



Laparoscopy-Assisted Endoscopic Full-Thickness Resection with Basin Lymphadenectomy Based on Sentinel Lymph Nodes for Early Gastric Cancer

Hoon Hur, MD, PhD, Sun Gyo Lim, MD, Cheulsu Byun, MD, Joon Koo Kang, MD, Sung Jae Shin, MD, PhD, Kee Myung Lee, MD, PhD, Jin Hong Kim, MD, PhD, Yong Kwan Cho, MD, PhD, Sang-Uk Han, MD, PhD

Gastric cancer is one of the most common malignant tumors worldwide. The incidence of gastric cancer in East Asia, including Korea and Japan, is higher than in other regions, so the screening system in these regions has evolved to diagnose those with gastric cancer at an early stage.¹ Therefore, the proportion of patients with early gastric cancer (EGC) in these areas has recently increased. Patients with EGC have an excellent prognosis after curative resection, owing to low rates of lymph node metastasis and distant recurrence in the peritoneum and liver relative to patients with advanced-stage gastric cancer. Because lymph node metastasis is limited to a small number of perigastric lymph nodes even in EGC, some patients have been treated with limited (D1+) lymphadenectomy.² In contrast with standard surgical procedures that include extended (D2) lymphadenectomy for gastric cancer, D1+ lymphadenectomy can be easily performed to reduce postoperative morbidity.³ However, despite this, a total or subtotal gastrectomy should still be performed for EGC because a D1+ lymphadenectomy includes lymph nodes around the major vessels feeding the stomach. Extensive gastric resection that includes resection of the pylorus and autonomic nerve fibers can have a negative impact on quality of life after surgery, owing to reflux gastritis and uncontrolled bowel movements. Considering the long survival time of patients with EGC, function of the stomach should be maintained after complete resection of gastric cancer.

Drs Hur and Lim contributed equally to this work.

Disclosure Information: Nothing to disclose.

Support: This study was supported by a grant from the National R&D Program for Cancer Control, Ministry of Health & Welfare, Republic of Korea (1320270).

Received February 27, 2014; Revised May 4, 2014; Accepted May 5, 2014. From the Departments of Surgery (Hur, Byun, Cho, Han) and Gastroenterology (Lim, Kang, Shin, Lee, Kim), Ajou University School of Medicine, Suwon, Korea.

Correspondence address: Hoon Hur, MD, PhD, Department of Surgery, Ajou University School of Medicine, 206 Worldcup-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea, 443-749. email: hhcmc75@naver.com

One of the evolving modalities to maintain gastric function after removal of gastric cancer is endoscopic resection. Although endoscopic resection has been reserved for patients with EGC who are very unlikely to have metastatic lymph nodes, the proportion of gastric cancer patients treated with endoscopic resection has gradually increased as more patients are being diagnosed with EGC.⁴ Development of the endoscopic resection technique can eliminate the limitation with regard to the range of en bloc resection in cases of mucosal cancers without metastatic lymph nodes, and furthermore expand the depth of resection into the submucosal layer.⁵ Therefore, several gastroenterologists have been performing endoscopic resections using the extended criteria for this procedure suggested by previous reports.^{2,6} However, despite the many benefits regarding quality of life, the temerarious use of endoscopic resection should be limited due to the lack of clinical evidence and limited ability for the identification of metastatic lymph nodes. On the other hand, if it becomes possible to confirm lymph node status and to perform minimal lymph node dissection for patients with EGC who meet the expanded indications for endoscopic treatment, then local resection such as endoscopic resection might be the best option.

A major premise of local resection in gastric cancer surgery is minimization of the range of lymphadenectomy to preserve the vessels and nerves supplying the stomach. To achieve this aim, sentinel lymph node navigation during surgery for EGC has been attempted in a clinical trial setting.⁷⁻⁹ Unfortunately, in contrast to several other malignant tumors such as melanoma and breast cancer, the indication, type of dye, and interpretation of sentinel nodes in gastric cancer has not been established.¹⁰ However, several recent reports have demonstrated that sentinel node navigation using a laparoscopic procedure for gastric cancer was effective for identifying metastatic lymph nodes.^{8,9} Therefore, if sentinel lymph node detection is at least included in the local resection of primary tumors according to the extended indications for

Abbreviations and Acronyms

EGC	= early gastric cancer
ESD	= endoscopic submucosal dissection
IGC	= indocyanine green
LAEFTR	= laparoscopy-assisted endoscopic full-thickness resection

endoscopic treatment, then the limitations of endoscopic resection could be negated.

