

Surgical treatment effects in cancer of the cardia and esophagogastric junction*

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Abstract Objective: To evaluate the treatment effects of total gastrectomy (TG) and proximal gastrectomy (PG) for cancer of the cardia and esophagogastric junction. **Methods:** forty-five patients with cancer of the cardia and esophagogastric junction underwent surgical resection. Of them, 29 were treated using proximal gastrectomy and 16 total gastrectomy. The 3-year and 5-year survival rate and the postoperative complication rate and mortality rate were followed up and compared between the two groups. **Results:** The 3-year and 5-year survival rates of group PG were 44.8% and 20.7%, of group TG were 37.5% and 18.8%, respectively, and the differences were not statistically significant ($\chi^2 = 3.84, P > 0.05$; $\chi^2 = 3.89, P > 0.05$). The postoperative complication and mortality rate of group PG were 13.7% and 6.8%, of group TG was all 6%, respectively. **Conclusion:** Proximal and total gastrectomy treatment effects can not significantly influence the prognosis of patients in progressive stage of cancer of cardia and esophagogastric junction.

Key words stomach neoplasms; surgical procedures, operative; survival rate

Proximal gastrectomy (PG) and total gastrectomy (TG) are the popular surgical treatments for cancer of the cardia and esophagogastric junction. For the early stage, it is prevalent to adopt PG. It is controversial to adopt PG or TG for the advanced stage patients. To explore the influence on the prognosis of advanced stage cancer by the two methods respectively, we analyzed retrospectively 45 cases of cancer of the cardia and esophagogastric junction from 2000 to 2005 on their operation options, clinical stage and prognosis.

Objects and methods

Objects

From Jan. 2000 to Sept. 2005, there were 107 patients of the cardia and esophagogastric junction cancer admitted. 67 of them were carried out radical operations (62.6%). 45 cases had complete clinical data and follow up. There were 16 cases in TG group with 10 males and 6 females, average age 64 years old. There were 29 cases in PG group with 24 males and 5 females, average age 62 years old. The pathological types included 2 papillary form adenocarcinoma, 5 glandular form adenocarcinoma, 1 mucoid adenocarcinoma, 6 poorly differentiated adenocarcino-

ma, 1 undifferentiated adenocarcinoma, 1 signet-ring cell cancer in TG group. In PG group, there were 1 papillary form adenocarcinoma, 8 glandular form adenocarcinoma, 7 mucoid adenocarcinoma, 1 poorly differentiated adenocarcinoma, 7 signet-ring cell cancer, 4 squamous cancer and 1 other type. Regarding to size of cancer, there were 5 cases less than 5 cm, 6 more than 5 cm and 5 more than 10 cm in TG group and 19 cases less than 5 cm and 10 more than 5 cm in PG group. Concerning TNM clinical classification, there were 4 in stage II, 3 in stage IIIA, 2 in stage IIIB and 7 in stage IV in TG group and 1 in stage I, 13 in stage II, 10 in stage IIIA, 1 in stage IIIB and 3 in stage IV and 1 with no exact stage in PG group.

Operation methods

In TG group, the abdomen was entered through upper midline incision. D2 or D2+ operation was applied on lymph nodes cleaning. 14 cases underwent TG only. 1 case underwent TG and splenectomy. 1 case underwent combined TG and splenectomy and cauda pancreatis resection. The reconstructed digest tract included 2 cases of esophagoduodenostomy with part of jejunum between them and 14 cases of Roux-Y esophagojejunostomy. In PG group, 2 cases were made left transthoracic incision and 1 case was made combined abdominal and transthoracic incision and 26 cases were made upper abdominal midline incision. 28 cases took PG only and 1 case took combined partial gastrectomy and splenectomy.

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Supplementary treatment

All cases did not take chemotherapy before operation. The patients whose pathologic stage was above II and whose age was less than 70 years old would take 6 cycles of chemotherapy with either 5-FU and mitomycin combination or 5-FU and oxaliplatin combination.

Statistical analysis

3-year and 5-year survival analysis were performed by χ^2 test and corrective χ^2 test.

Results

45 patients were followed up for 6 months to 5 years. The combined two groups' 3 years and 5 years survival rates were 42.2% and 20% respectively. They were 37.5% and 18.8% for TG group, and 44.8% and 20.7% for PG group, respectively. There were no significant differences between 2 groups in 3-year and 5-year survival rates ($\chi^2 = 3.84$, $P > 0.05$; $\chi^2 = 3.89$, $P > 0.05$).

Mortality and morbidity

In TG group, there was 1 patient died of liver failure 1 month after operation. Mortality and complication morbidity in TG group were 6% each. In PG group, 2 patients developed fistula, one of which died two months after operation and the other's fistula closed with conservative management. One patient had anastomosing portion contracture and 1 patient died of brain embolism 3 months after operation. In PG group, mortality and complication morbidity were 6.8% and 13.7% respectively.

Discussion

Surgical treatment is the prevalent option for cancer of the cardia and esophagogastric junction. In the early stage, PG is proved to be effective. In the advanced stage, adopting TG or PG remains controversial among the specialist. Harrison^[1] thought either PG or TG could be applied on proximal 1/3 gastric carcinoma only if there was enough distance between cutting edge and tumor. Both methods had similar prognosis, and similar 5-year survival rate, relapse rate and relapse time. So they concluded not all of cancer of the cardia and esophagogastric junction needed TG. Papachristou^[2] thought surgical treatment for cancer of the cardia and esophagogastric junction must comply with the following standards: (1) total cut of primary cancer and preventing or solving esophagus obstruction; (2) no cancer residue on cutting edge; (3) cutting latent regional lymph nodes to avoid possible metastasis. They

concluded TG group could reach these standards and had better post-operation survival rate than PG group. Wang SB^[3], Huang CM^[4] in China gave the similar conclusion. In our report, TG group's 3 years and 5 years survival rate were 37.5% and 18.8% respectively and PG group's 3 years and 5 years survival rate were 44.8% and 20.7% respectively. There were no significant differences between 2 groups.

Most authors took 5th & 6th lymph nodes metastasis in cancer of the cardia and esophagogastric junction as indication for TG. In our practices, we noted 5th & 6th lymph nodes metastasis implied bad prognosis even if adopting TG and the two groups of lymph nodes cleaning. There might be another metastasis portion existing when 5th & 6th lymph nodes metastasis was positive. There were 5 cases suspecting of 5th & 6th lymph nodes metastasis in the operation and proved by autopsy afterwards. They underwent TG and 5th & 6th lymph nodes cleaning. Their survival time was less than 2 years. So it was not enough to carried out both TG and 5th & 6th lymph nodes cleaning. Would combined visceral resection increase clinical effects in the treatment of local advanced cardiac carcinoma? Lu YY^[5] concluded extended resection advanced cardiac carcinoma involving peripheral viscera improved the 5-year survival rate to 20%–30%. They thought lymph nodes metastasis rate occurring around hilum lienis and artery lienalis was no less than that in suprapyloric and subpyloric lymph nodes for the advanced cardiac carcinoma patients. So TG could not clean all metastasizing lymph nodes. In order to clean 10th & 11th lymph nodes, TG combined with splenectomy even with cauda pancreatis resection was essential. We need more experiences to evaluate the effects of combined visceral resection on the prognosis of cancer of the cardia and esophagogastric junction.

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