

Image of the Month

Omalizumab-induced colitis ☆☆☆☆☆

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A 73-year-old female underwent colonoscopy on November 2019 due to a 3-months history of diarrhea without weight loss, abdominal pain or fever. Bacterial and parasitic stool search were negative, while fecal occult blood test was positive and fecal calprotectin (FC) was significantly increased (397 µg/g, n.v. <50 µg/g). She had been under treatment for 4 months with monthly subcutaneous omalizumab 300 mg due to severe asthma. Colonoscopy showed diffuse ulcer and erosions from ascending to sigmoid colon, while the rectum showed just hyperemia (Fig. 1, panels a–d). Histology showed a diffuse lympho-monocytic infiltrate, with fibrinoid necrosis, absence of neutrophils and with regular glandular architecture (Fig. 1, panels e–h). A course of mesalazine was started but stopped rapidly because diarrhea worsened. As it was

the time of her monthly omalizumab injection, the patient was advised to suspend omalizumab injection, and her clinical picture improved rapidly (diarrhea disappeared within 3 days, and FC dropped to normal value (28 µg/g). The diagnosis of omalizumab-induced colitis was posed, and the patient stopped omalizumab without any recurrence of the diarrhea. The last endoscopic examination (July 2020) was normal (Fig. 2).

Omalizumab is an anti-human IgE monoclonal antibody [1] selectively binding the two Cε3 domains of human IgE, forming trimeric or hexameric IgE/anti-IgE immune complexes [2]. We speculate that omalizumab-induced colitis could occur due to large immune complexes dropping into small vessels, causing necrosis.

☆ Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data: Antonio Tursi, Rosanna Nenna.

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** Informed patient consent was obtained.

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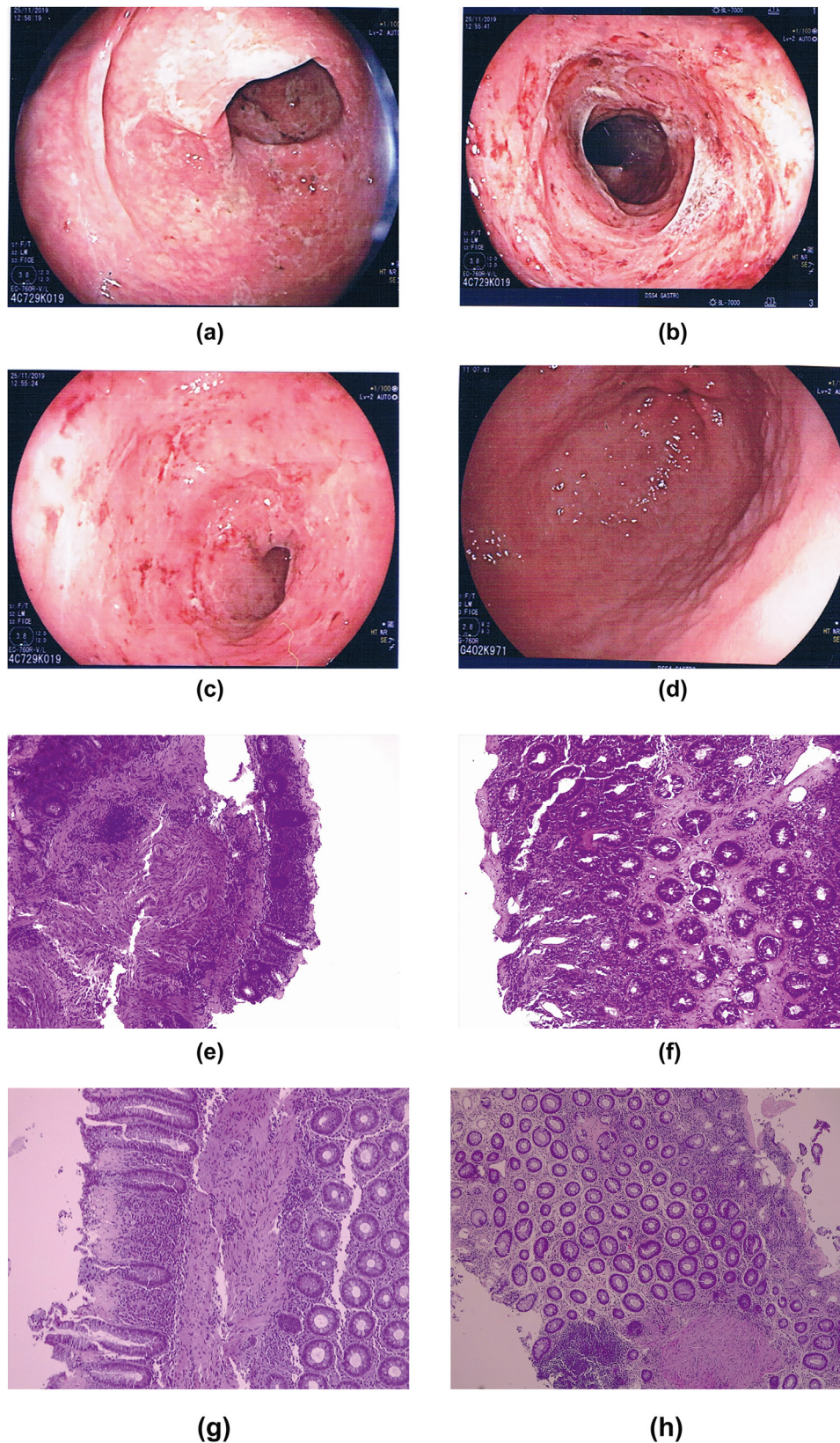


