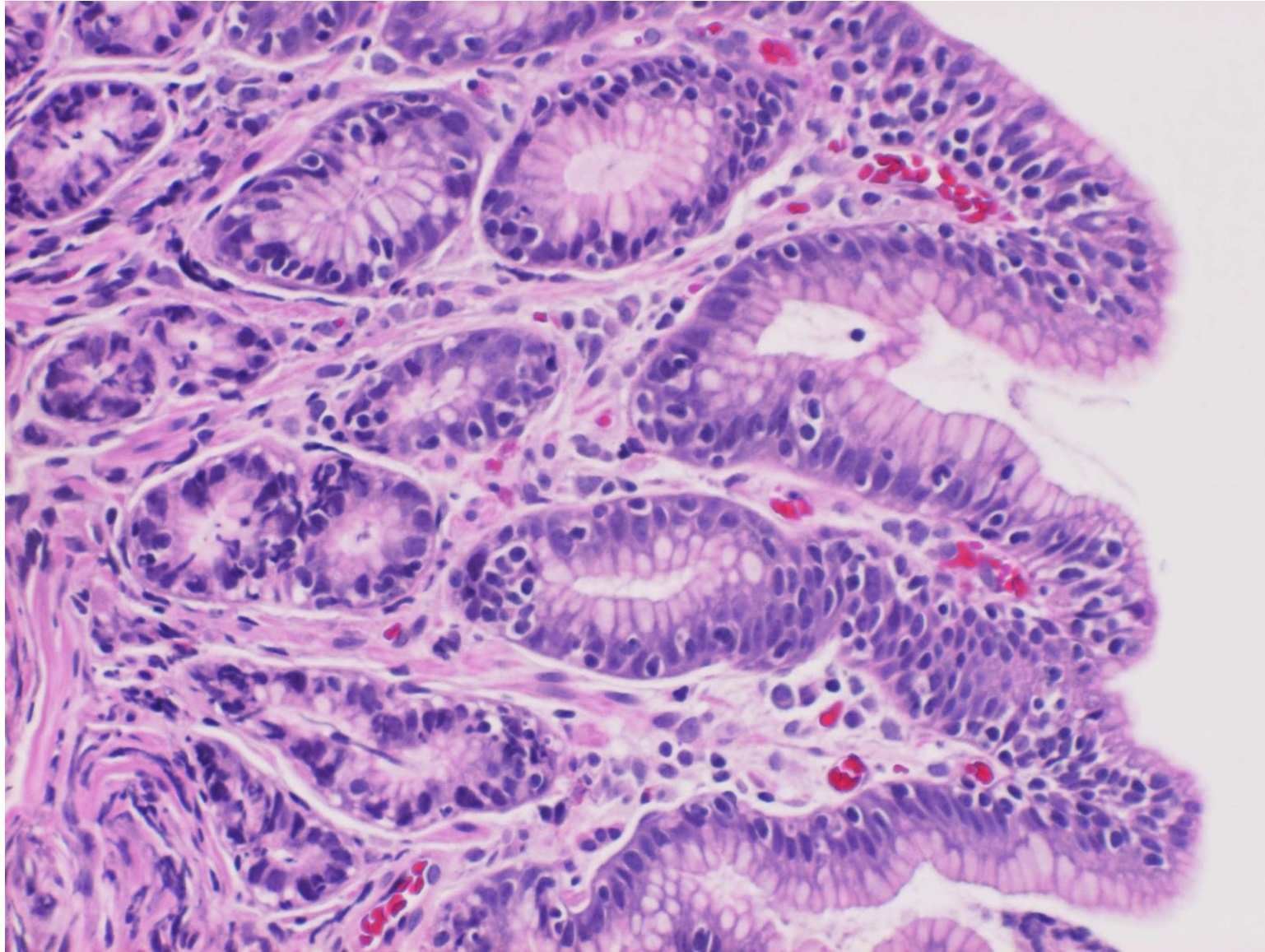


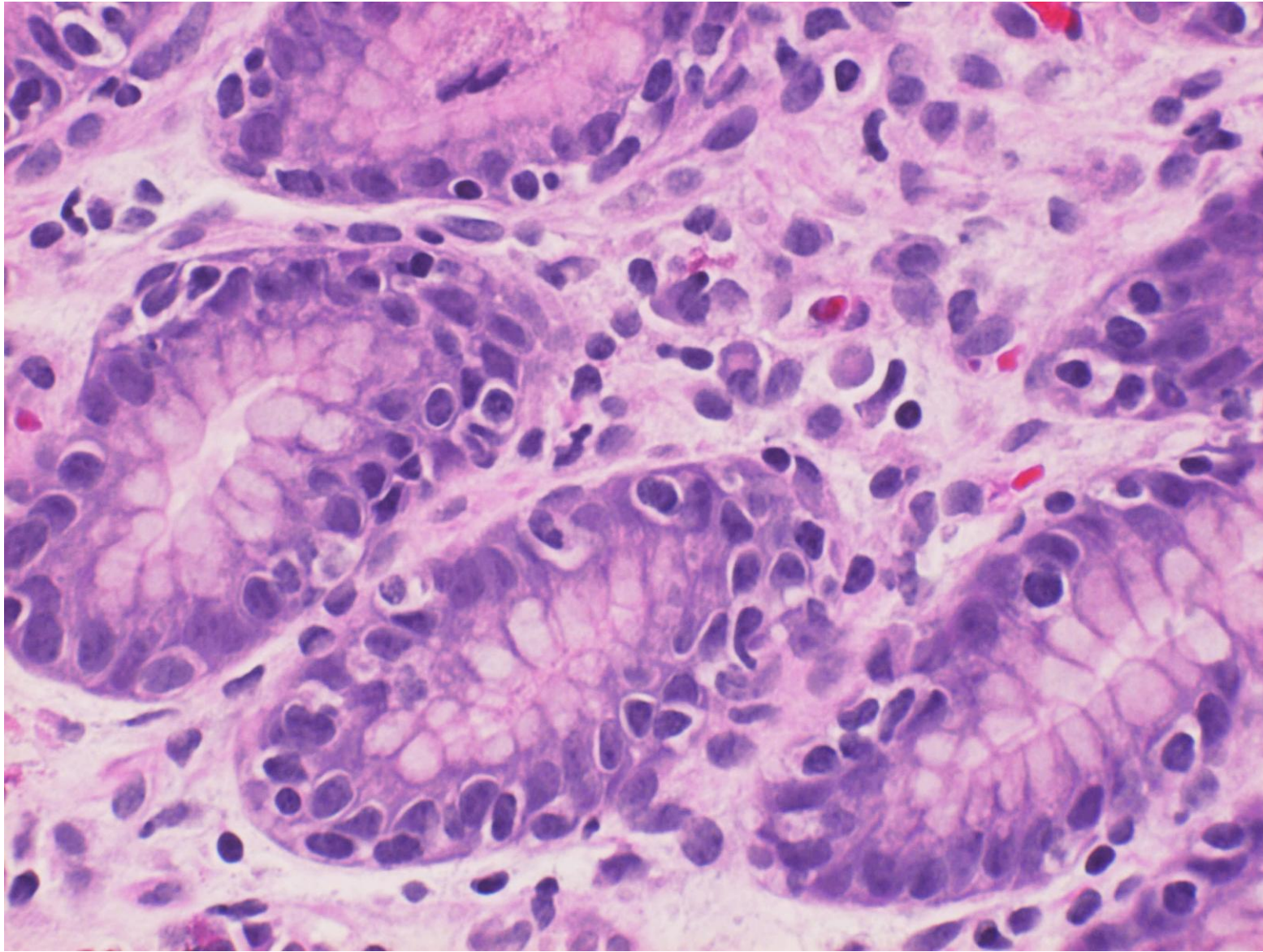
Lymphocytic gastritis

Lymphocytic gastritis is a pattern of gastric mucosal injury characterized by increased intraepithelial lymphocytes (IELs) (> 25 per 100 epithelial cells) and increased chronic inflammatory cells in the lamina propria. It may be associated with *Helicobacter pylori* infection or celiac disease. Small nodules with central erosions and enlarged rugal folds (“varioliform gastritis”) may be seen endoscopically, but most cases reveal unremarkable appearance. IELs belong to CD8-positive killer T-lymphocytes. An exceptional lesion with IELs consisting of both CD4 and CD8 cells is also described.

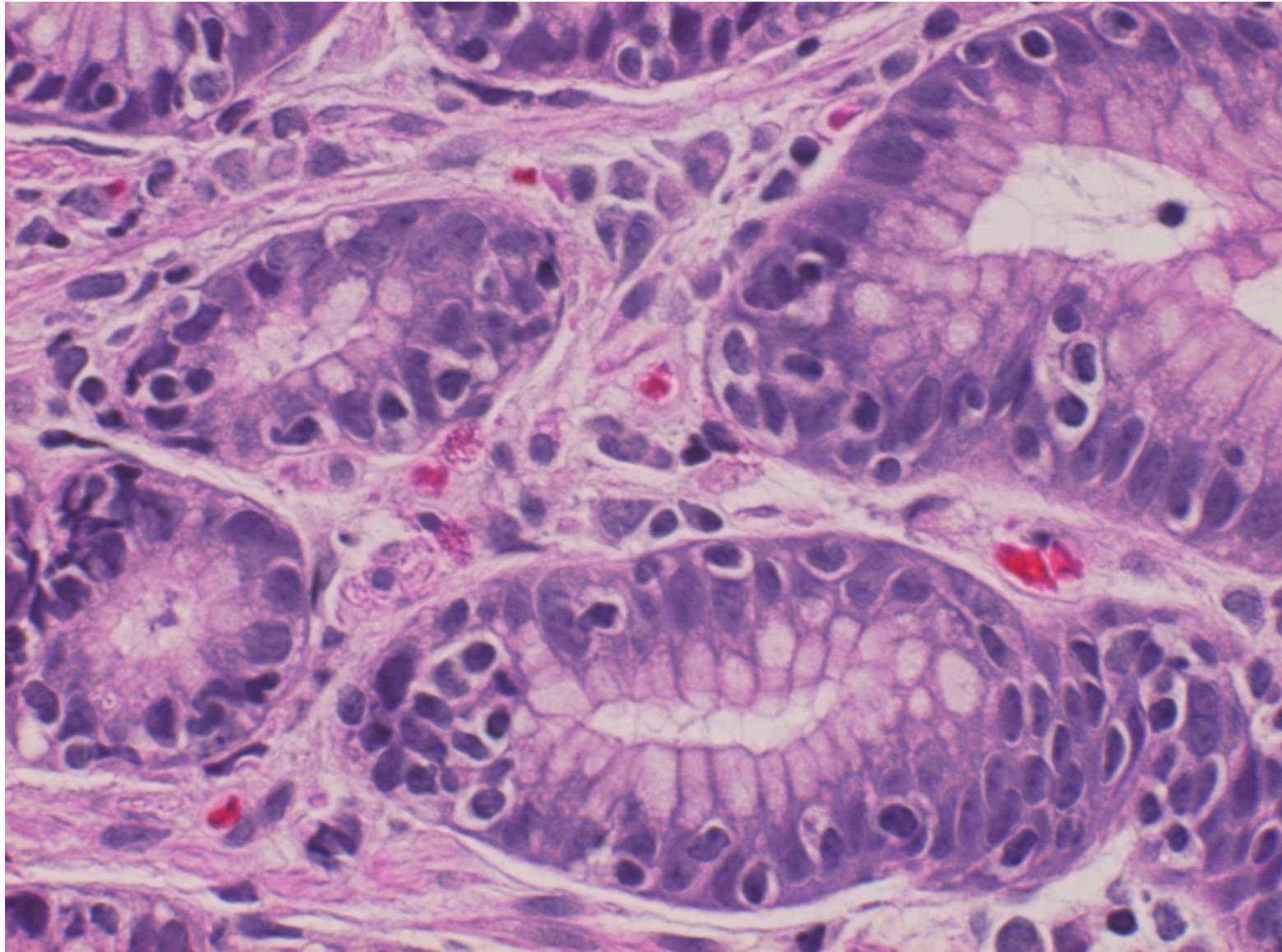
Ref.: Yip RHL, et al. Topography, morphology, and etiology of lymphocytic gastritis: a single institution experience. *Virchows Arch* 2020; 476(4): 551-559. doi: 10.1007/s00428-019-02734-2



