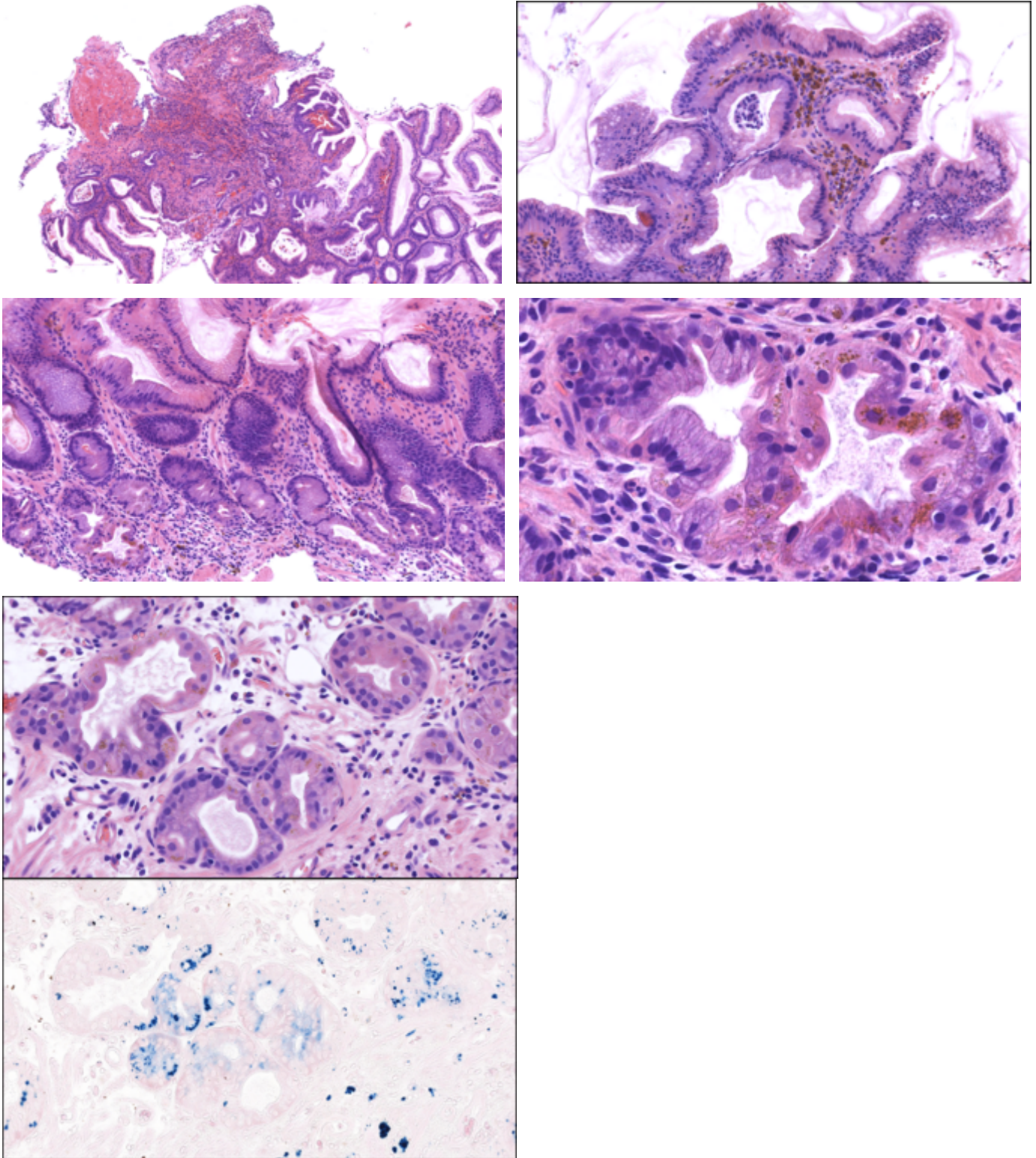


August 2020

86-year-old male patient with diffuse antral hyperemia and an eroded polyp in the proximal antrum.

What is your diagnosis?



Diagnosis:

Iron-pill induced reactive gastropathy with reactive polypoid foveolar hyperplasia, nonspecific and glandular (transfusion-associated) siderosis.

Comment:

An 86-year-old patient with a history of therapy-resistant anemia underwent gastroscopy. During endoscopy, a polypoid lesion was identified in the proximal antrum, surrounded by diffuse hyperemia. Biopsy samples were taken from both the polyp and its surroundings. The biopsies obtained from the polyp showed hyperplastic foveolar epithelium with reactive-reparative changes, focal erosions, and mild active inflammation (Panel A). Clusters of hemosiderin-laden macrophages were present in the lamina propria (Panel B). In the non-polypoid samples, indistinct brown pigment deposition was noticed in the cytoplasm of the basal pyloric glands (Panel C, D and E), underneath the reactive foveolar epithelium. Prussian blue staining highlighted both the interstitial hemosiderin-laden macrophages in the polyp and the brown glandular pigmentation in the non-polypoid mucosa (Panel F).

Chart review disclosed per of ferrous sulfate supplementation and repeated blood transfusions due to myelodysplastic syndrome related anemia. The changes detailed above are consistent with iron pill-induced reactive gastropathy with reactive polypoid foveolar hyperplasia; combined with mild glandular siderosis, the latter of which could be a result of multiple blood transfusions, and a sign of increasing parenteral iron overload.

Gastric iron deposition is present in less than 3.8% of upper GI tract biopsies and can manifest in three different patterns: 1) "nonspecific gastric siderosis" (2%); 2) "iron pill-induced gastritis" (1%); and 3) "gastric glandular siderosis" (<1%).

Nonspecific gastric siderosis is related to microscopic prior mucosal bleedings, leading to the accumulation of hemosiderin in predominantly macrophages situated in the lamina propria. This pattern of iron deposition has minimal clinical implications.

Iron pill gastritis is caused by oral iron supplementation in the form of ferrous sulfate pills. The condition is characterized by reactive gastropathy, gastric erosions, ulceration, and upper gastrointestinal bleeding. Occasionally the regenerative hyperplastic foveolar epithelium forms polypoid lesions designated as reactive polypoid foveolar hyperplasia. If present, a histological hallmark of iron pill-induced reactive gastropathy is the dense and coarse iron pigment deposition in the fibrino-inflammatory exudate covering the base of mucosal erosions.

Gastric glandular siderosis is a sign of iron overload in the body. This condition has been associated with hereditary hemochromatosis, repeated blood transfusions, liver cirrhosis, and prolonged hemodialysis. The faint brown pigment deposits can usually be found in the cytoplasm of the deep antral and oxyntic glands. As the deposits are sometimes barely noticeable, the use of Prussian blue histochemistry can facilitate the diagnosis. Early recognition is essential to prevent potential stricture formation.

For further reading:

- › Kothadia JP et al: Gastric siderosis: An under-recognized and rare clinical entity. *SAGE Open Medicine*. 2016; 4: 2050312116632109.
- › Marginean EC et al: Gastric siderosis: Patterns and significance. *American Journal of Surgical Pathology*. 2006;30:514–20.
- › Haig A, Driman DK. Iron-induced mucosal injury to the upper gastrointestinal tract. *Histopathology*. 2006;48(7):808–812.

Presented by:

Dr. Anita Sejbén and Dr. Bence Kővári, University of Szeged, Hungary.