Fig. 1. Endoscopic appearance of the colon. In ascending (panel a), transverse (panel b), and descending colon (panel c) diffuse erosions and ulcers can be observed, while in the rectum (panel d) only hyperemia can be seen. **Fig. 2.** Histopathology. In ascending colon (Hematoxylin & Eosin 5x, panel e) we can see only chronic inflammatory infiltrate with lymphoid follicles; in transverse colon (Hematoxylin & Eosin 5x, panel f), descending colon (Hematoxylin & Eosin 5x, panel g) and in the rectum (Hematoxylin & Eosin 5x, panel h) we can see chronic inflammatory infiltrate with lymphoid follicles and fibrinoid necrosis. Significantly, cryptitis, cryptic abscesses, changes of the glandular architecture and neutrophils were totally absent in all specimens.

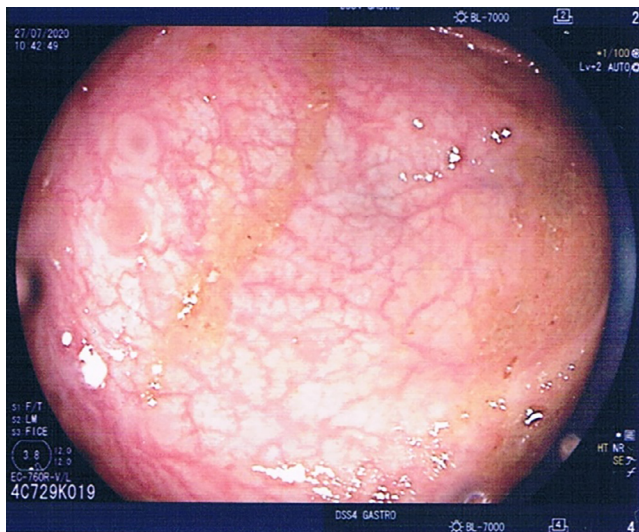


Fig. 2. Endoscopic appearance of the sigmoid six months later. The endoscopic appearance of the colon was normal.

Declaration of Competing Interest

None.

References

- [1] Presta LG, Lahr SJ, Shields RL, et al. Humanization of an antibody directed against IgE. *J Immunol* 1993;151:2623–32.
- [2] Hochhaus G, Brookman L, Fox H, et al. Pharmacodynamics of omalizumab: implications for optimised dosing strategy and clinical efficacy in the treatment of allergic asthma. *Curr Med Res Opin* 2003;19:491–8.