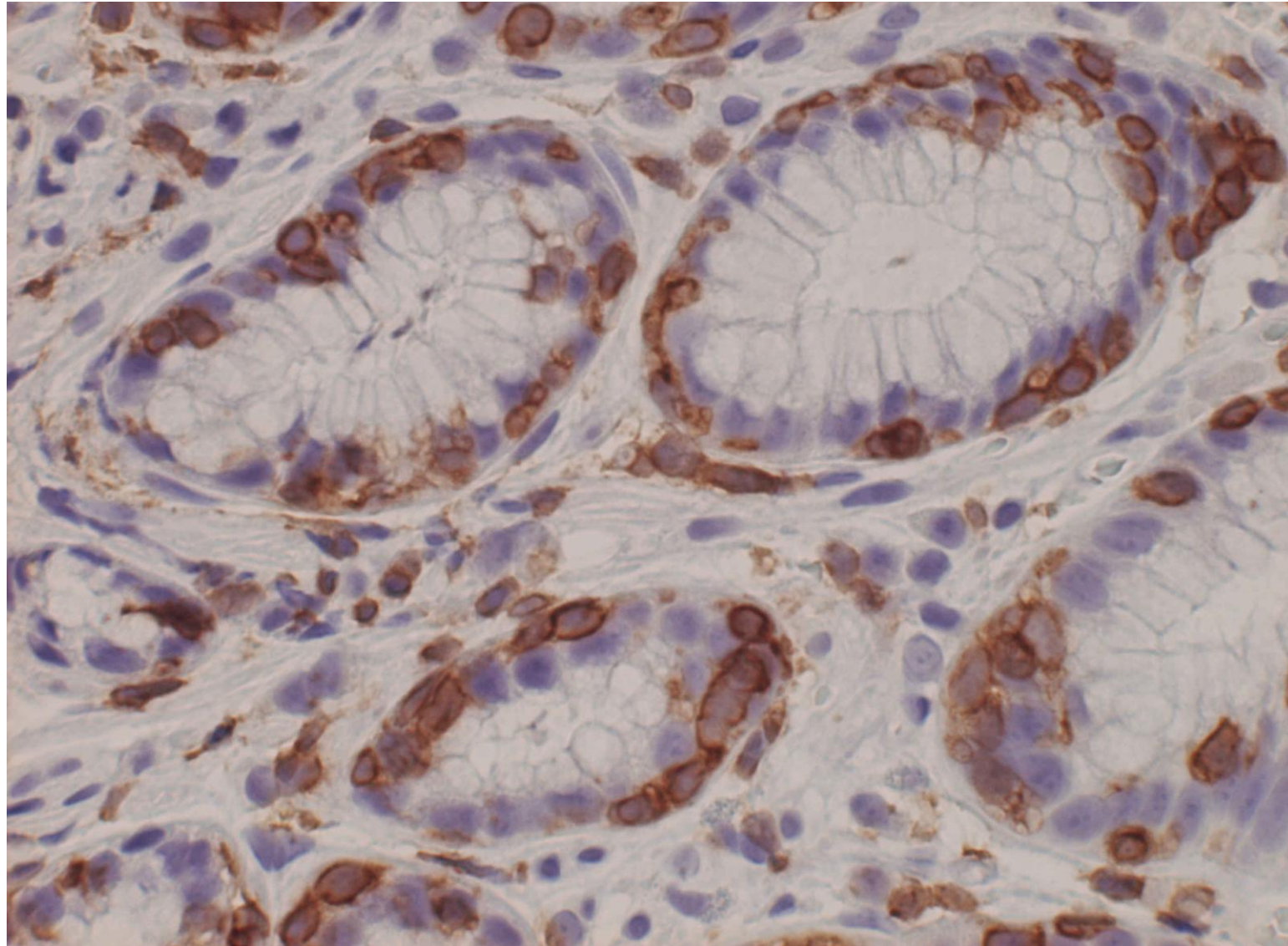
Lymphocytic gastritis seen in a 49-year-old woman. Lymphocytic gastritis is microscopically characterized by increased intraepithelial lymphocytes. Lamina propria inflammation is mild. H&E-1



