Total laparoscopic Billroth-1 gastrectomy compared to open Billroth-1 gastrectomy

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Background: Total laparoscopic Billroth-1 gastrectomy (using the delta-shaped anastomosis) in the treatment of early gastric cancer is becoming more popular and accepted procedure in Japan. However in the world, conventional open Billorth-1 gastrectomy is still mainly performed because of technical difficulties, especially intracorporeal gastroduodenostomy. This study aimed to elicit the efficacy and the feasibility of this procedure compared to the open procedure to the world.

Methods: This is a case-match retrospective study analysis of single institute’s experience in total laparoscopic distal gastrectomy (TLDG) between Aug 2010 and Jul 2012. This procedure was compared with conventional open distal gastrectomy (ODG) as a historical control between Aug 2008 and Jul 2010. We reviewed 100 patients in each group, case-matched with staging and gender. Age for TLDG was 62.9 (±11.1) and 65.4 (±10.7) for ODG. Also, we took same number of M: F ratio in each group which was 62:38. The early gastric cancer was considered for any patient with stage 1a, 1b & 2a. BMI for the first group was 22.5 (±2.6) and for the second group was 22.6 (±3).

Main outcome measures: Operation time, blood loss, number of harvested lymph node, postoperative hospital stay, clinical pathway and postoperative complications are the main outcomes.

Results: There was no difference in the mean age, BMI, gender. There were significant differences (P<.0001) between the two groups in blood loss, operation time & postoperative hospital stay. The estimated blood loss for the TLDG group was 17.9 (±21.8) ml and for the ODG was 234 (±257.7). Operation time for TLDG was 173 (±30.5) min and for the ODG was 204 (±24.7). Post-operative hospital stay for TLDG was 8.5 (±2.4) and for the ODG was 11.2 (±9.5). There was no conversion from laparoscopy to open surgery. There was no difference in complication rate between the two groups.

Conclusion: When skilled surgeon is available, the total laparoscopic distal gastrectomy is more efficient and feasible compared to open distal gastrectomy. Significant reduction in blood loss, post-operative hospital stay and operation time can be gained in TLDG, and contribute to the patients’ quality of life. However, this study has limitations of a retrospective study. Therefore a prospective study should be conducted in near future.

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