

# Comparison of a Postoperative Pain in Laparoscopy-Assisted Distal Gastrectomy and Totally Laparoscopic Distal Gastrectomy according to the Location of the Mini-Laparotomy Site

Kyung Won Seo, M.D., Ph.D.

Department of Surgery, Kosin University College of Medicine, Busan, Korea

This study compared the postoperative pain associated with the location of the mini-laparotomy sites in gastric cancer patients who underwent a laparoscopic-assisted distal gastrectomy (LADG) or total laparoscopic distal gastrectomy (TLDG). The present study did not observe any benefit for TLDG with a pfannenstiel incision groups in terms of pain, only cosmetic benefits. Therefore, it will be necessary to identify the merits to overcome this problem and broaden the clinical applications in the future.

**Keywords:** Stomach neoplasm, Laparoscopic surgery, Gastrectomy, Surgical wound, Postoperative pain

Received June 3, 2019

Revised June 5, 2019

Accepted June 5, 2019

**Corresponding author**

Kyung Won Seo

Department of Surgery, Kosin

University College of Medicine, 262

Gamcheon-ro, Seo-gu, Busan 49267,

Korea

Tel: +82-51-990-6462

Fax: +82-51-246-6093

E-mail: kwseo.surg@kosin.ac.kr

ORCID:

<https://orcid.org/0000-0002-5771-3832>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © 2019 The Journal of Minimally Invasive Surgery. All rights reserved.

Since the first attempt of laparoscopic distal gastrectomy, the anastomosis and specimen retrieval method has been developed and technical advancements of lymph node dissection have been made. Efforts to introduce totally laparoscopic distal gastrectomy (TLDG), which does not incise the epigastrium, have been steady because of the idea that a mini-laparotomy at the epigastric area for anastomosis in a laparoscopic distal gastrectomy (LADG) is likely to cause less short-term surgical outcomes.<sup>1</sup> In the early era of laparoscopic gastrectomy for gastric cancer, obese patients were regarded as a contraindication of laparoscopic surgery, but the introduction of TLDG was reported to be more advantageous in obese patients. Currently, TLDG has been implemented universally, and new endeavors have been made to reduce the level of

postoperative pain and achieve rapid recovery, such as a reduced port and change in the mini-laparotomy site.<sup>2</sup>

Thus far researchers have suggested various ways to take specimens after gastric surgery. Jeong et al. suggested transvaginal specimen extraction after TLDG for some limited groups of elderly female patients with early gastric cancer.<sup>3</sup> Huscher et al. proposed the transoral extraction of laparoscopically resected large gastric subepithelial tumors.<sup>4</sup> The universal implementation of these methods is restricted because of the limited application or technical difficulties.

Specimen removal has a different principle in oncologic and non-oncologic surgeries. In oncologic surgery, the specimen should not be broken, but must be extracted thoroughly and in one piece.<sup>5</sup> Therefore, the length required for specimen

removal is constant wherever the position changes. In TLDG with an umbilical incision (TLDG\_U), the port used as the camera port during surgery is extended and used for specimen removal, so it does not affect the wound length. A TLDG-U is more advantageous than LADG and TLDG with a Pfannenstiel incision (TLDG-P) compared to the wound size alone. On the other hand, the authors hypothesized that TLDG-P would benefit from a less painful and cosmetic point of view by making an incision in the lower abdomen despite the absence of a wound length advantage. As a result, the authors' study did not show any benefit in terms of pain, but only cosmetic benefits. Therefore, the proposal in this study is limited to those who want less scarring in terms of cosmesis, and it will be necessary to try to identify the merits to overcome this problem and broaden the clinical applications in the future. This problem, as mentioned by the authors, can be overcome by examining patient satisfaction. Another way to overcome the limitations of this study would be if there is no difference in pain using a better pain control technique and by changing the pain control method used in this study.

Nevertheless, this study is meaningful in suggesting a unique method of specimen removal that has not been reported previously. In many reports, early gastric cancer has been reported to have a good long-term survival rate after laparoscopic gastrectomy. Surgeons who have recently undergone gastric cancer surgery are becoming increasingly interested in the quality of life after surgery for early gastric cancer patients. As mentioned above, TLDG-P would be a good alternative for improving the quality of life and satisfaction of patients if the problems of pain control and patient satisfaction can be solved.

## CONFLICT OF INTEREST

None.

## FUNDING

None.

## ACKNOWLEDGMENTS

None.

## REFERENCES

- 1) Zhang YX, Wu YJ, Lu GW, Xia MM. Systematic review and meta-analysis of totally laparoscopic versus laparoscopic assisted distal gastrectomy for gastric cancer. *World J Surg Oncol* 2015;13:116.
- 2) Kim MG, Kawada H, Kim BS, et al. A totally laparoscopic distal gastrectomy with gastroduodenostomy (TLDG) for improvement of the early surgical outcomes in high BMI patients. *Surg Endosc* 2011;25:1076-1082.
- 3) Jeong SH, Lee YJ, Choi WJ, et al. Trans-vaginal specimen extraction following totally laparoscopic subtotal gastrectomy in early gastric cancer. *Gastric Cancer* 2011;14:91-96.
- 4) Huscher CG, Mingoli A, Sgarzini G, Mogini V. Transoral extraction of a laparoscopically resected large gastric GIST. *J Laparoendosc Adv Surg Tech A* 2013;23:707-709.
- 5) O'Brien MG. Principles of oncologic abdominal surgery. *Clin Tech Small Anim Pract* 1998;13:42-46.