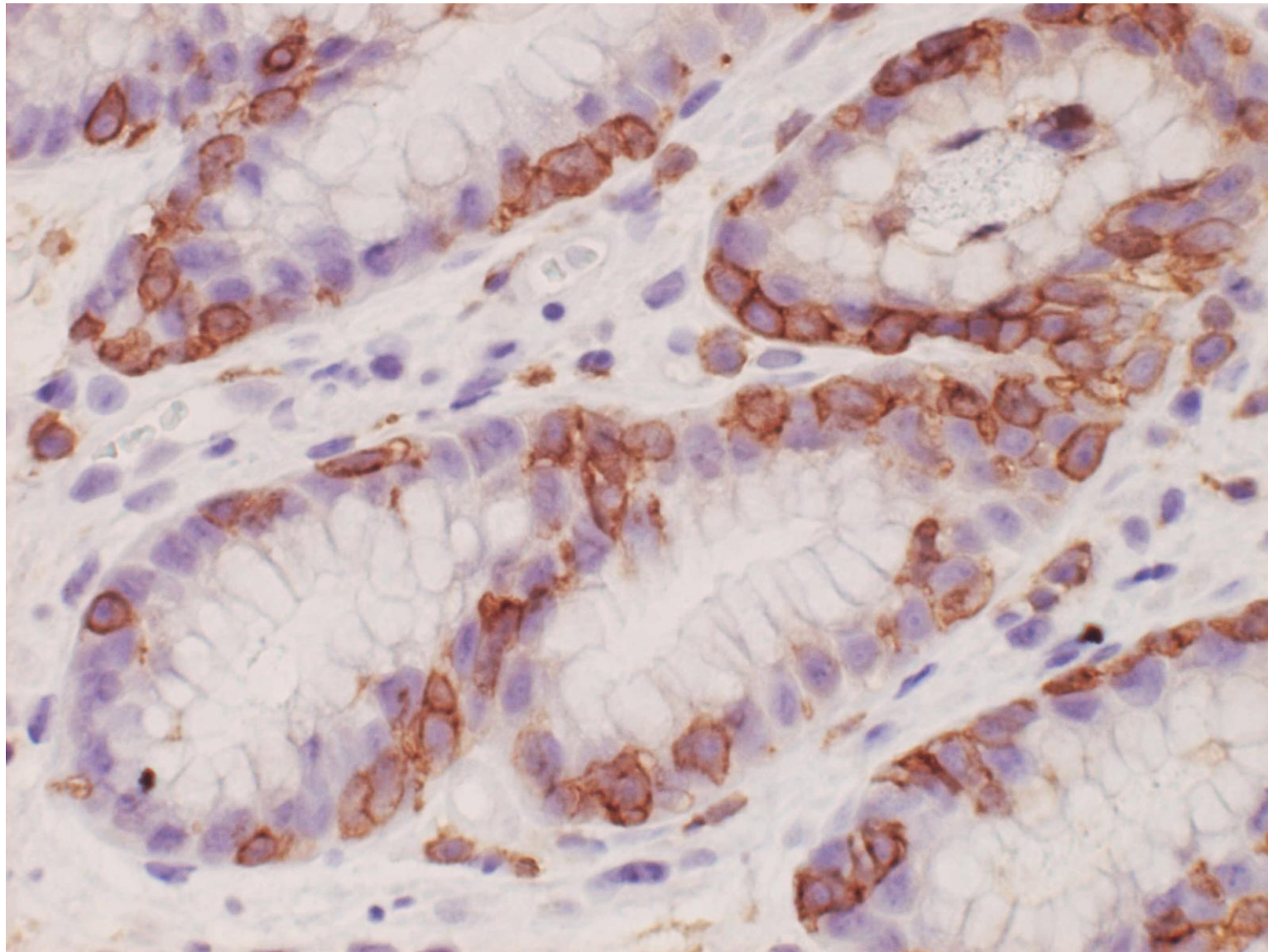
Lymphocytic gastritis seen in a 49-year-old woman. Lymphocytic gastritis is microscopically characterized by increased intraepithelial lymphocytes. Lamina propria inflammation is mild. H&E-2



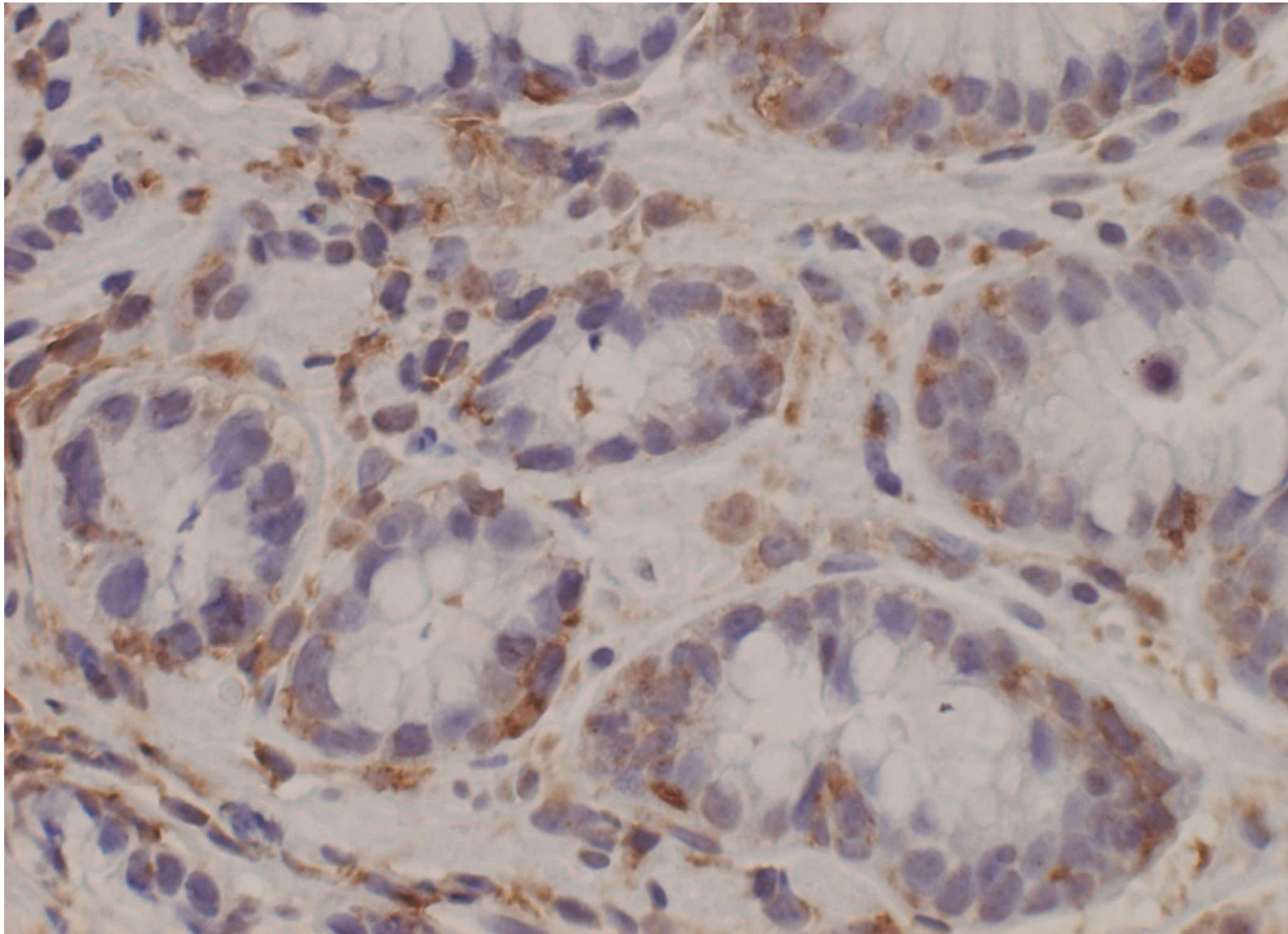
Lymphocytic gastritis seen in a 49-year-old woman. Lymphocytic gastritis is microscopically characterized by increased intraepithelial lymphocytes. Lamina propria inflammation is mild. H&E-3



