Clinical Image

Toxic Megacolon Associated with Cytomegalovirus Infection with Total Colonic Necrosis

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1. Clinical Image

A 73-year-old woman presenting with anorexia was admitted. She had been treated for diabetes and hyperlipidemia, but had no past history of Inflammatory Bowel Disease (IBD) or corticosteroid therapy. On the fifth day of hospitalization, computed tomography (CT) revealed edema and dilation of the rectum and sigmoid colon.

Colonoscopy (CS) revealed redness and irregular multiple ulcers of the total colon, necessitating differential diagnosis for IBD (Figure 1a, b). On day 21 of admission, contrast enhanced CT revealed subtotal colon necrosis irrespective of depressure with CS (Figure 1 c). Emergent subtotal colectomy was carried out, and an artificial stoma was created at the ileum. Grossly, the colon demonstrated erosion and hemorrhage (Figure 2a), especially at the transverse and descending colon.

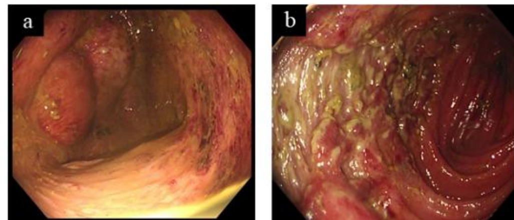

Figure 1 a, b: Colonoscopy findings. Diffuse redness and irregular ulcers of the total colon.

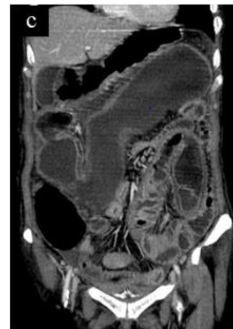

Figure 1c: Contrast-enhanced CT. Toxic megacolon with subtotal colon necrosis.

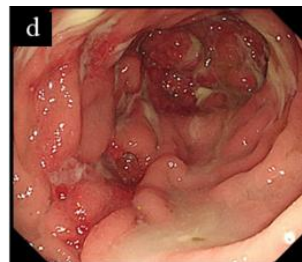

Figure 1d: Colonoscopy findings. Multiple punched-out ulcers.

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Histopathological findings revealed severe erosion and neutrophil infiltration with intranuclear eosinophil inclusion (owl's eye inclusion) (Figure 2b, c) suggestive of cytomegalovirus (CMV), which was immunoreactive to CMV antigen (Figure 2d). The background showed no cryptitis, crypt abscess and granuloma ruling out IBD. On day 44 of admission, CS revealed multiple punched-out ulcers (Figure 1d). Despite the negative findings of PCR and antigenemia for CMV, Ganciclovir 500 mg/day was administered for 14 days leading to gradual improvement of the clinical course. The risk of CMV infection increases outside transplantation settings [1].

Colonic infection with CMV has been increasingly implicated in inflammatory bowel disease [2, 3]. In an immunocompromised host, a primary CMV infection or the reactivation of a latent CMV infection can cause severe disseminated disease, including colitis [4].

Although CMV is usually dormant in immunocompetent adults, it rarely causes serious life-threatening complications. The gastrointestinal tract is one of the commonly involved organs, where CMV produces a spectrum of clinical manifestation from mild non-specific abdominal pain and diarrhea to severe infection with toxic megacolon and death [5].

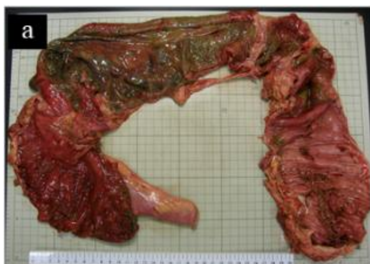

Figure 2a: Gross findings of the resected colon. Extensive erosion and hemorrhage of the total colon.

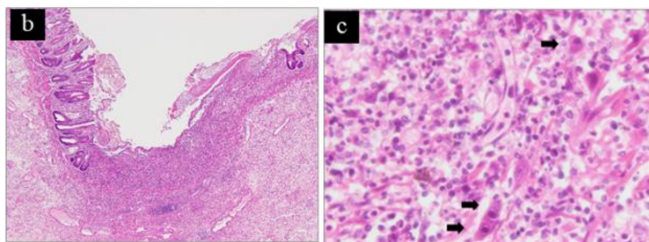

Figure 2b, c: Histopathological findings. Severe erosion and neutrophil infiltration. (HE stain.
c. Histopathological findings. Intranuclear eosinophilic inclusion (owl's eye inclusion). (HE stains.

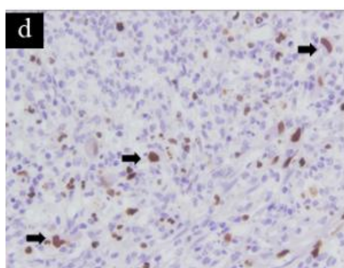

Figure 2d: Immunohistochemistry of CMV. Positivity for CMV antigen.

2. Keywords: Toxic megacolon; Cytomegalovirus infection; Immunocompetent patient; Owl's eye inclusion

3. Acknowledgments

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