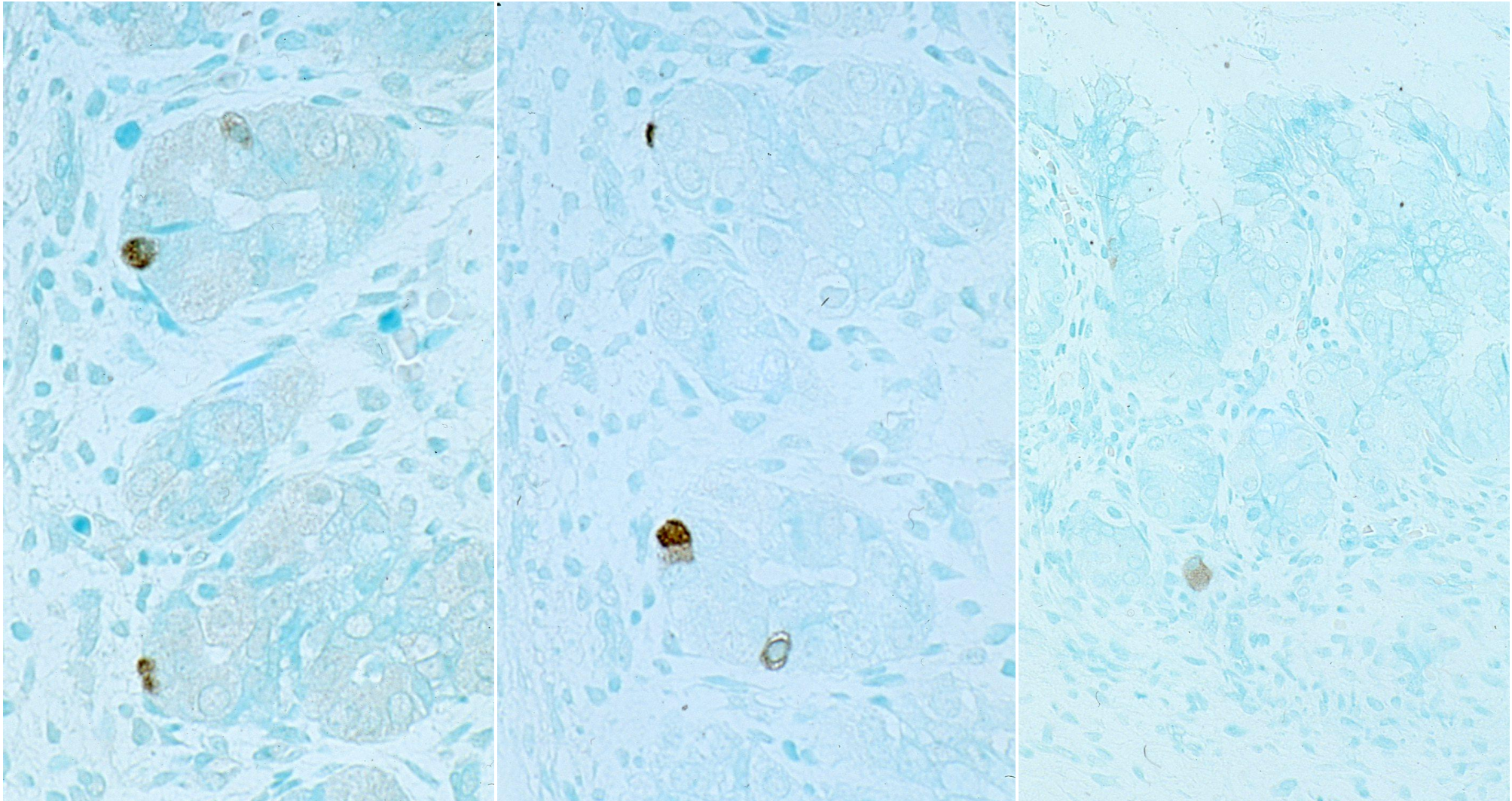


Glucagon cells in human fetal and neonatal gastric mucosa

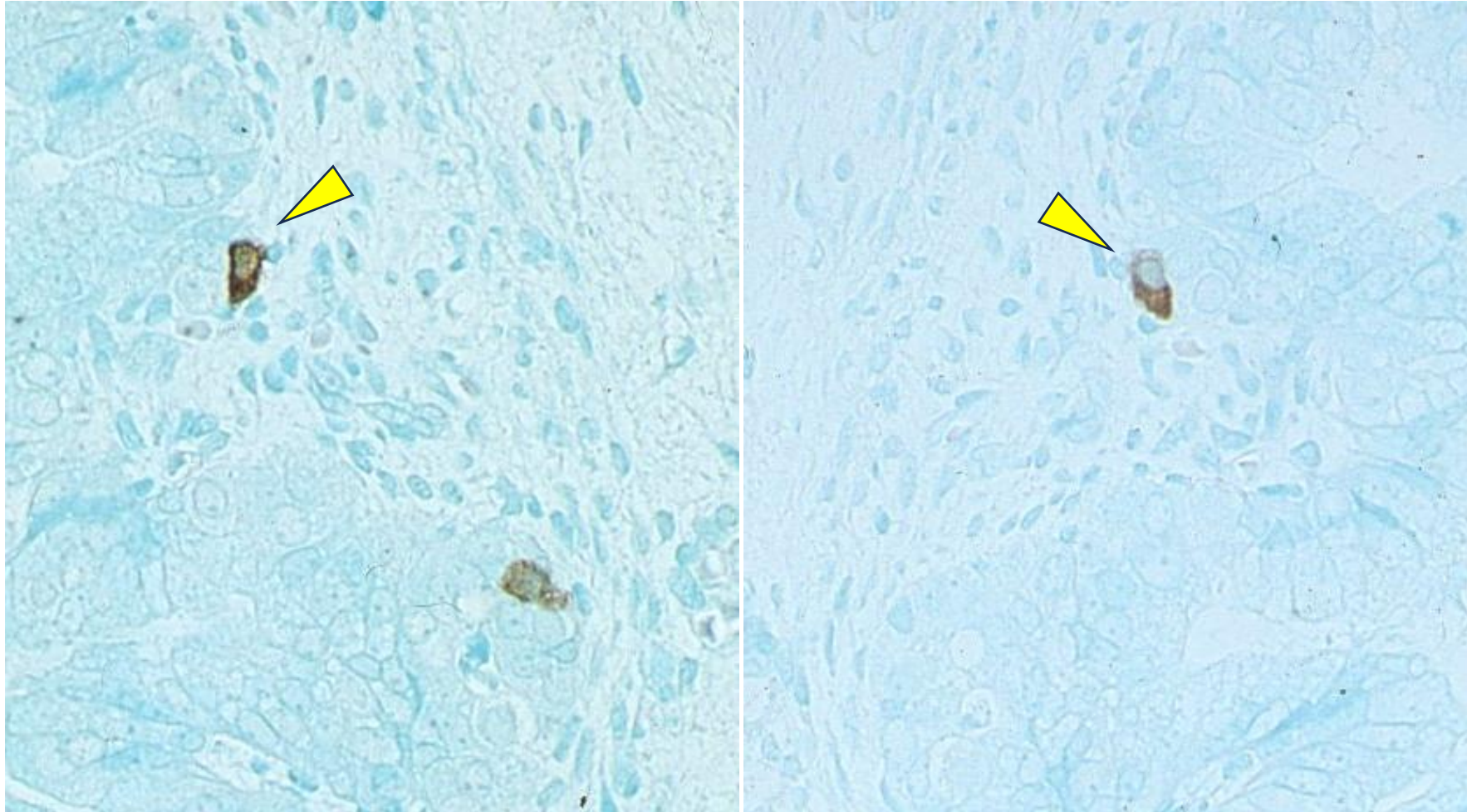
In fetal and neonatal oxyntic mucosae, there are neuroendocrine cells with immunoreactivities of both glucagon and glicentin (proglucagon/enteroglucagon). Cells containing glicentin immunoreactivity alone were detected earlier than glucagon cells during fetal development. Bovine pancreatic polypeptide immunoreactivity coexisted in a subpopulation of the glucagon/glicentin cells. These cells were absent from normal oxyntic mucosa in the post-neonatal period.

Glucagon/glicentin-immunoreactive neuroendocrine cells reappear in hamartomatous polyp in adult oxyntic mucosa (GI-68-3-stomach), hyperplastic oxyntic mucosa in Ménétrier's disease and a trophic oxyntic mucosa in a remnant stomach with cancer. Intestinal metaplasia of the gastric mucosa is rich in glicentin cells with occasional glucagon immunoreactivity. Some gastric cancer cells of both diffuse and adenoplastic types contained immunoreactive glicentin and, less frequently, glucagon. In the dog, glucagon cells are distributed in normal oxyntic gastric mucosa.