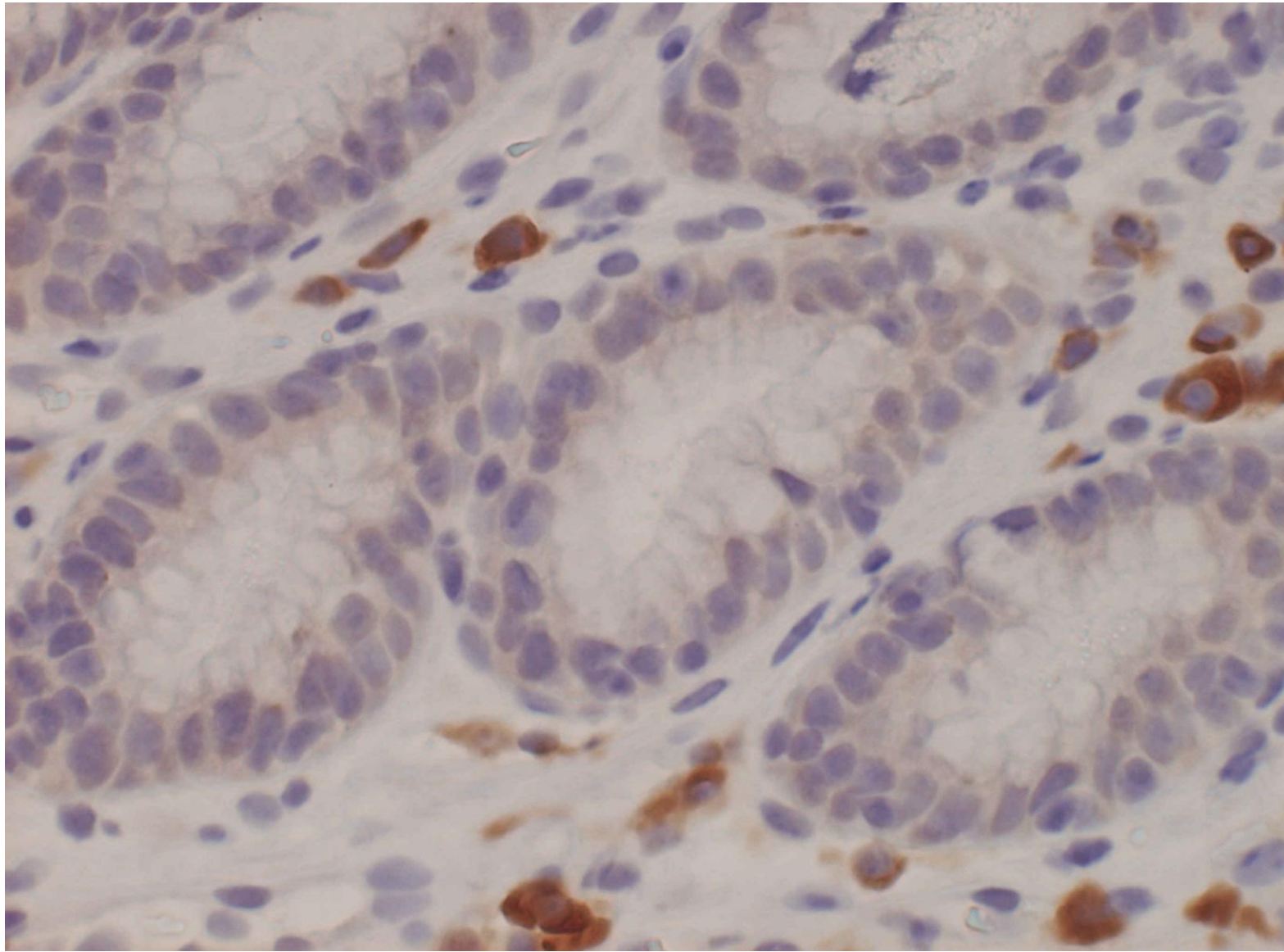
Lymphocytic gastritis seen in a 49-year-old woman. The increased intraepithelial lymphocytes are immunoreactive for CD3. Immunostaining for CD3



Lymphocytic gastritis seen in a 49-year-old woman. The increased intraepithelial lymphocytes are immunoreactive for CD8. Immunostaining for CD8



Lymphocytic gastritis seen in a 49-year-old woman. The increased intraepithelial lymphocytes are mostly negative for CD4. Immunostaining for CD4



