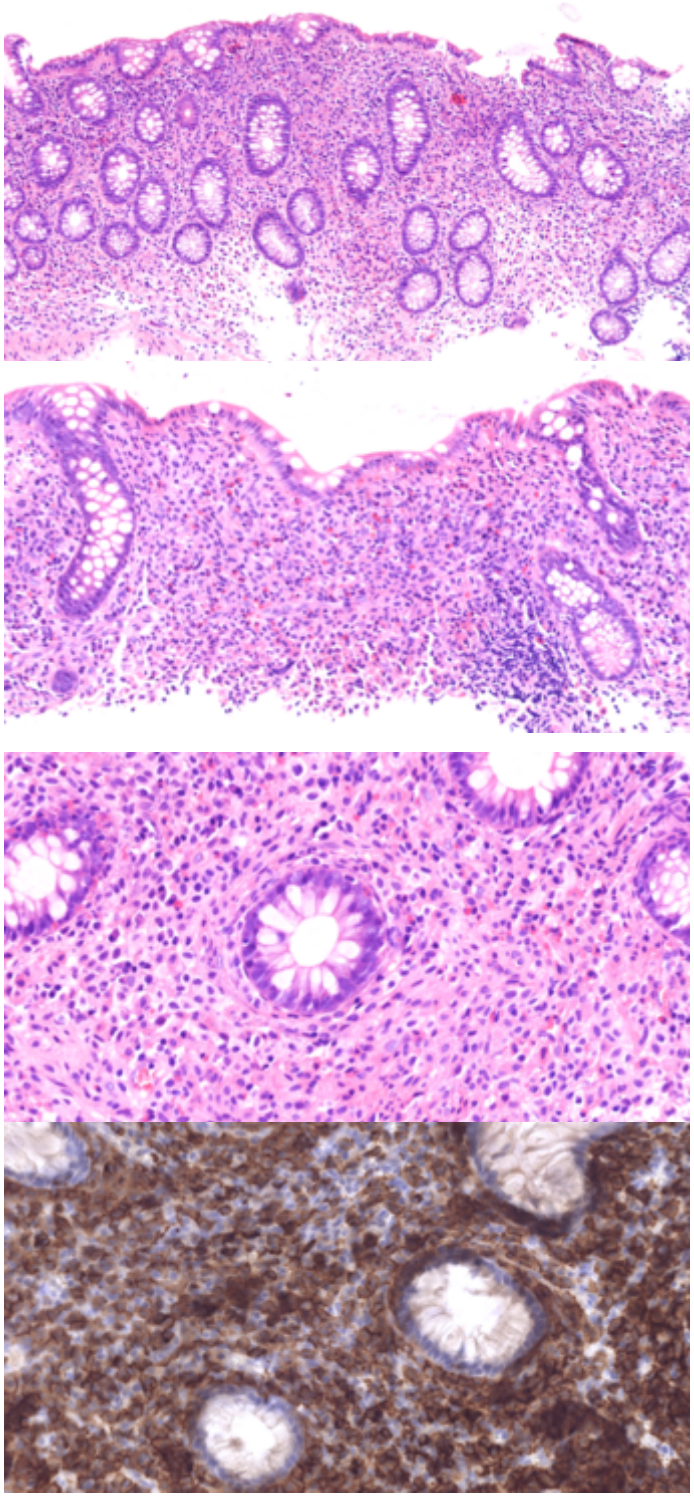
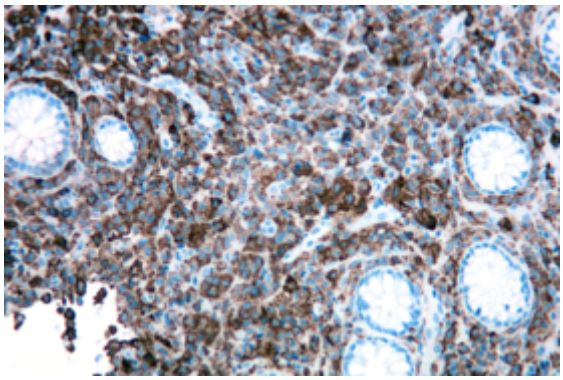
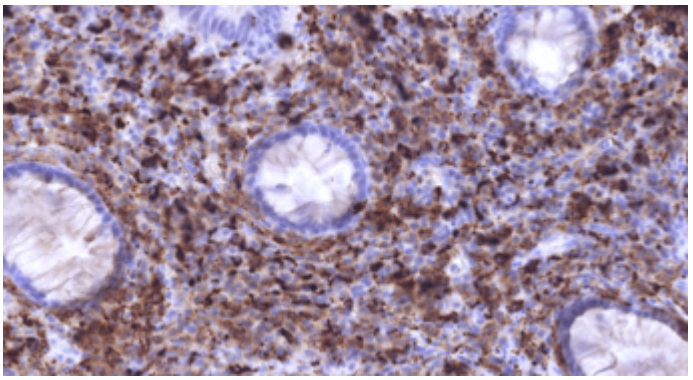
June 2021

