Severe Cytomegalovirus ileitis preceded by acute bacterial enteritis in an immunocompetent patient

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To the Editor,

Cytomegalovirus (CMV) is an important cause of serious disease in immunosuppressed patients, most often as a result of latent viral reactivation (1). CMV ileitis is a rare entity, even among immunosuppressed subjects; in immunocompetent patients, only a few cases have been previously reported (1,2). We present the case of an immunocompetent adult, with an unremarkable previous medical history, who developed an acute severe bacterial ileal infection followed by CMV ileitis.

A 47-year-old male, with a history of gastroesophageal reflux treated with a proton pump inhibitor, presented with a 3-day history of periumbilical cramp-like pain and diarrhea. He mentioned that his wife and daughter had had similar symptoms but recovered spontaneously. The patient, however, developed abdominal distention, constipation and vomiting, for which he sought medical attention. On examination he was febrile, dehydrated and with diffuse abdominal tenderness. Laboratory findings showed leukocytosis (18.2 x 10^9cells/L), elevated C-reactive protein (380mg/dL) and severe renal dysfunction (serum creatinine 5.73 mg/dL). A CT scan was performed, which demonstrated distal ileal thickening with dilatation of small bowel loops and multiple abdominal enlarged lymph nodes. Further evaluation revealed a high titer Widal test result (O antigen 1:640) and a positive anti-CMV IgG antibody, with negative anti-CMV IgM. Cefotaxime was started, leading to complete clinical and radiological improvement. Four weeks after the initial presentation, while asymptomatic, the patient underwent a colonoscopy which identified diffuse edema and pearly white ulcers in the terminal ileum (Figure 1) ; the colonic mucosa was unremarkable. A few days later, he returned to the emergency department with abdominal distension, vomiting and no bowel movements for the last 2 days. A CT scan demonstrated wall thickening in the terminal ileum and laboratory tests revealed a positive anti-CMV IgM antibody. The previously obtained ileal biopsies showed intranuclear and intracytoplasmic inclusions (Figure 2a) and immunohistochemical staining for CMV identified scattered positive cells at the ulcer base (Figure 2b). Intravenous ganciclovir was started, followed by valganciclovir for a total of 3 weeks, resulting in with complete resolution of symptoms. After 20 months of follow-up, the patient maintained complete clinical, endoscopic and imaging remission.

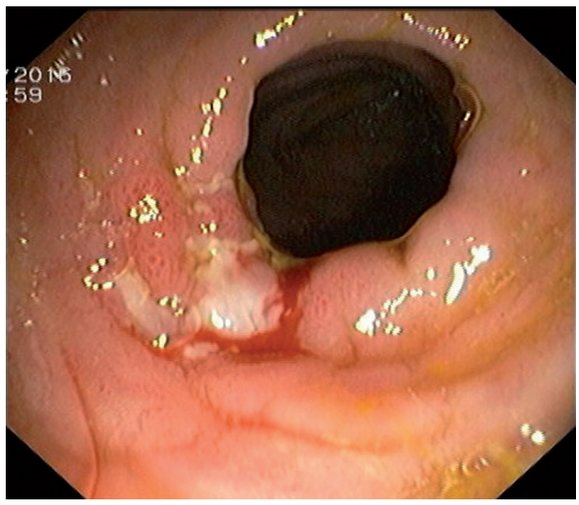

Figure 1 — Terminal ileum with mucosal edema and pearly white ovoid ulcers.

The authors considered Salmonella infection the main diagnosis in the patient's first admission, due to clinical presentation and epidemiological history, and believe that it may have acted as a trigger for CMV reactivation. The diagnostic gold standard is a positive blood or stool culture, as the Widal test is generally considered a low sensitive and specific test in areas where Salmonella infection is endemic ; nonetheless, in a non-endemic country, a high titer should raise suspicion of Salmonellosis (3). Moreover, in a patient who had a risk factor – proton pump inhibitor therapy (4) –, an epidemiological history and a clinical presentation compatible with that infection, this diagnostic hypothesis should be emphasized.