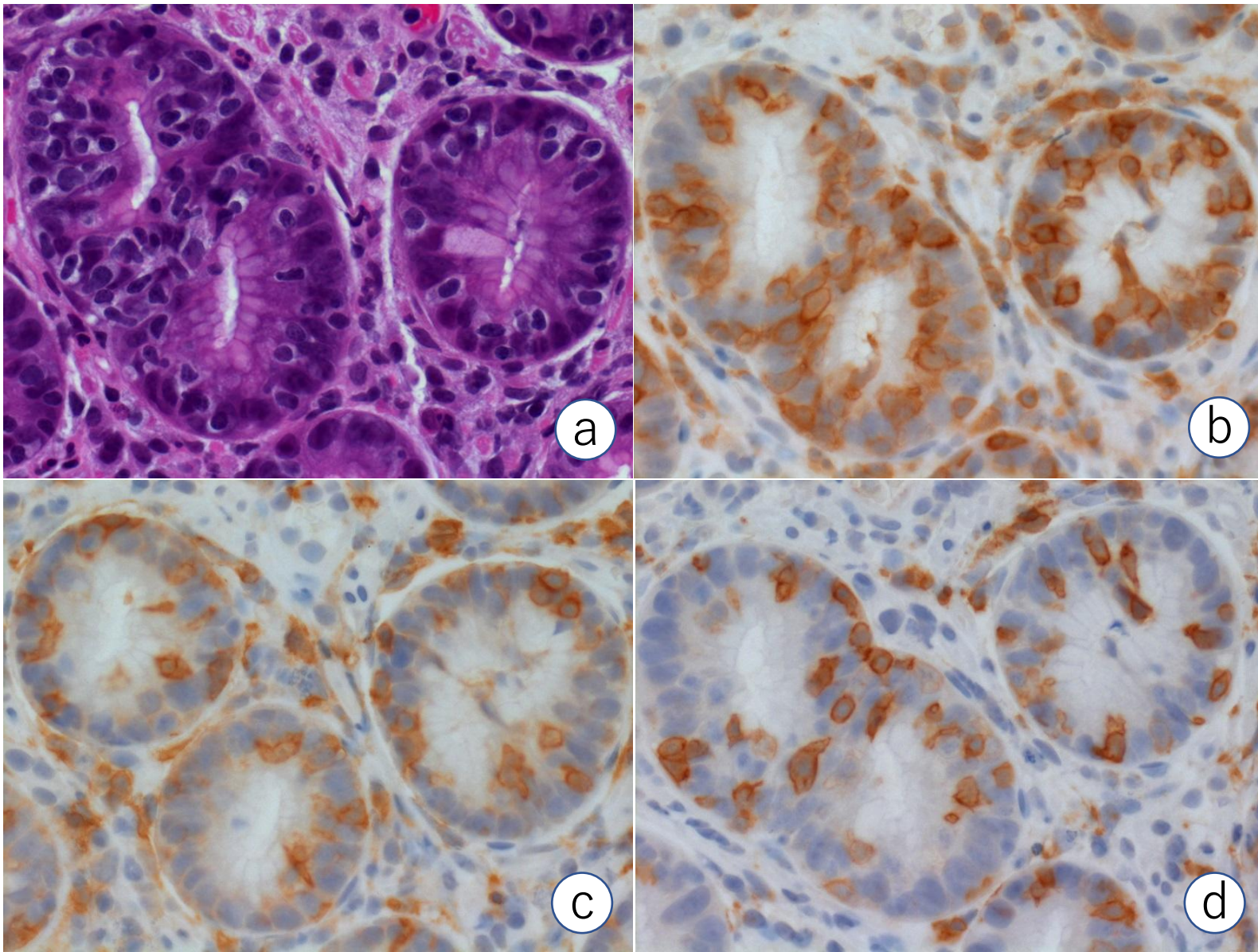
Lymphocytic gastritis seen in a 49-year-old woman. The increased intraepithelial lymphocytes are negative for CD79a. Immunostaining for CD79a

Lymphocytic gastritis showing concomitant occurrence of both CD4 + and CD8 + T-cells among epithelial cells

A novel phenotype of IELs in lymphocytic gastritis (LG) is demonstrated. A 53-year-old Japanese female felt upper abdominal discomfort, and endoscopic evaluation revealed mild mucosal redness and rugal swelling on the gastric body. Hp eradication therapy was given 5 years earlier, with urea breath test being negative. An ulcer scar at the supra-angular region was biopsied. A control conventional case of LG was exemplified from the antral mucosa of a 55-year-old male case. No features of celiac disease were found in either cases. Both biopsy samples histologically revealed numerous small lymphocytes among surface epithelia. The foveolar cells were regenerative and the mucin content was decreased. Dense lymphocytic infiltration was seen in the lamina propria, but without Hp colonization and formation of lymphoid follicles or lymphoepithelial lesions. Two LG samples were immunostained for CD3, CD4, CD8, TIA1, granzyme B and perforin.

