Abstract

Objective  The eradication of Helicobacter pylori (H. pylori) reduces the risk for gastric cancer development, but it cannot prevent it completely. We investigated the risk factors of early gastric cancer development after the eradication of H. pylori, based on the histological characteristics of gastric mucosa.

Methods  Sixty-one patients who underwent endoscopic submucosal dissection for early gastric cancer after successful H. pylori eradication (group A) and 122 patients without developing a gastric neoplasm over 3 years after successful H. pylori eradication (group B) were analyzed. We compared the histological findings of the patients enrolled in Group A and Group B before and after the propensity score-matching.

Results  Comparing the characteristics of two the groups, Group A consisted predominantly of males, had significantly more elderly patients, and the years after successful eradication tended to be longer. We performed score matching for these three factors to reduce the influence of any confounding factors. After matching, the scores of inflammation for Group A (N=54) was significantly higher than those of Group B (N=54) at the greater curvature of the antrum, the lesser curvature of the corpus, and the greater curvature of the corpus. According to a multivariate analysis, inflammation of the greater curvature of the antrum and lesser curvature of the corpus were found to be
independent risk factors. The risk ratio and 95% CI were 5.92 (2.11-16.6) ($p<0.01$), and 3.56 (1.05-13.2) ($p=0.04$), respectively.

**Conclusions** A continuous high level of inflammation of the background gastric mucosa may be a risk factor for gastric cancer onset after *H. pylori* eradication.

**Key words:** background gastric mucosa, gastric cancer, inflammation, *Helicobacter pylori*, propensity score matching