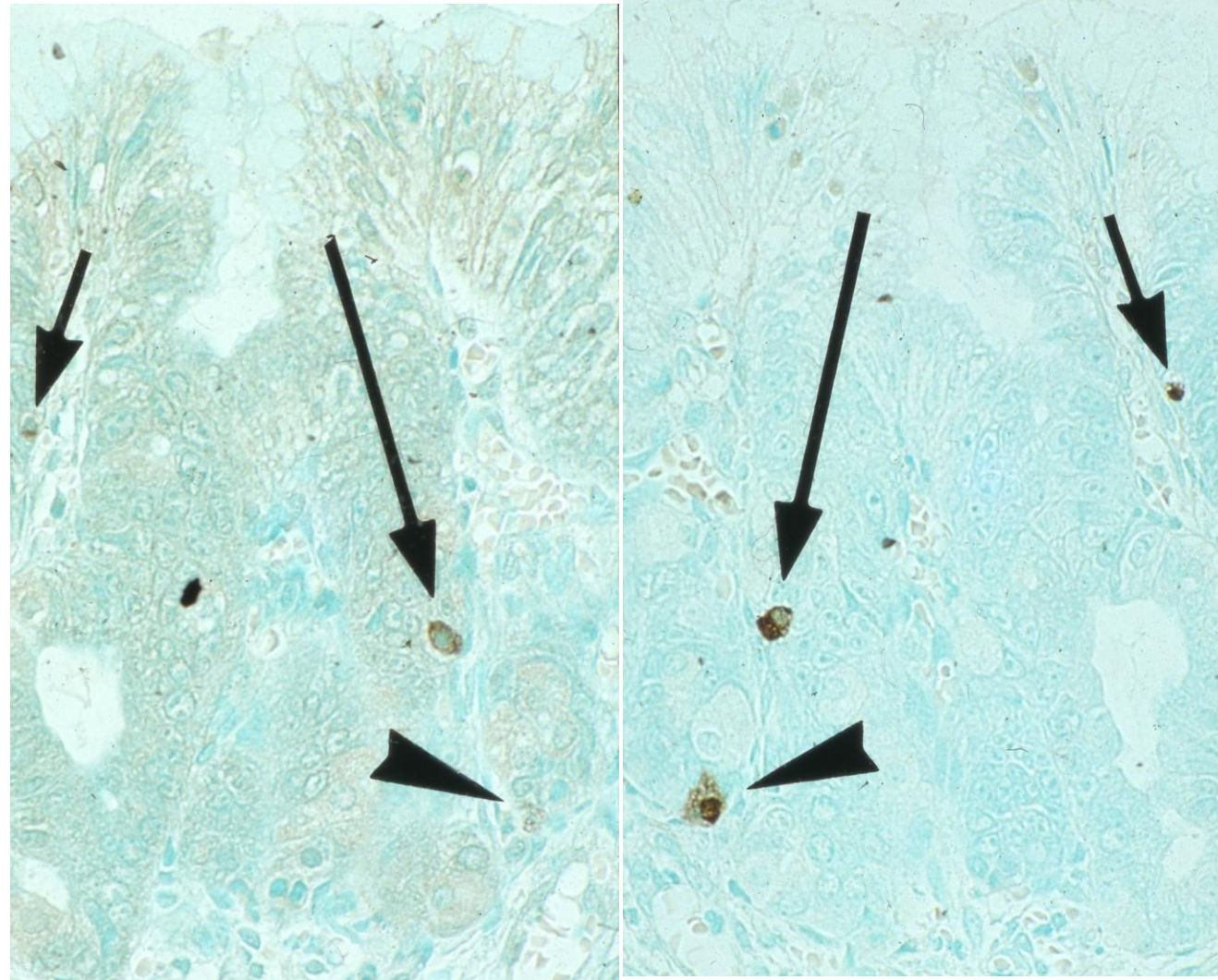
Ref.: Tsutsumi Y. Immunohistochemical studies on glucagon, glicentin and pancreatic polypeptide in human stomach: normal and pathological conditions. *Histochem J* 1984; 16: 869-883. doi: 10.1007/BF01002792



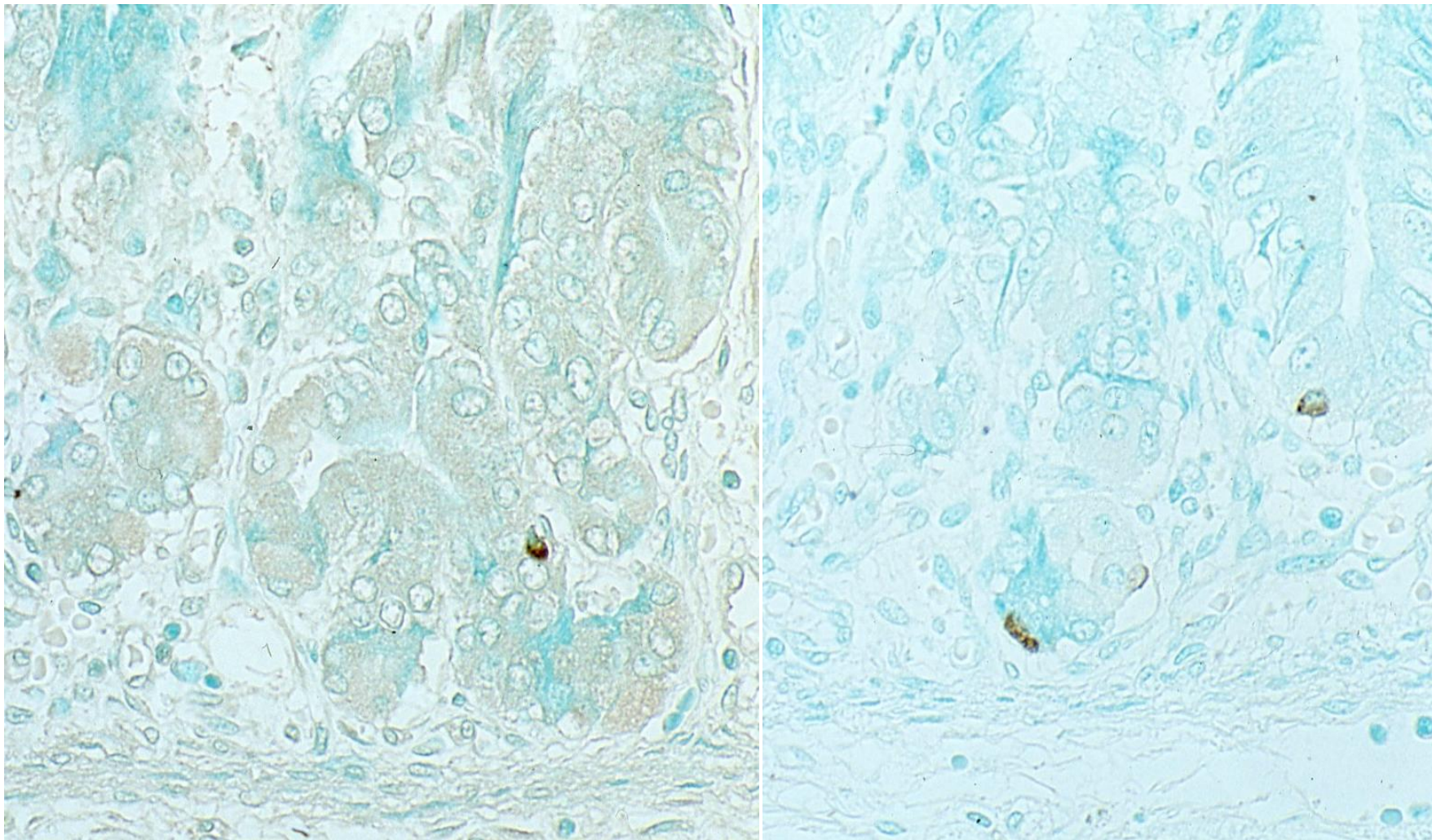
Human oxyntic gastric mucosa of a 22 fetal week-old fetus (left: glucagon, center: glicentin, right: BPP). Human fetal oxyntic gastric mucosa contains a few A-cells immunoreactive for glucagon and glicentin (proglucagon/enteroglucagon). A few bovine pancreatic polypeptide (BPP)-immunoreactive cells are also seen.



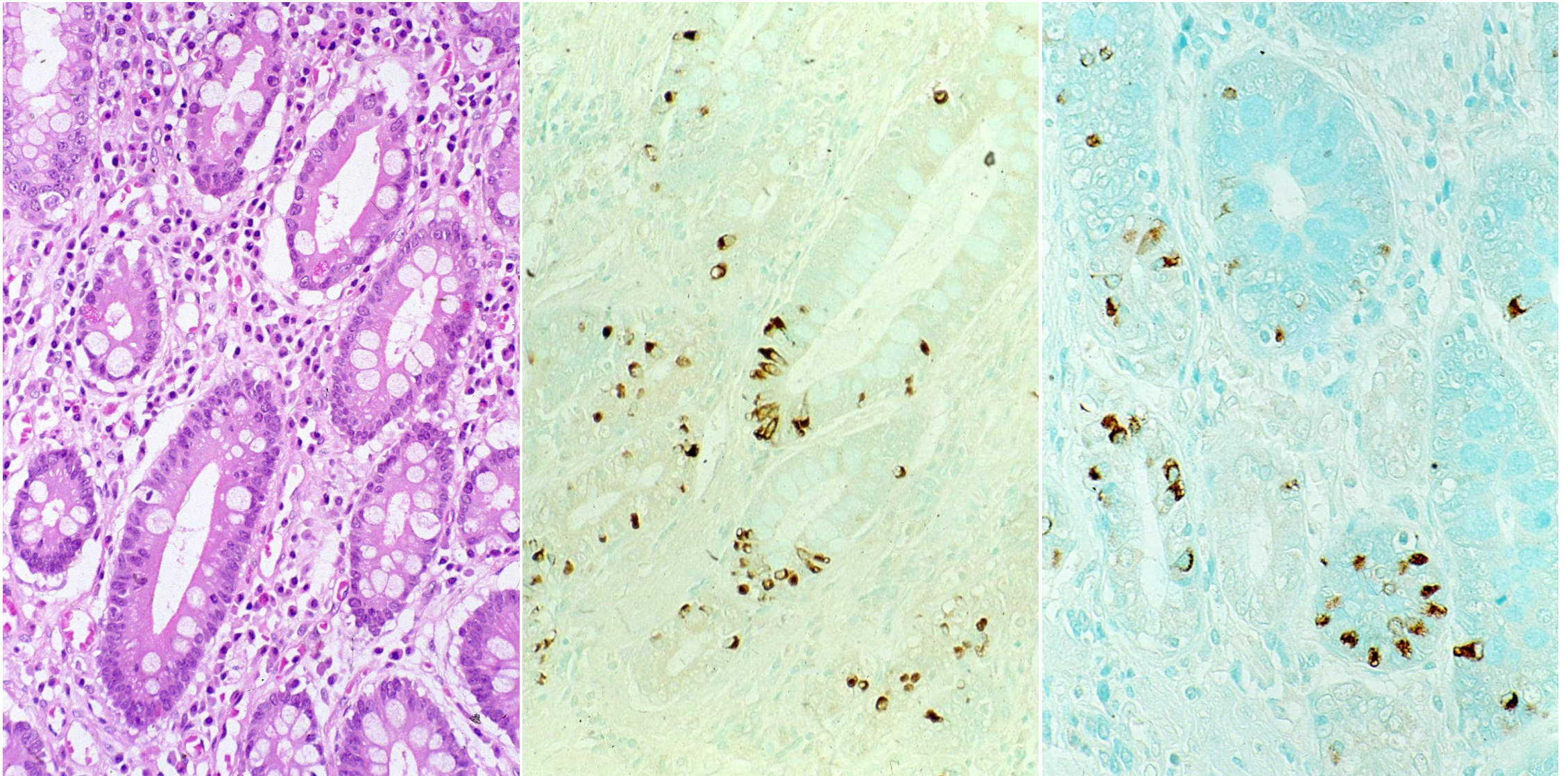
Human oxyntic gastric mucosa of a 22 fetal week-old fetus (mirror sections, left: glycinin, right: BPP). Part of A-cells in the human fetal oxyntic gastric mucosa simultaneously contains glycinin (proglucagon/enteroglucagon) and bovine pancreatic polypeptide (BPP), as arrowheads indicate.



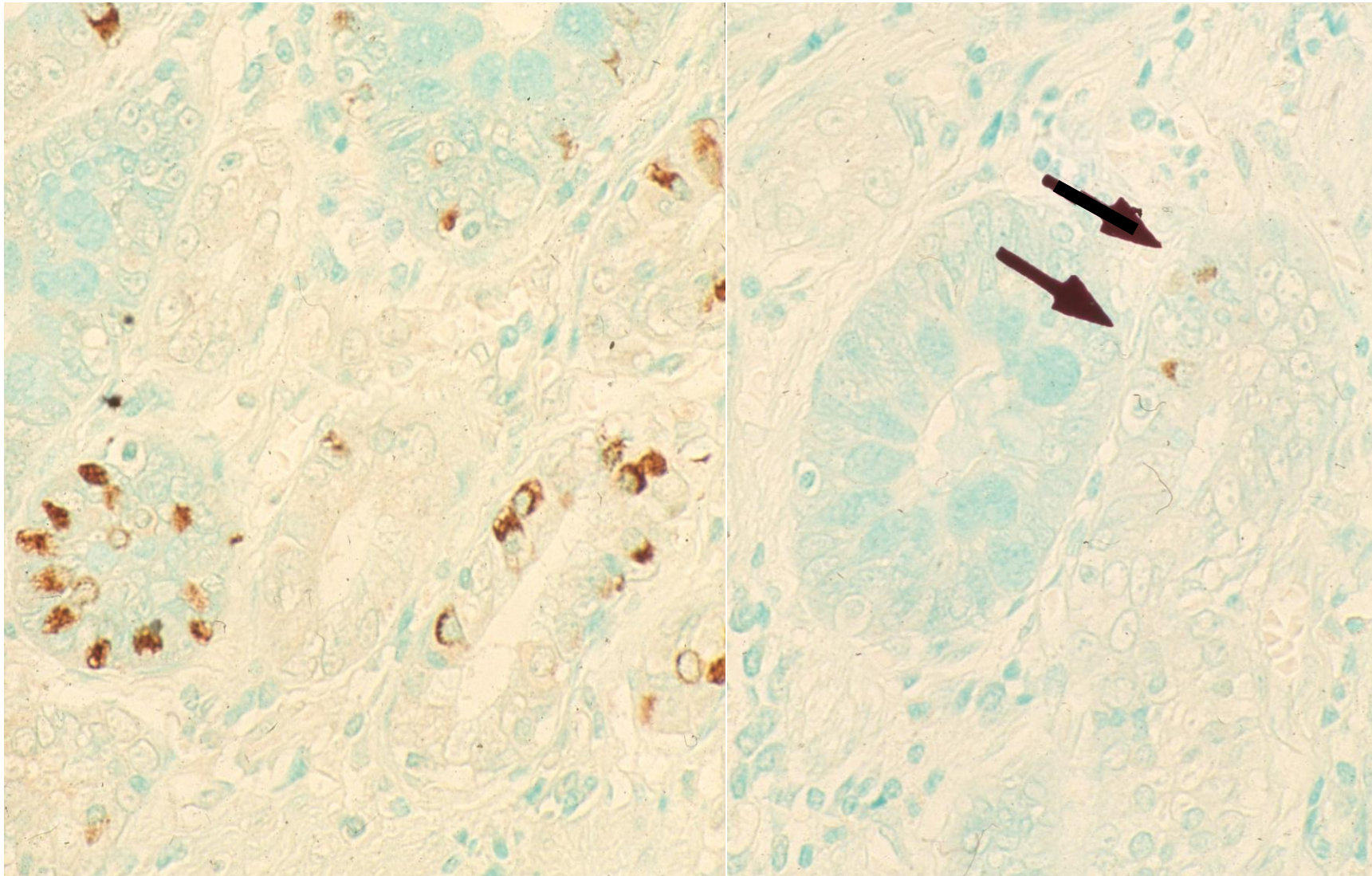
Human oxyntic gastric mucosa of a 35 fetal week-old fetus (mirror sections, left: glucagon, right: glicentin). A-cells in the human