Feasibility of laparoscopic sentinel basin dissection for limited gastric resection in early gastric cancer

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Background: Clinical application of sentinel node biopsy (SNB) in early gastric cancer (EGC) had a limitation due to low sensitivity of detecting metastatic lymph nodes. Sentinel basin dissection (SBD) was suggested as the alternative to SNB to improve sensitivity. The aim of this study was to investigate the feasibility of laparoscopic SBD for clinical application of limited gastric resection in EGC.

Methods: Twenty-one gastric adenocarcinoma patients preoperatively diagnosed as cT1N0, were enrolled in the study. After troca placement and exploration of whole abdomen, technetium 99m human serum albumin and indocyanin green were injected at submucosal layer around tumor using an endoscope. Green-stained or radioactive lymphatic basins were identified and defined as sentinel basin (SB). After the laparoscopic SBD, laparoscopy-assisted gastrectomy with D2 lymphadenectomy was performed in all patients. Dissected sentinel basin node (SBN) and non-SBN were evaluated for metastasis by pathologic examination.

Results: Laparoscopy-assisted distal or total gastrectomy was performed in 18 and 3 patients, respectively. Mean number of dissected lymph nodes was 40.8 (2.6. SB identification rate was 95.2% (20/21) and the most common SB was located along the lesser curvature. Mean number of SB and SBN was 1.9 and 7.0, respectively. Two patients with lymph node metastasis were detected by laparoscopic SBD. Frequent bleeding was occurred during the SBD, especially along the lesser curvature.

Conclusions: These findings suggest that laparoscopic SBD is technically feasible. However, problems such as several SB, many SBN and bleeding during the SBD should be considered for clinical application.