To date, a few clinical studies have reported that local resection for EGC with regional lymphadenectomy was feasible.¹¹⁻¹³ However, 2 studies resulted in an additional regional lymphadenectomy after the endoscopic resection, requiring 2 separate procedures.^{11,12} Only 1 report noted that endoscopic full-thickness resection of the gastric wall in tandem with laparoscopic regional lymphadenectomy based on sentinel nodes was applicable for 14 patients with EGC.¹³ However, 35% of the operations for patients in this study were converted to conventional gastrectomies during the intraoperative or postoperative periods. Moreover, local resection of the stomach and regional lymphadenectomy using sentinel lymph node navigation for curative resection is still elusive. Therefore, we constructed a prospective pilot study to evaluate the efficacy of laparoscopy-assisted endoscopic full-thickness resection (LAEFTR) with sentinel node navigation surgery for patients with EGC. The criteria for recruiting patients for LAEFTR in our study were more restrictive than in previous studies because we wanted to show the reliability and safety of our procedure.

The aims of this pilot study were to describe the technical details of LAEFTR with basin lymphadenectomy for EGC and to assess the surgical and oncologic feasibility of applying this procedure to treat patients diagnosed with EGC, who meet the extended criteria for endoscopic resection.

METHODS**Patients**

Before recruitment, we obtained approval for this study from the institutional review board of Ajou University Hospital (AJIRB-MED-MDB-11-070). Participants for this pilot study were identified by reviewing preoperative data of patients diagnosed with gastric carcinoma. Patients with suspected advanced primary tumor of stage T2 (invasion into the muscle layer) or more and those with metastatic lymph nodes were excluded from the study. In addition, patients with a primary tumor who met the absolute indications for endoscopic resection, and those who previously underwent gastric resection or were treated with other therapeutic

modalities for gastric cancer were excluded. We recruited patients satisfying the extended indication according to the treatment guidelines suggested by the Japanese Gastric Cancer Association.² These included differentiated mucosal tumor >2 cm without ulceration; ulcerative differentiated mucosal tumor ≤ 3 cm; and undifferentiated mucosal tumor ≤ 2 cm without ulceration. In addition, there were several patients with differentiated tumors ≤ 3 cm that were suspected of invading the superficial submucosa based on gastroscopic findings, who were carefully considered according to the extended criteria of endoscopic submucosal dissection suggested by Gotoda and colleagues.¹⁴ If the distance from the margin of the primary tumor to the pyloric ring or the esophagogastric junction was less than 3 cm, patients were not enrolled. We planned to perform an additional operation to obtain curability in patients with final pathologic results, such as involvement of malignancy at the resected margin, tumor invading into the muscular layer, or metastatic lymph nodes in the resected basin.

We explained the aims and methods of our procedure, as well as the possibility of additional surgery to patients, and then obtained the written informed consent from them before recruitment into the study. Of note, patients were informed of the plan to perform additional surgery to obtain curability if their final pathology results showed involvement of malignancy at the resected margin, tumor invasion in the muscular layer, or metastatic lymph nodes in the resected basin. After recruitment, additional gastroscopic biopsies were performed at 4 sites around the primary tumor. These 4 sites were selected based on what the gastroenterologist assumed would be an adequate distance from the primary tumor in order to confirm that the resection margins were free from malignancy before the operation.

Operative technique

Patients fasted from midnight before the day of surgery. A nasogastric tube was not inserted during the perioperative period. Prophylactic antibiotics were injected immediately before general anesthesia, and intermittent pneumatic compression was applied to prevent perioperative thrombosis in the deep veins.

A single surgeon (Hoon Hur) with an experience of more than 100 laparoscopic procedures for gastric cancers performed all of the operations. After induction of anesthesia, patients were placed in the reverse Trendelenburg position. First, a 10-mm trocar was inserted into the peritoneal cavity through the infraumbilical position using an open technique. After carbon dioxide gas insufflation, 3 additional trocars (two 5-mm and one 12-mm) were inserted (Fig. 1). Similar to previously reported methods, after placing all trocars, the liver was retracted to avoid obscuring the operative field.¹⁵ The procedure commenced

Download English Version:

<https://daneshyari.com/en/article/4291973>

Download Persian Version:

<https://daneshyari.com/article/4291973>

[Daneshyari.com](https://daneshyari.com)