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CASE REPORT

Severe diarrhea caused by cytomegalovirus in an elderly man

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Introduction

Gastrointestinal (GI) cytomegalovirus (CMV) disease is common in patients who are immunocompromised but is rare in immunocompetent hosts. Regardless of the host factor, CMV colitis accounts for the majority of cases of GI CMV disease [1]. CMV enteritis is quite exceptional, particularly in an immunocompetent host. The endoscopic findings and clinical features have not well been recognized.

We report a case of CMV enteritis with an unusual endoscopic finding of diffuse suppurative inflammation in the small intestine. To the best of our knowledge, this is the first report in the English literature of CMV enteritis in an immunocompetent patient with this atypical endoscopic finding.

Case report

A 70-year-old man was in relatively good health before symptoms appeared and had no history of diabetes mellitus, hypertension, immunosuppressive drug intake, or habitual alcohol drinking. He was admitted to our hospital because he was having severe, watery diarrhea along with fever and abdominal pain about three to four times a day and had a body weight loss of approximately 8 kg within 2 weeks. The patient visited another hospital first and an initial esophagogastroduodenoscopy showed nonspecific findings. Abdominal computed tomography and an upper GI series disclosed a long segmental wall thickening at the distal duodenum and jejunum (Fig. 1). As the symptoms persisted, he was transferred to our hospital for further investigation and treatment.

On admission, the patient appeared to have acute illness, with blood pressure of 127/77 mmHg, heart rate of

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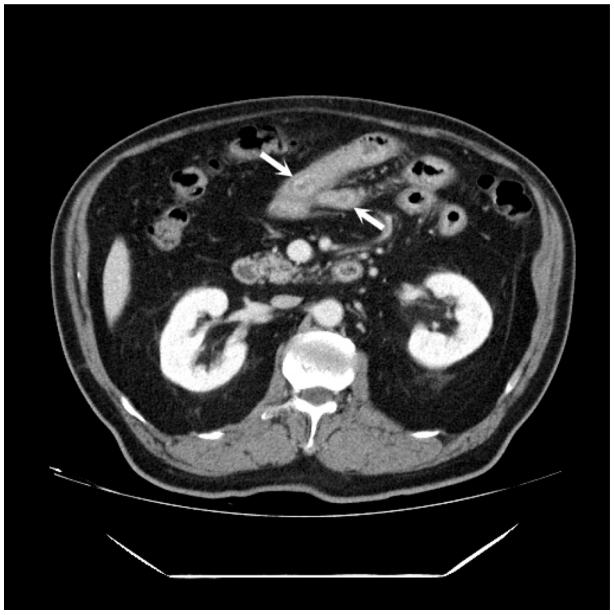

Figure 1 The abdominal computed tomography scan shows a long segmental luminal narrowing at the distal duodenum and jejunum.

82 beats/min, respiratory rate of 16 breaths/min, and body temperature of 36.8°C. Physical examination revealed localized tenderness over epigastric and paraumbilical areas. Initial laboratory investigations were normal except for leukocytosis (white blood cell count: 12,400/mm^3), low serum albumin (1.8 g/dL; normal 3.5-5.0) and high C-reactive protein level (10.0 mg/dL; normal below 0.5). Esophagogastroduodenoscopic and colonoscopic evaluations were normal. On enteroscopic examination, an extensive inflammatory change with a large amount of mucopurulent exudates with fibrotic and necrotic tissue scattered was noticed after the third portion of duodenum (Fig. 2A). A closer view showed a complete loss of mucosal architecture with some mucosa islands (Fig. 2B). The differential diagnosis after first enteroscopy was acute bacterial enteritis, inflammatory bowel disease like Crohn disease, and viral enteritis. Multiple biopsy specimens of the jejunum were sent to pathology for histologic examination, which only showed infiltration of dense inflammatory cells. There was no caseating granulomatous inflammation, evidence of Crohn disease, or other specific findings of viral infection. The culture and polymerase chain reaction for tuberculosis of the biopsy specimen were also negative. Under the tentative diagnosis of bacterial enteritis, the patient received total parenteral nutrition and broad-spectrum antibiotics with ceftriaxone plus metronidazole for 2 weeks. The subsequent serologic study was positive for anti-CMV immunoglobulin (Ig)G, negative for anti-CMV IgM, and negative for antihuman immunodeficiency virus. Immunological assessment for CD4 and CD8 lymphocytes was also found to be normal.