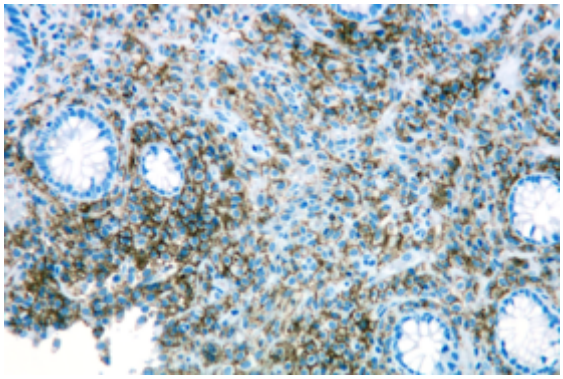
62-year-old male patient with focally lost haustration and nodularity of the cecal mucosa on endoscopy.

What is your diagnosis?









Diagnosis:

Cecal infiltration of systemic mastocytosis.

Comment:

A 62-year-old patient with a history of Helicobacter-pylori-associated pangastritis and goiter was hospitalized with non-specific abdominal pain. During endoscopy, the cecal mucosa showed patchy loss of mucosal haustration and nodularity. Histological examination revealed the expansion of the lamina propria by an infiltrate of numerous spindle cells with abundant, pale, and finely-granulated eosinophilic cytoplasm and mildly atypical and focally hyperchromatic nucleus. Intermingled with the spindly cells, the presence of numerous eosinophil granulocytes and histiocytes, as well as sparsely lymphoplasmacytic cells, were noted. Focal and mild crypt distortion was also visible (Panels A-C). Immunohistochemistry revealed diffuse CD117 (Panel D) and Tryptase (Panel E) as well as focal CD68 positivity (Panel F), while the Ki-67 proliferation index was 1%. S100 was negative. Additional immunohistochemistry demonstrated CD25 positivity, suggesting the neoplastic nature of mast cells (Panel G). Infectious agents were not detected by ancillary studies.

Mastocytosis refers to the clonal proliferation of neoplastic mast cells. According to the 2016 WHO classification, cutaneous and systemic mastocytosis and mast cell sarcoma can be differentiated. Both children and adults can be affected, and clinical studies identified activating c-KIT mutations in 80% of sporadic cases.

In cases of systemic mastocytosis, extracutaneous manifestations are typically present, including bone marrow, spleen, liver, and GI tract. During clinical diagnostics, the identification of the clonal origin and potentially mast cell activating medications and agents (NSAIDs, opioids, anesthetics, contrast material, vaccinations, insect bites) are essential. Clinical symptoms include anaphylactic reactions, osteoporosis, cardiovascular and respiratory events, and psychiatric disorders. The diagnosis of systemic mastocytosis is based on the histological findings, alongside clinical, biological, and molecular data. By immunohistochemistry, the abnormal positivity of CD25 has been reported to correlate with the presence of KIT 816 codon mutation. Differential diagnosis subsumes other disorders with increased presence of mucosal mastocytes and eosinophils including irritable bowel syndrome and mastocytic enterocolitis, eosinophilic colitis, vasculitides, as well as phaeochromocytoma, and carcinoid syndrome.

GI manifestation of systemic mastocytosis is relatively common (40-80%) and can involve any segment of the GI tract. Non-specific symptoms such as abdominal pain, diarrhea, vomiting, nausea, and GI bleeding are the most common. Patients with a previous diagnosis of systemic mastocytosis are highly recommended to undergo GI examination, even in the absence of GI symptoms. Even though the symptoms of mastocytosis are typically not life-threatening, they can severely deteriorate the patients' quality of life. Therefore, treatment generally focuses on preventing mast cell degranulation and eradication.

For further reading:

- Pardanani A: Systemic mastocytosis in adults: 2019 update on diagnosis, risk stratification and management. Am J Hematol. 2019; 94: 363-377.
- Valent P et al.: Mastocytosis: 2016 updated WHO classification and novel emerging treatment concepts. Blood. 2017; 129: 1420-1427.
- Scherber LM et al: How do we diagnose and treat systemic mastocytosis in adults. Br J Haematol. 2018; 180: 11-23.
- Sokol H et al.: Gastrointestinal involvement and manifestations in systemic mastocytosis. Inflamm Bowel Dis. 2010; 16: 1247-1253.
- Vajpeji A.: Gastrointestinal manifestations of sytemic mastocytosis. Diagn Histopatho. 2016; 22: 167-169.

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