fetal oxyntic gastric mucosa simultaneously contains both glucagon and glicentin (proglucagon/enteroglucagon).



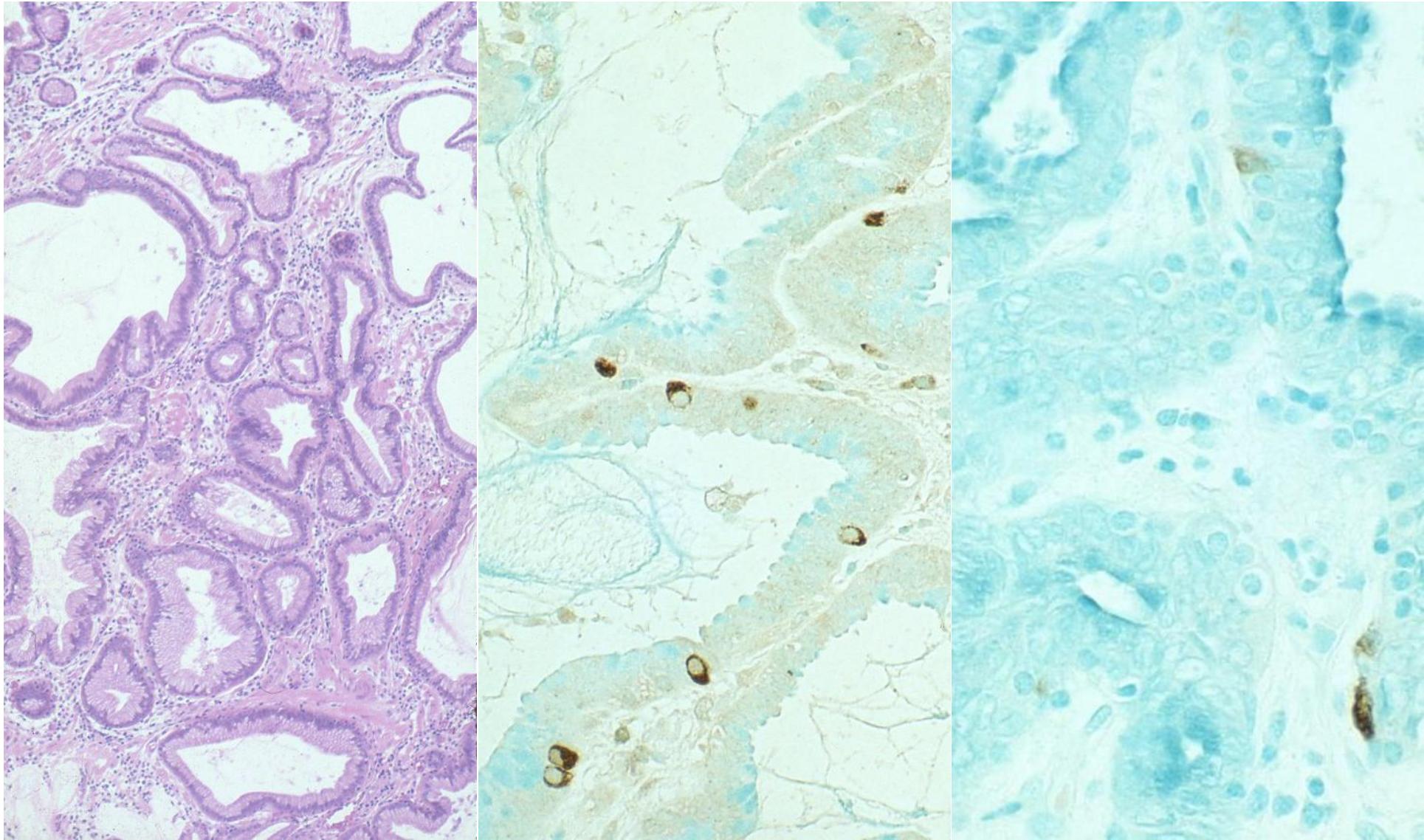
Human oxyntic gastric mucosa of a 3-day-old neonate (left: glucagon, right: glicentin). Human neonatal oxyntic gastric mucosa contains a few A-cells immunoreactive for glucagon and glicentin (proglucagon/enteroglucagon).