The patient's clinical condition deteriorated rapidly and he underwent repeated enteroscopy 2 weeks later. There was no obvious change and endosopic biopsy was performed again. The specimen obtained during the repeated enteroscopy revealed an endothelial cell that exhibits CMV

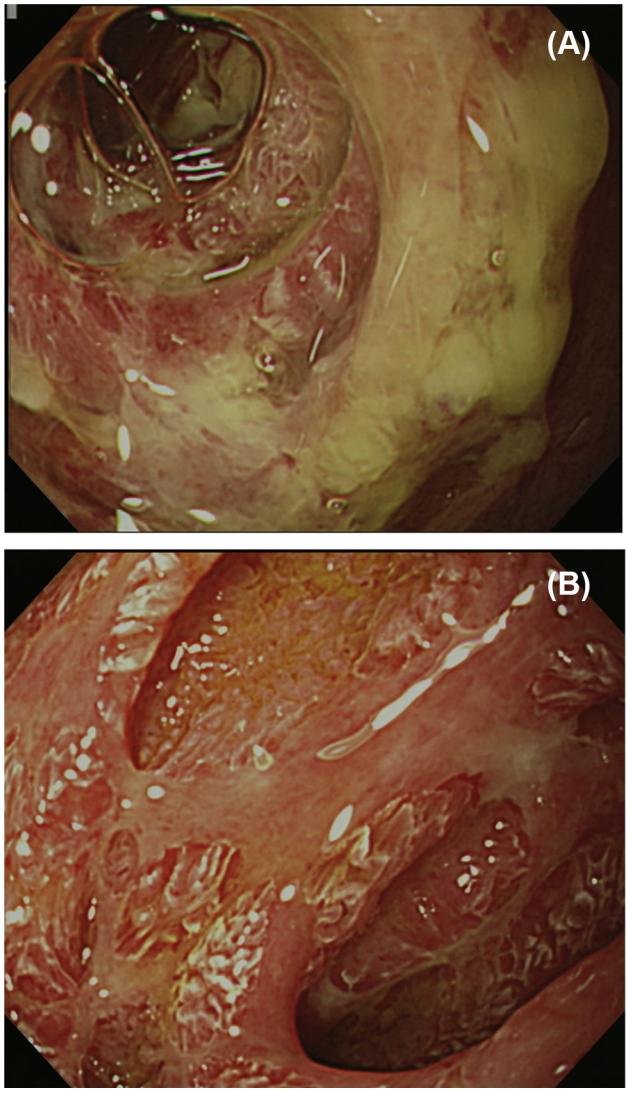

Figure 2 Endoscopic photographs of cytomegalovirus disease in the small intestine. (A) Extensive inflammatory change with mucopurulent appearance on the distal duodenum and jejunum. (B) A closer view shows a complete loss of mucosal architecture with some mucosa islands.

cytopathic changes with periodic acid-Schiff (PAS) stain, and CMV inclusions were also positive in the immunohistochemistry (IHC) stain (Fig. 3). Ganciclovir was then prescribed under the diagnosis of CMV enteritis. The patient's clinical condition improved and this patient was discharged after 2 weeks of therapy. At 6 months' posttreatment follow-up, the patient was well and had no other gastrointestinal symptoms.

Discussion

GI CMV is common in immunocompromised patients but rare in the immunocompetent hosts. CMV enteritis is a highly lethal disease and early diagnosis is crucial to enable prompt treatment. Nevertheless, it is challenging when CMV infection of the GI tract occurs in an immunocompetent patient or in the small bowel, beyond the diagnostic