

Helicobacter pylori infection increases cell kinetics in human gastric epithelial cells without adhering to proliferating cells

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Abstract

We investigated the effect of *H. pylori* infection on cell proliferation of gastric mucosa using immunostaining for *H. pylori* or Ki67. *H. pylori* cells attached to surface mucous cells covering luminal surface and the upper part of gastric foveolae, and up-regulated the proliferative activity of gastric epithelial cells without adhering to the proliferating epithelial cells.

Keywords: *Helicobacter pylori* • gastric surface epithelial cell • gastric proliferating zone • gastric mucin • immunohistochemistry

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H. pylori cells characteristically attach to surface mucous cells and colonize in the mucous gel layer covering the gastric mucosa [1]. We investigated localization of *H. pylori* cells and proliferating epithelial cells in gastric mucosa using sequential immunostaining for Ki67 (immunoperoxidase method) followed by immunostaining for *H. pylori* (immunoalkaline phosphatase method). Proliferating epithelial cells are localized around neck region in the normal gastric mucosa (Fig. 1A & 1B), and gastric proliferating zone was markedly expanded in *H. pylori* infected gastric mucosa (Fig. 2A) [2]. *H. pylori* cells did not adhere to proliferating epithelial cells

(Fig.2B). *H. pylori* infection increased proliferative activity of gastric epithelial cells without adhering to the proliferating epithelial cells.

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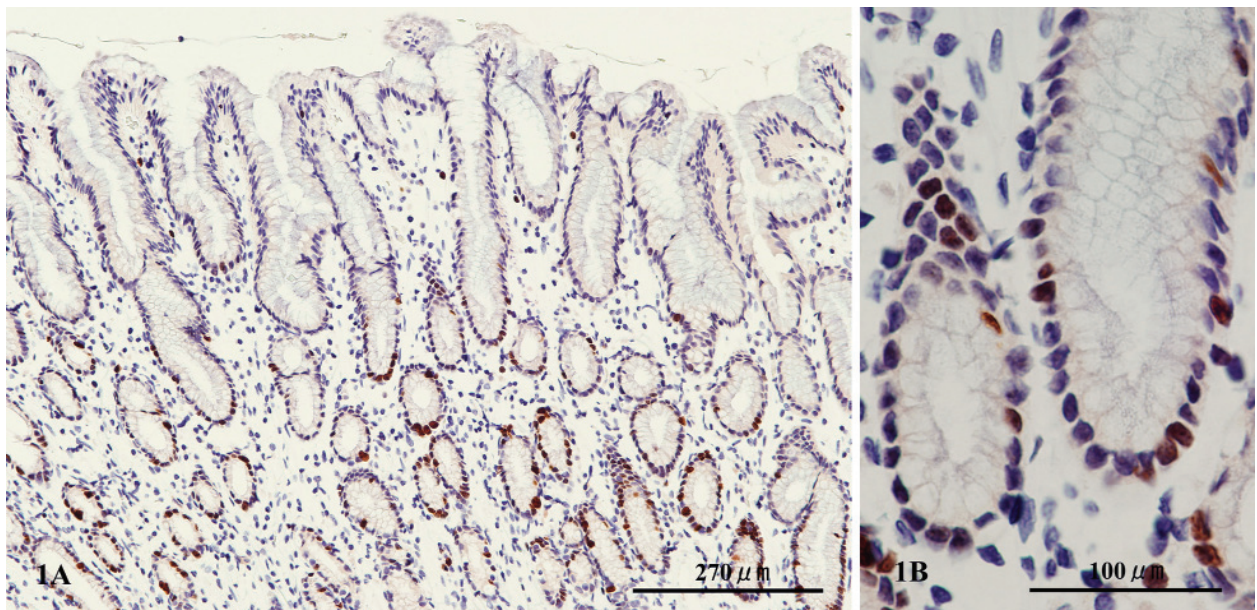


Fig. 1 Figure 1A & 1B. Gastric mucosa without *H. pylori* infection. 1A. Nuclei of proliferating cells show immunoreactivity with Ki-67 antibody and stain brown. Proliferating epithelial cells are localized around neck region. Immunoperoxidase method for Ki-67, original magnification x100. 1B. Higher magnification around gastric proliferating zone. Immunoperoxidase method for Ki-67, original magnification x400.

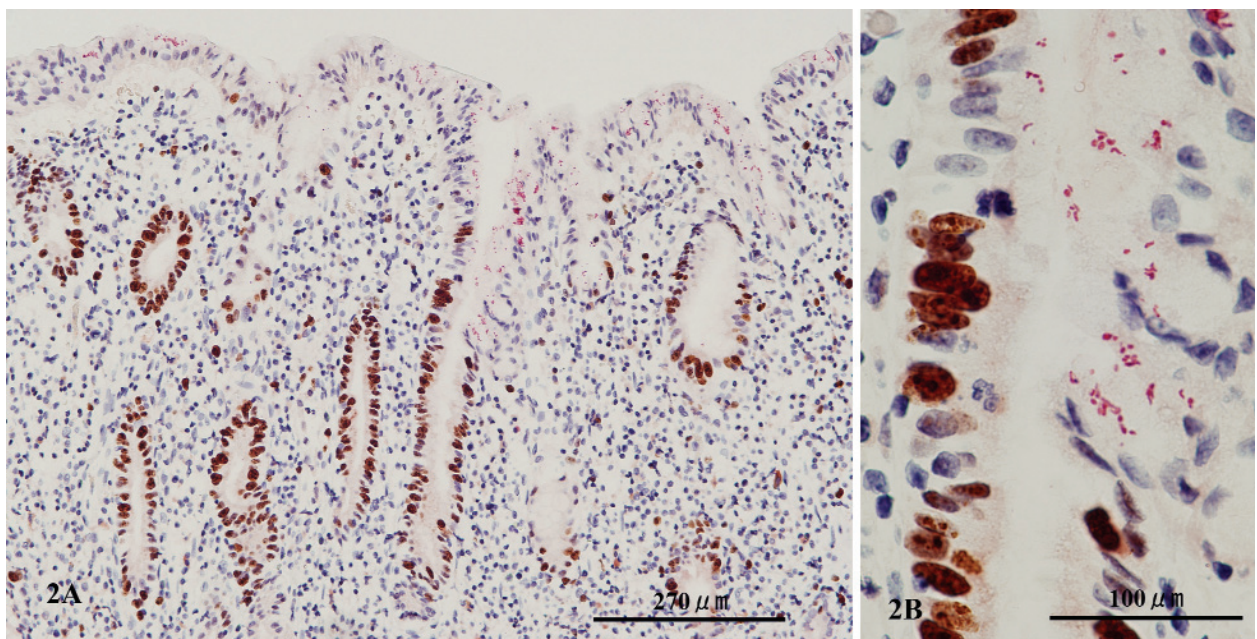


Fig. 2 Figure 2A & 2B. Gastric mucosa with *H. pylori* infection. 2A. *H. pylori* cells stain red with anti *H. pylori* antibody, *H. pylori* cells colonize on or between surface mucous cells covering upper part of gastric foveolae. Gastric proliferating zone is markedly expanded in *H. pylori* infected gastric mucosa. Immunoperoxidase method for Ki-67 followed by immunoalkaline phosphatase method for *H. pylori*. Original magnification x100. 2B. *H. pylori* cells do not adhere to proliferating epithelial cells showing immunoreactivity with Ki-67 antibody. Higher magnification of a region from 2A. Original magnification x400.