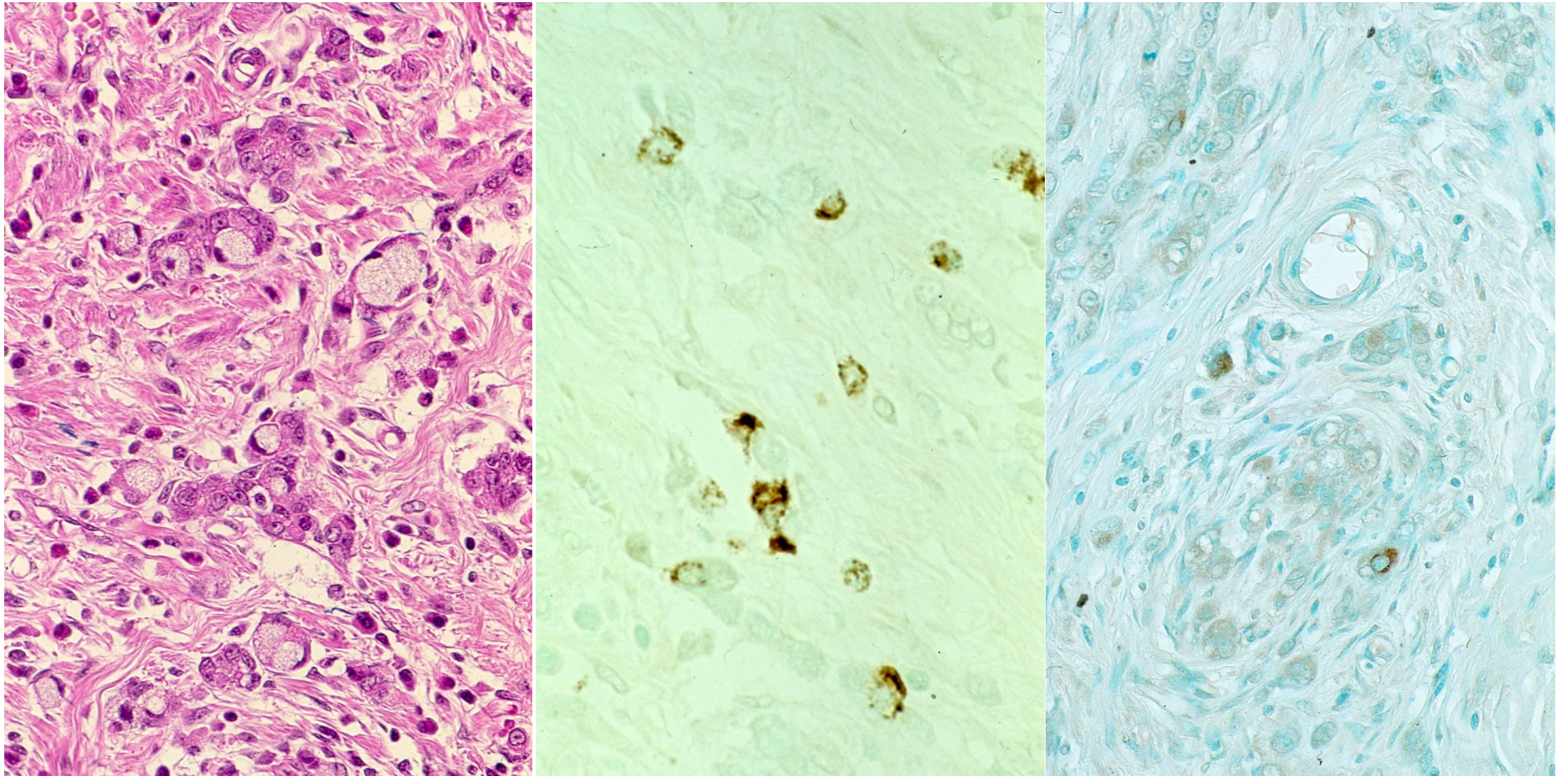
Intestinal metaplasia of the gastric mucosa reveals marked hyperplasia of glicentin-immunoreactive neuroendocrine cells. (left: H&E, center and right: Immunostaining for glicentin)



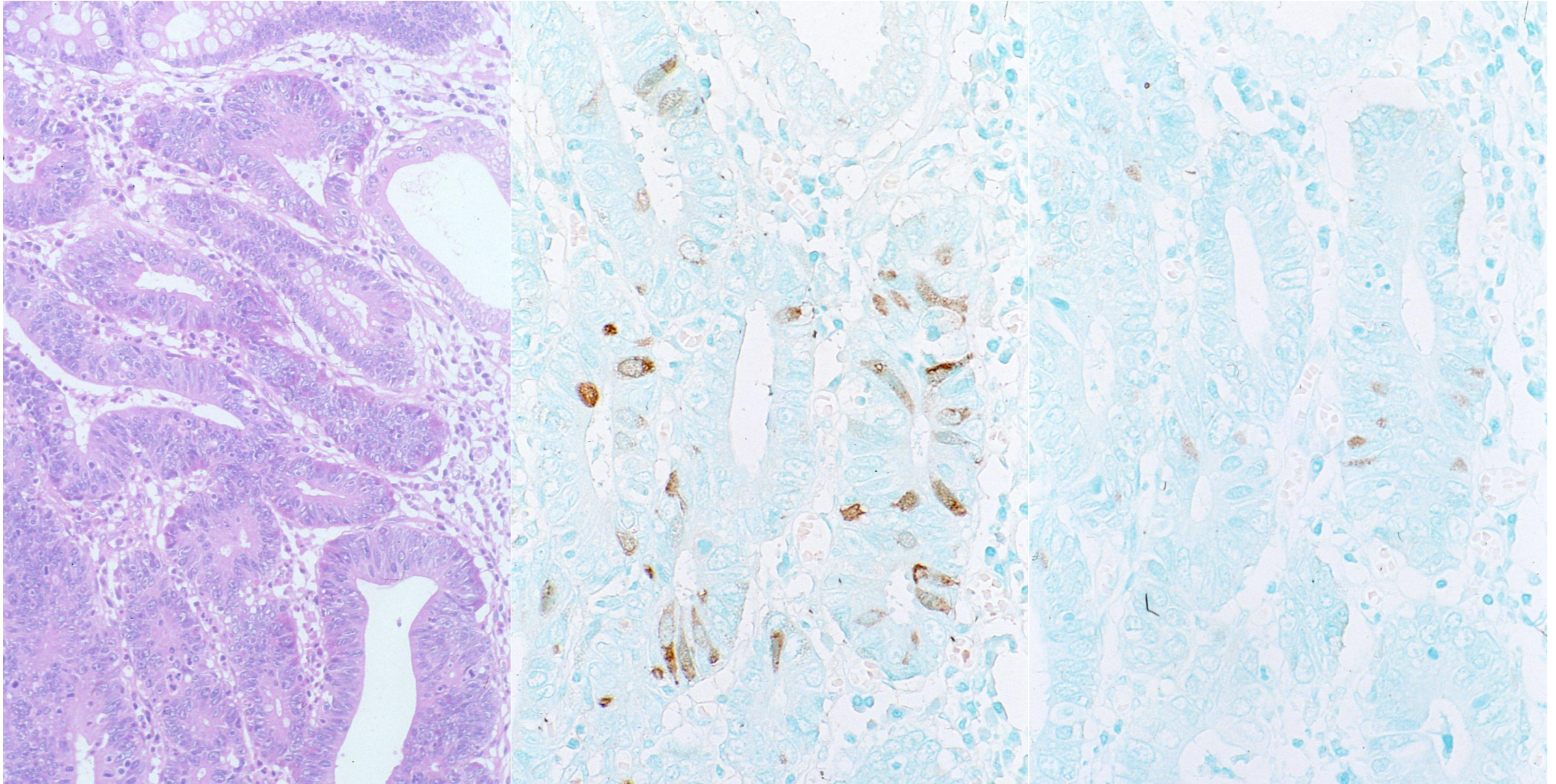
Intestinal metaplasia of the gastric mucosa reveals marked hyperplasia of glicentin-immunoreactive neuroendocrine cells. Only part of them express pancreatic glucagon (arrows). (left: glicentin, right: glucagon)



Hamartomatous polyp (large fundic gland polyp) of the oxyntic gastric mucosa. Glicentin-immunoreactive neuroendocrine cells are scattered in the polyp, and part of them are positive for pancreatic glucagon. (left: H&E, center: glicentin, right: glucagon)



Scirrhus carcinoma of the stomach contains glicentin-immunoreactive cells and fewer glucagon-immunoreactive cells. Poorly differentiated morphology with signet ring-type cancer cells is observed. (left: H&E, center: glicentin, right: glucagon)



Well-differentiated tubular adenocarcinoma of the stomach contains glycinin-immunoreactive cells and fewer glucagon-immunoreactive cells. (left: H&E, center: glycinin, right: glucagon)