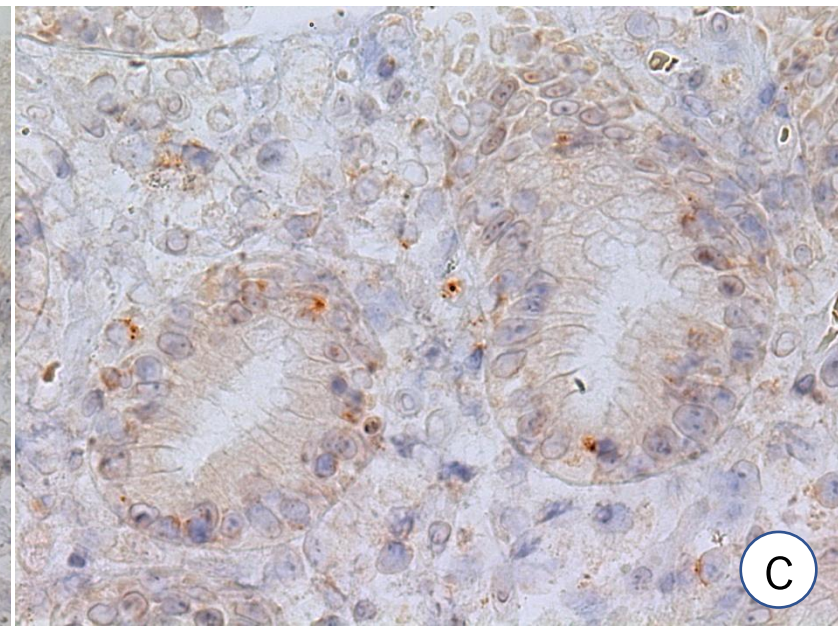
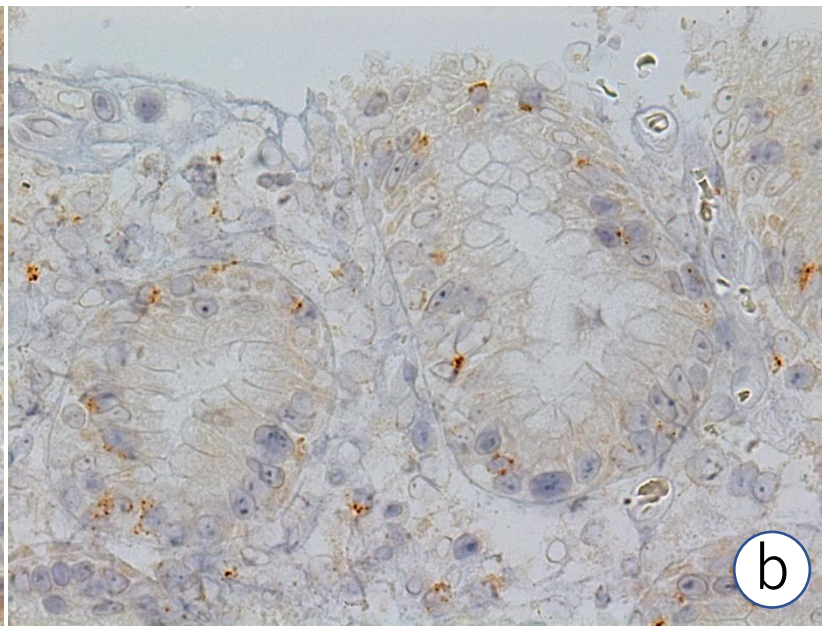
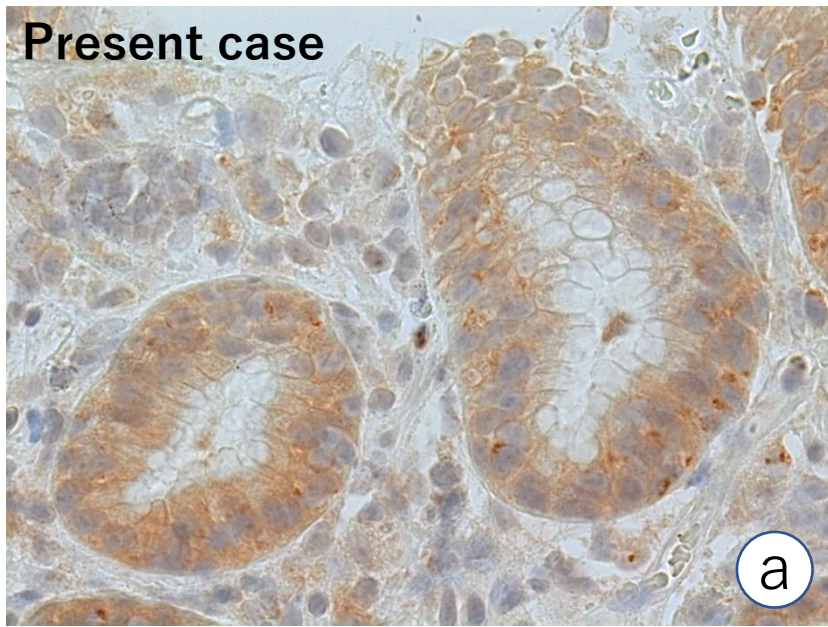
In the present case, CD3+ IELs consisted of both CD4+ T-cells and CD8+ T-cells (CD4: 33 ± 22 and CD8: 53 ± 27 per 100 epithelial cells): the CD4: CD8 ratio being 1:1.6. In the lamina propria, CD4+ T-cells predominated over CD8+ T-cells. Three killer substances in CD8+ T-cells were further evaluated. In the present case, TIA-1-positive cells predominated over granzyme B- and perforin-positive. On average, 38% of CD8+ IELs expressed TIA-1. In the control conventional case, more IELs were labeled for granzyme B and perforin than TIA-1, and CD3+ IELs expressed CD8 alone, with granzyme B and perforin seen in 66% and 53% of the IELs, respectively.

Ref: Fujiwara H, et al. Lymphocytic gastritis showing concomitant occurrence of both CD4 + and CD8 + T-cells among epithelial cells. *Pathol Int* 2014; 64(7): 361-363. doi: 10.1111/pin.12172

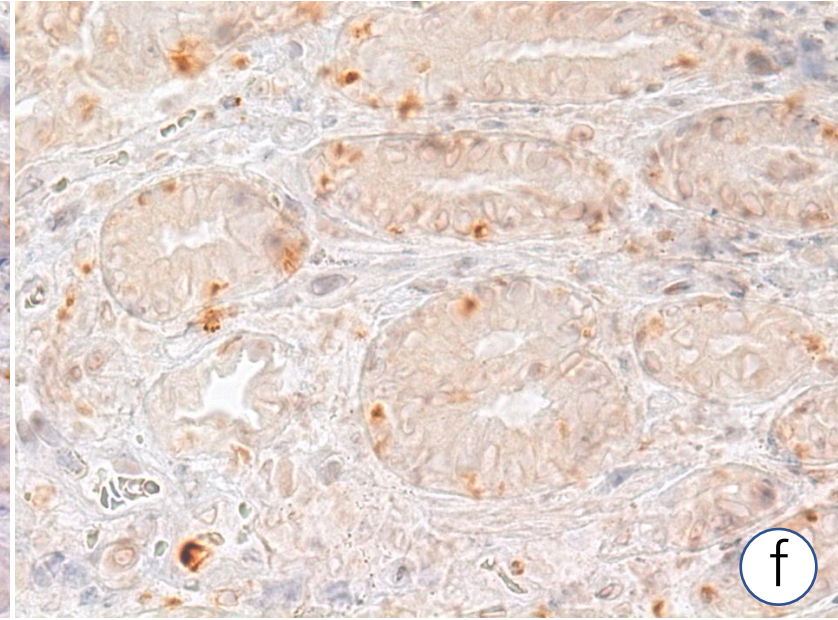
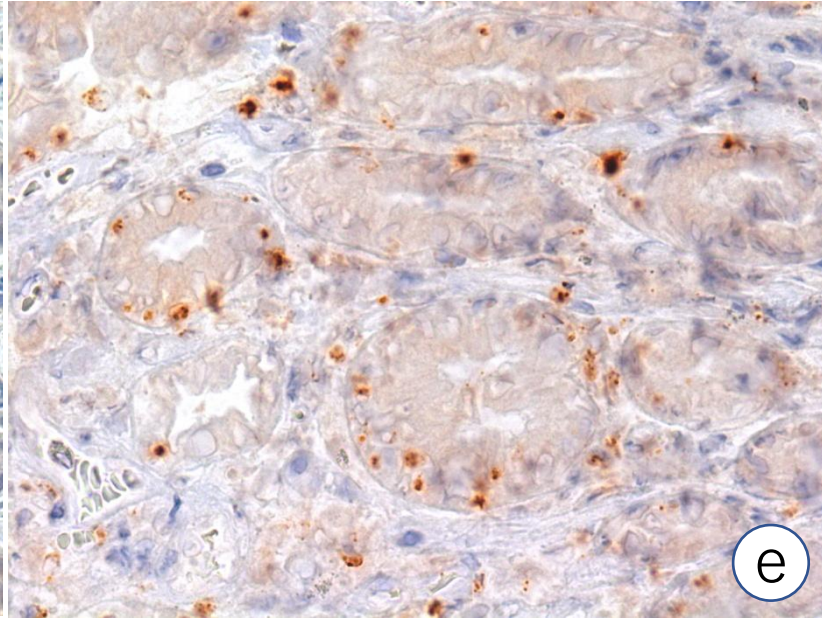