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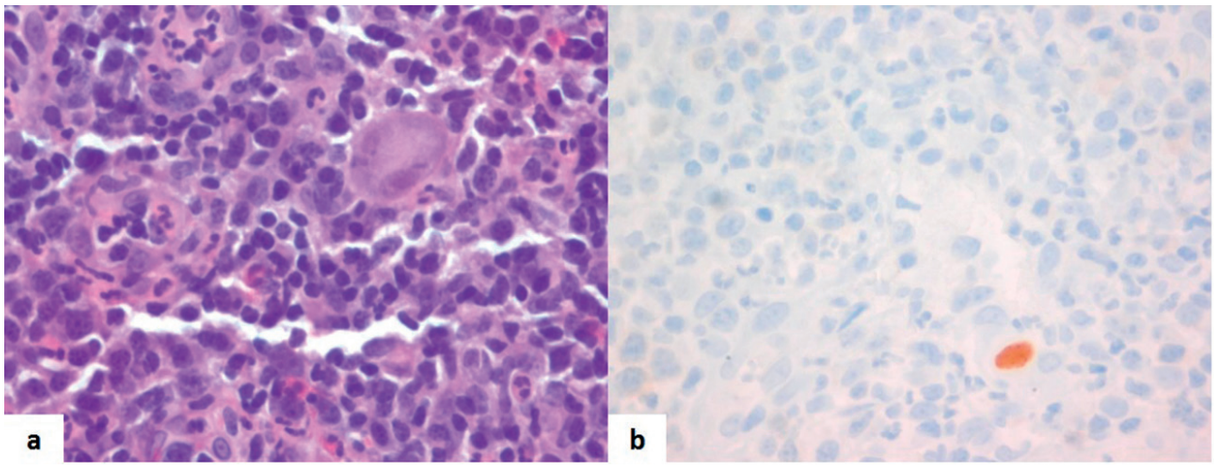

Figure 2 — Histopathological examination, (a) showing enlargement of infected cells and intranuclear inclusions (HE stain, 100x) and (b) scattered positive cells for CMV (immunohistochemical staining, 100x).

The presence of *de novo* anti-CMV IgM antibody in a patient with previous positive anti-CMV IgG represents, most problably, reactivation of latent CMV infection; histopathology with immunostaining is the most specific method for its diagnosis (1,2). In a review of the literature, we identified 8 case reports of such complication in immunocompetent subjects ; however, all of them had conditions that are known to induce alterations in the immune system, such as older age, metastatic cancer, corticosteroid therapy, concurrent inflammatory bowel disease or sepsis with the need for mechanical ventilation (1,2,5,6). In conclusion, we would like to underline the rarity of our challenging clinical case, in which an acute severe bacterial infection may have acted as a trigger for CMV reactivation, leading to the unique development of such condition in an immunocompetent individual without any previously known risk factor for immune system dysfunction.

References

1. AL-OMARI A., ALJAMAAN F., ALHAZZANI W., SALIH S., ARABI Y. Cytomegalovirus infection in immunocompetent critically ill adults : literature review. *Annals of Intensive Care*, 2016, **6** (1) : 110.
2. LANCINI D., FADDY H.M., FLOWER R., HOGAN C. Cytomegalovirus disease in immunocompetent adults. *Med. J. Aust.*, 2014, **201** (10) : 578-80.
3. BAVISHI C., DU PONt H. Systematic review: the use of proton pump inhibitors and increased susceptibility to enteric infection. *Aliment. Pharmacol. Ther.*, 2011, **34** (11-12) : 1269-1281.
4. ANDUALEM G., ABEBE T., KEBEDE N., GEBRE-SELASSIE S., MIHRET A., ALEMAYEHU H. A comparative study of Widal test with blood culture in the diagnosis of typhoid fever in febrile patients. *BMC Res. Notes*, 2014, **7** : 653.
5. NG S.C., NOURSADEGHI M., VON HERBAY A., VAIZEY C., PITCHER M.C., FLANAGAN K.L. Cytomegalovirus ileitis associated with goblet cell carcinoid tumour of the appendix. *J. Infect.*, 2007, **54** (3) : 153-6.
6. SHAHANI L. CMV infection complicating the diagnosis of Crohn's disease in an immunocompetent patient. *BMJ Case Rep.*, 2012, **8**, pii:bcr1120115254.