices including knives and cap or hood. In addition, the authors routinely might have performed coagulation of visible vessels using hot biopsy forceps or argon plasma coagulation, as recent trends recommend, which may have led to lower rates of delayed bleeding.

Relative strengths of this study are the inclusion of a large number of patients and the long follow-up period, the longest in any previously published report on ESD for remnant EGC [3].

This study was a retrospective, single-center study, and included 9 deaths from unknown causes in the analysis of the long-term outcomes. Although the overall follow-up period was long enough, a number of patients were observed for less than 1 year. Moreover, the authors did not evaluate the effect of ulcerative EGC, of lesions involving the anastomotic site or surgical suture line on the treatment and complications outcome; previous studies have reported a marked decline in successful treatment and increased complications rate [12,13]. Nonetheless, this study showed wonderful results in short-term, long-term outcomes and safety. Therefore, I believe that this article provides important evidence for endoscopists to select and perform ESD treatment for remnant EGC. In my experience, I recommend that only highly skilled and experienced endoscopists should perform ESD of remnant gastric cancers, especially around the suture line because it is technically difficult despite the good results of this study.

References

1. Chung IK, Lee JH, Lee SH, et al. 1000 cases of endoscopic submucosal dissection for early gastric neoplasms: Korean ESD Study Group multicenter study. *Gastrointest Endosc* 2009;**69**:1228-1235.
2. Gotoda T. Endoscopic resection of early gastric cancer. *Gastric Cancer* 2007;**10**:1-11.
3. Nonaka S, Oda I, Makazu M, et al. Endoscopic submucosal dissection for early gastric cancer in the remnant stomach after gastrectomy. *Gastrointest Endosc* 2013;**78**:63-72.
4. Sasako M, Maruyama K, Kinoshita T, Okabayashi K. Surgical treatment of carcinoma of the gastric stump. *Br J Surg* 1991;**78**:822-824.
5. Newman E, Brennan MF, Hochwald SN, Harrison LE, Karpeh MS. Gastric remnant carcinoma: just another proximal gastric cancer or a unique entity? *Am J Surg* 1997;**173**:292-297.
6. Jung KW, Yim SH, Kong HJ, et al. Cancer survival in Korea 1993-2002: a population based study. *J Korean Med Sci* 2007;**22**(Suppl):S5-S10.
7. Komatsu S, Ichikawa D, Okamoto K, et al. Progression of remnant gastric cancer is associated with duration of follow-up following distal gastrectomy. *World J Gastroenterol* 2012;**18**:2832-2836.
8. Piso P, Meyer HJ, Edris C, Jähne J. Surgical therapy of gastric stump carcinoma-a retrospective analysis of 109 patients. *Hepatogastroenterology* 1999;**46**:2643-2647.
9. Ahn HS, Kim JW, Yoo MW, et al. Clinicopathological features and surgical outcomes of patients with remnant gastric cancer after a distal gastrectomy. *Ann Surg Oncol* 2008;**15**:1632-1639.
10. Takenaka R, Kawahara Y, Okada H, et al. Endoscopic submucosal dissection for cancers of the remnant stomach after distal gastrectomy. *Gastrointest Endosc* 2008;**67**:359-363.
11. Lee JY, Choi IJ, Cho SJ, et al. Endoscopic submucosal dissection for metachronous tumor in the remnant stomach after distal gastrectomy. *Surg Endosc* 2010;**24**:1360-1366.
12. Nishide N, Ono H, Kakushima N, et al. Clinical outcomes of endoscopic submucosal dissection for early gastric cancer in remnant stomach or gastric tube. *Endoscopy* 2012;**44**:577-583.
13. Tanaka S, Toyonaga T, Morita Y, et al. Endoscopic submucosal dissection for early gastric cancer in anastomosis site after distal gastrectomy. *Gastric Cancer* 2013, in press.
14. Hoteya S, Iizuka T, Kikuchi D, et al. Clinical advantages of endoscopic submucosal dissection for gastric cancers in remnant stomach surpass conventional endoscopic mucosal resection. *Dig Endosc* 2010;**22**:17-20.
15. Hirasaki S, Kanzaki H, Matsubara M, et al. Treatment of gastric remnant cancer post distal gastrectomy by endoscopic submucosal dissection using an insulation-tipped diathermic knife. *World J Gastroenterol* 2008;**14**:2550-2555.
16. Oda I, Gotoda T, Hamanaka H, et al. Endoscopic submucosal dissection for early gastric cancer: technical feasibility, operation time and complications from a large consecutive series. *Dig Endosc* 2005;**17**:54-58.
17. Gotoda T, Iwasaki M, Kusano C, Seewald S, Oda I. Endoscopic resection of early gastric cancer treated by guideline and expanded National Cancer Centre criteria. *Br J Surg* 2010;**97**:868-871.
18. Kosaka T, Endo M, Toya Y, et al. Long-term outcomes of endoscopic submucosal dissection for early gastric cancer: A single-center retrospective study. *Dig Endosc* 2013, in press.