

위 절제술

Laparoscopic Surgery for Gastric Cancer

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Hyung - Ho Kim, M.D.
 Department of General Surgery
 Seoul National University College of Medicine
 Bundang Hospital
 E - mail : hhkim@SNUBH.org

18⁸¹ 1 29 , Christian
 Albert Theodor Billroth
 (1829 ~ 1894) 43

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Abstract

Advanced laparoscopic surgeries have been widely practiced with an advent of sophisticated instrumentation and development of new technologies. Selection of laparoscopic therapeutic modalities such as intragastric mucosal resection, local resection, and gastrectomy with lymphadenectomy have been decided by gastric cancer treatment guidelines which will be published in the near future in Korea. The indication of laparoscopic surgery is mainly based on the size of lesion, depth of tumor, and histological type. However in order to extend the indications of laparoscopic surgery for gastric cancer, standardization of the procedure of laparoscopic en - block lymphadenectomy is necessary. For more active adoption of Minimally Invasive Surgery in the field of gastric diseases, it is mandatory to resolve medical insurance obstacle and to verify the advantages of this surgery without harming the basic principles of cancer surgery through prospective randomized studies. It is speculated that the "tailored therapy" with less invasive laparoscopic surgery for stage I, II and more aggressive conventional open surgery for stage III, IV will be the surgical treatment trend for gastric cancer in the near future.

Keywords : Minimally Invasive Surgery; Laparoscopic gastrectomy; Gastric cancer

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(1).

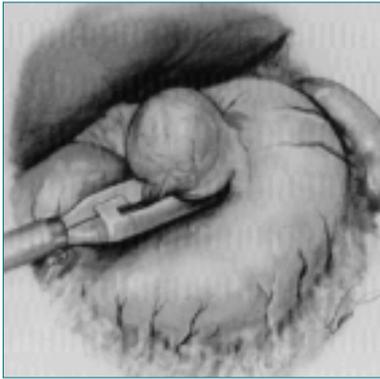
1987 Schlatter가

1940

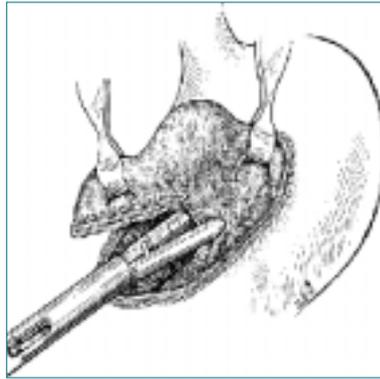
1950 Mc-

Neer Wangenstein

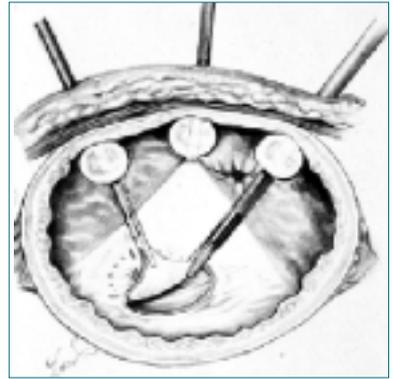
Kajitani가



1.



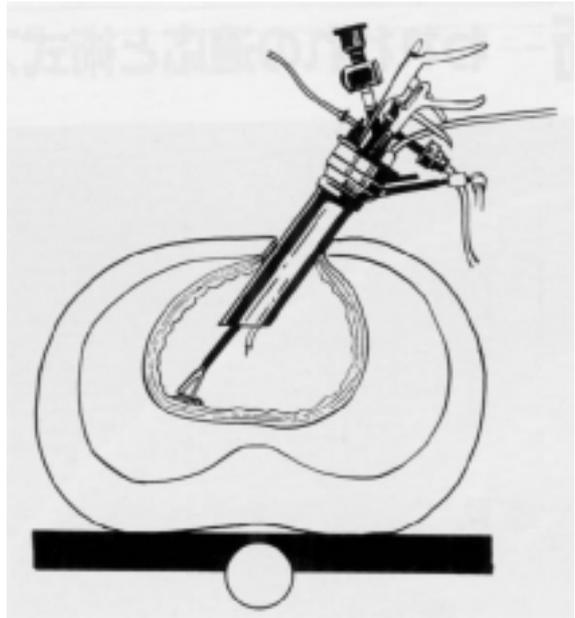
2.



3.

가 (1~2 cm)
 (Wedge resection) “ ?”, “ ?”
 (4, 5). 가
 extraluminal(1), trans- 가
 gastric(2), intraluminal(3) 가
 , exo- 2
 phytic extraluminal , 가?
 endophytic
 transgastric intraluminal . 가 () D1
 intralu- (1)
 minal 가 가 90%
 가 5 cm 가 35%
 가 50%,

가 .
 , CT, MRI
 10 mm 90%
 PET scan
 10 mm 90%
 가 .



4.

surgery

가

25() ~ 15 mm(,)

가 가 .

1. (Interventional Flexible Endoscopic Treatment)
 (T1mm)

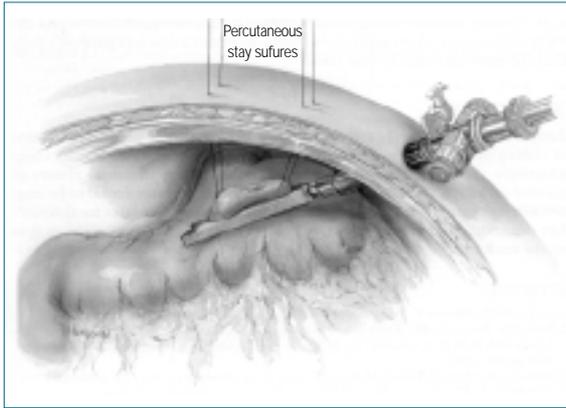
가 (lesser curvature) In-
 nerdyne cannula

가 2 cm
 가 가
 (EMR, endoscopic mucosal resection)

(full - thickness resection)
 가 (3).