Lymphocytic gastritis in the present case. (a) H&E; (b) CD3; (c) CD4; (d) CD8. There are numbers of small lymphocytes among the foveolar cells showing decreased mucin content. CD3+ IELs are composed of both CD4+ and CD8+ T-cells. In the lamina propria mucosae, CD4+ T-cells predominate over CD8+ T-cells.

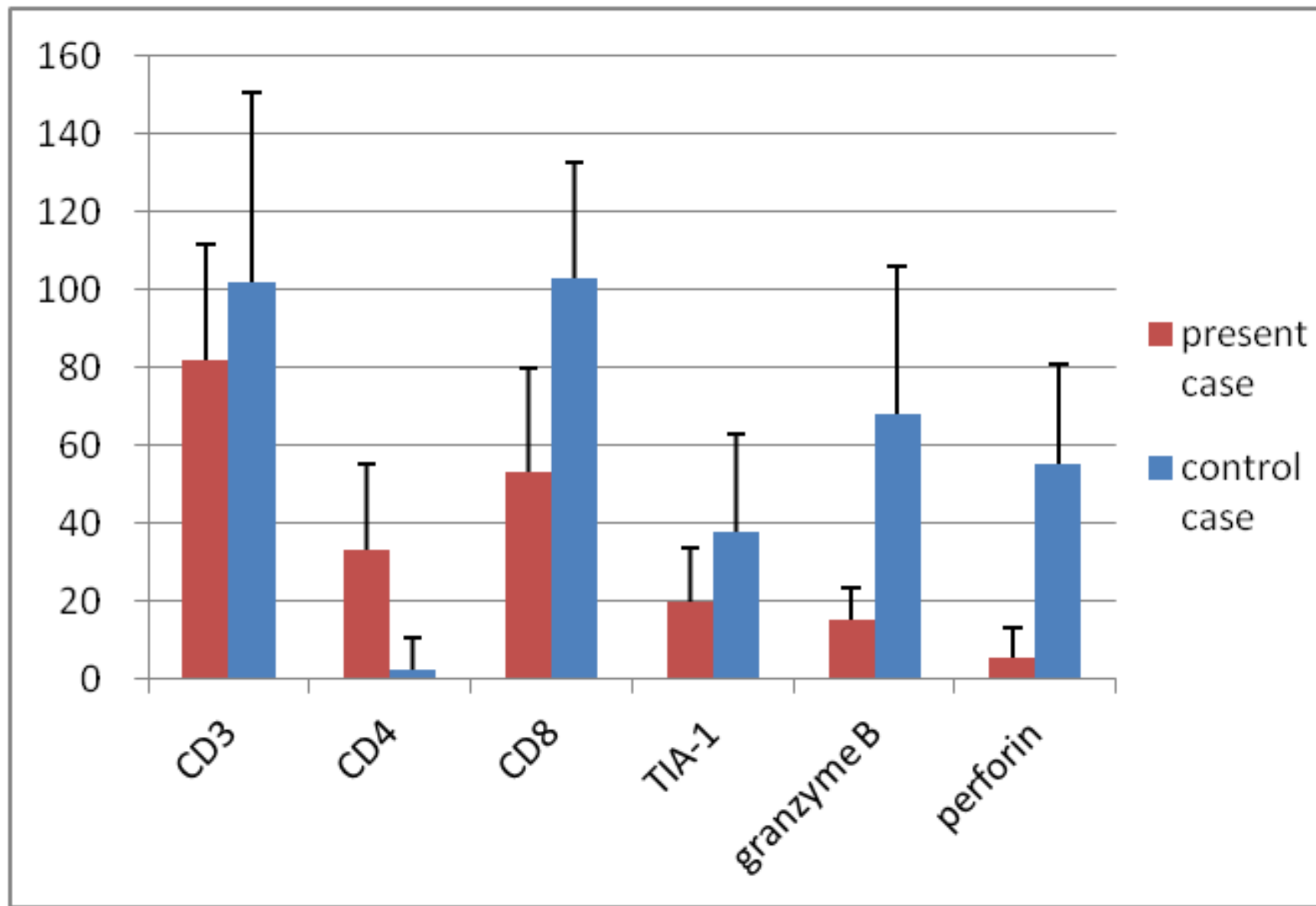
Present case



Control conventional case



Expression of cytotoxic T-cell substances in LG. top panels, the present case; bottom panels, the control conventional case; (a, d) TIA1; (b, d) granzyme B; (c, f) perforin. The expression of granzyme B and perforin is suppressed when compared with the control conventional case showing activated killer substance expression.



The number of IELs immunoreactive for CD3, CD4, CD8, TIA-1, granzyme B and perforin per 100 epithelial cells in lymphocytic gastritis. The data of the present case (a 63-year-old lady) are shown in red, and the control conventional case (a 55-year-old man) in blue.