2. (Laparoendoscopic Resection)
 Ohashi (6) laparoscopic intragastric

3. (Transgastrostomal Endoscopic Surgery)
 가
 (mucosectomy) (full - thickness



5.

resection) 가 (mid-line incision) (anterior gastrotomy) (gastrotomy) (edge) (operating short proctoscope) (4).

4. (Laparoscopic Gastric Wedge Resection)

fastener localization T - (lesion lifting) (2 cm) 가 (5). Ohgami (7) (EMR) 가 가 . EMR

가 가 가 80~90% 10~20% 가 가 90%

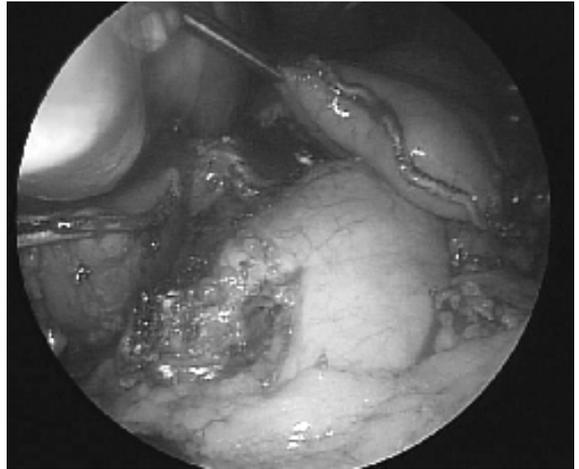
가 15~30% , ,

5. (Laparoscopic Radical Gastrectomy)

가 4%, 20% 1 5% 2 (No. 7, 8) 가 80% D1+ alpha 가 가 laparoscopic radical gastrectomy(8, 9)가 가 (totally intracorporeal



6.



7.

laparoscopic procedure)

(subtotal total)

2

가 (depth perception)

(tactile feedback)

(laparoscopy - assisted procedure)
(laparoscopic technique)

(pneumoperitoneum)

가

가

mini - laparotomy(4~5 cm)

가

(laparoscopic and minilaparotomy gastrectomy)

가

가

가

1. (Diagnostic Laparoscopy)

Bypass

가

, HALS(Hand - assisted laparoscopic surgery)

가

mini - laparotomy

가

가

가
 ,
 bypass () . 가
 .
 (10)(6). 가

2. Laparoscopic D2 Gastrectomy(7) (D2 D3)

2 가 가 .
 .
 T2N1 가
 . 가 T3
 (peri-
 toneal dissemination) 가 3
 가
 D2 (gastrectomy)
 (routine procedure) con- 10
 sensus가
 .
 가 .
 Ohgami .
 가 2002 1,000
 가 ,
 100 .
 가 가 가
 가 , 20~30 , techno-
 logic and instrument based surgery
 가 (harmonic scalpel, argon
 beam coagulator) (trocar, clip

, endo - GIA)

가 .

2001

가 가 .
가

가
가

가

가

(learning curve)

가
가
가가

가

가

“tailored therapy”

가



1. Iris B. Brune. Laparo - endoscopic Surgery. Second ed, Munich : Blackwell Science, 1996 : 125
2. Lau WY, Leung KL, Kwong KH, Davey IC, Robertson C, Ci AK, et al. A randomized study comparing laparoscopic versus open repair of perforated peptic ulcer using sutureless technique. *Ann Surg* 1996 ; 224 : 131 - 8
3. Siu WT, Leong HT, Law BK, Chau CH, Li AC, Li MK, et al. Laparoscopic repair for perforated peptic ulcer : a randomized controlled trial. *Ann Surg* 2002 ; 235 : 313 - 9
4. Choi YB, Oh ST. Laparoscopy in the management of gastric submucosal tumors. *Surg Endosc* 2000 ; 14 : 741 - 5
5. Cuschieri A. Laparoscopic gastric resection. *Surg Clin North Am* 2000 ; 80 : 1269 - 84
6. Ohashi S. Laparoscopic intraluminal (intra-gastric) surgery for early gastric cancer. A new concept in laparoscopic surgery. *Surg Endosc* 1995 ; 9 : 167 - 71
7. Ohgami M, Otani Y, Kumai K, Kubota T, Kim YI, Kitajima M. Curative laparoscopic surgery for early gastric cancer : five years experience. *World J Surg* 1999 ; 23(2) : 187 - 92
8. Kitano S, Iso Y, Moriyama M, Sugimachi K. Laparoscopy - assisted Billroth I gastrectomy. *Surg Endosc* 1994 ; 4 : 2, 146 - 8
9. Uyama I, Sugioka A, Fujita J, Komori Y, Matsui H, Hasumi A. laparoscopic total gastrectomy with distal pancreaticosplenectomy and D2 lymphadenectomy for advanced gastric cancer. *Gastric Cancer* 1999 ; 2 : 230 - 4
10. Lehnert T, Rudek B, Kienle P, Buhl K, Herfarth C. Impact of diagnostic laparoscopy on the management of gastric cancer : Prospective study of 120 consecutive patients with primary gastric adenocarcinoma. *Br J Surg* 2002 ; 89 : 471 - 5