

## A case of invasive cytomegalovirus duodenitis in an immunosuppressed patient 15 months after renal transplantation

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**Abstract** Cytomegalovirus (CMV) remains one of the most important infections in kidney transplantation. Only a handful of images have been reported in the literature thus far. We present classic pathologic and gross images of CMV duodenitis in an immunosuppressed patient more than one year post-renal transplantation.

**Keywords** Cytomegalovirus · CMV duodenitis · Renal transplant · Viremia · Immunocompromised · Duodenitis

### Case

A 65-year-old male presented with 10 days of abdominal discomfort, vomiting, and diarrhea. He underwent renal transplantation 15 months prior due to diabetic and hypertensive nephropathy with donor-positive and recipient-negative cytomegalovirus (CMV) IgG. He was maintained on mycophenolate, prednisone, and tacrolimus. Nucleic acid amplification detected 97,400 IU/mL of CMV consistent with viremia. He developed severe sepsis and was placed on valgancyclovir as only antimicrobial. On day 5, he developed bloody stools requiring transfusions and fluid resuscitation. His colonoscopy was normal. Esophagogastroduodenoscopy showed non-bleeding superficial duodenal ulcers (Fig. 1). Duodenal biopsy revealed cytomegaloviral inclusion bodies and positivity for p52 on immunohistochemistry (Fig. 2), indicating CMV duodenitis. The bleeding and diarrhea resolved after 5 and 30 days, respectively. His viral load became undetectable on day 30 of therapy.

Cytomegalovirus remains one of the most important infections in kidney transplantation. CMV duodenitis has been infrequently described, although recent studies found that CMV is activated easier in the upper rather than lower gastrointestinal tract [1, 2]. Images of CMV duodenitis have been seldom reported, mainly in patients with acquired immunodeficiency syndrome [3–5]. According to Sarkio et al. [2], duodenal inclusion bodies were detected only in 15 % of cases, all of them within a year post-transplantation. Given the scarcity and variety of CMV duodenitis histopathology, it is crucial that additional images are identified. We present classic images of primary CMV duodenitis in a patient more than one year post-renal transplantation. This entity should be suspected in any immunocompromised patient with persistent gastrointestinal symptoms.

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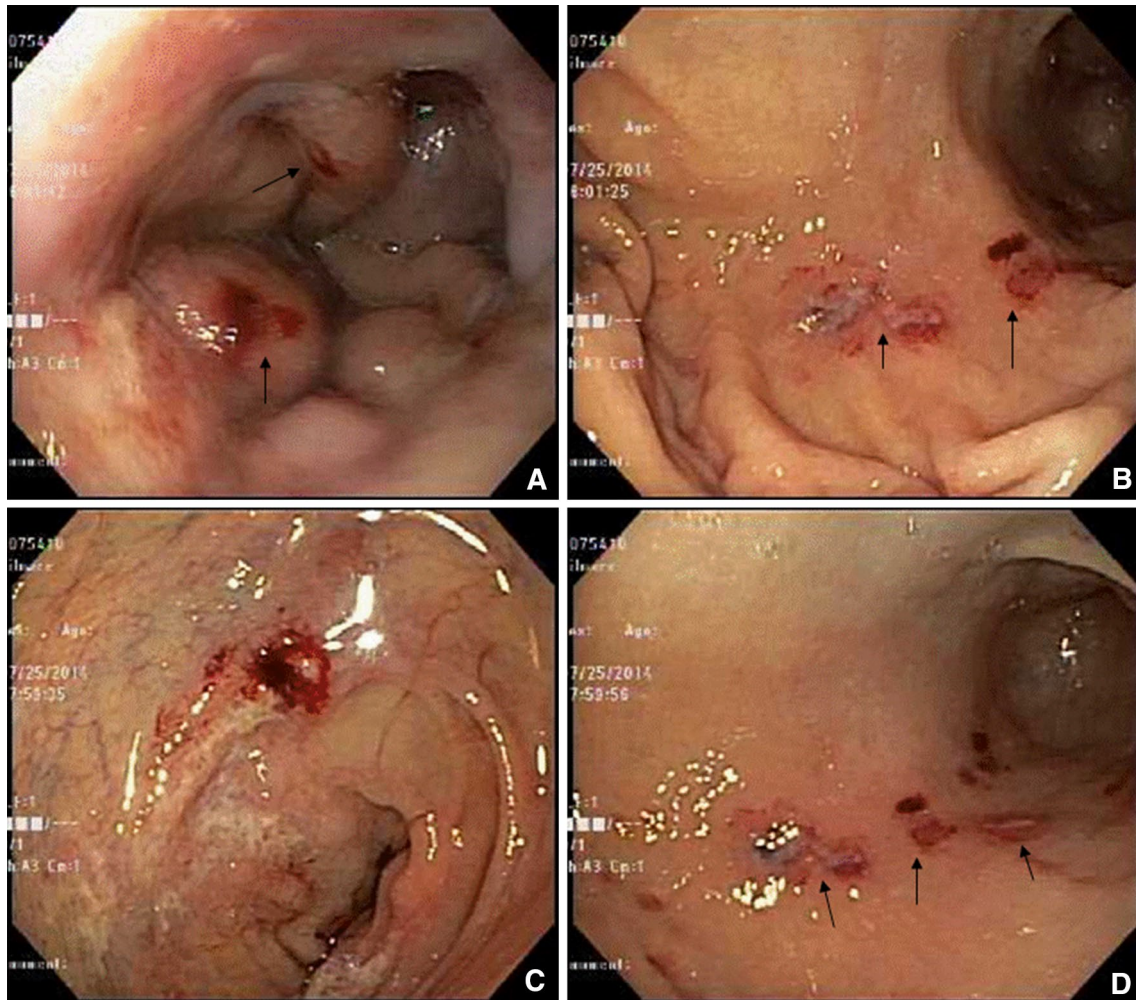
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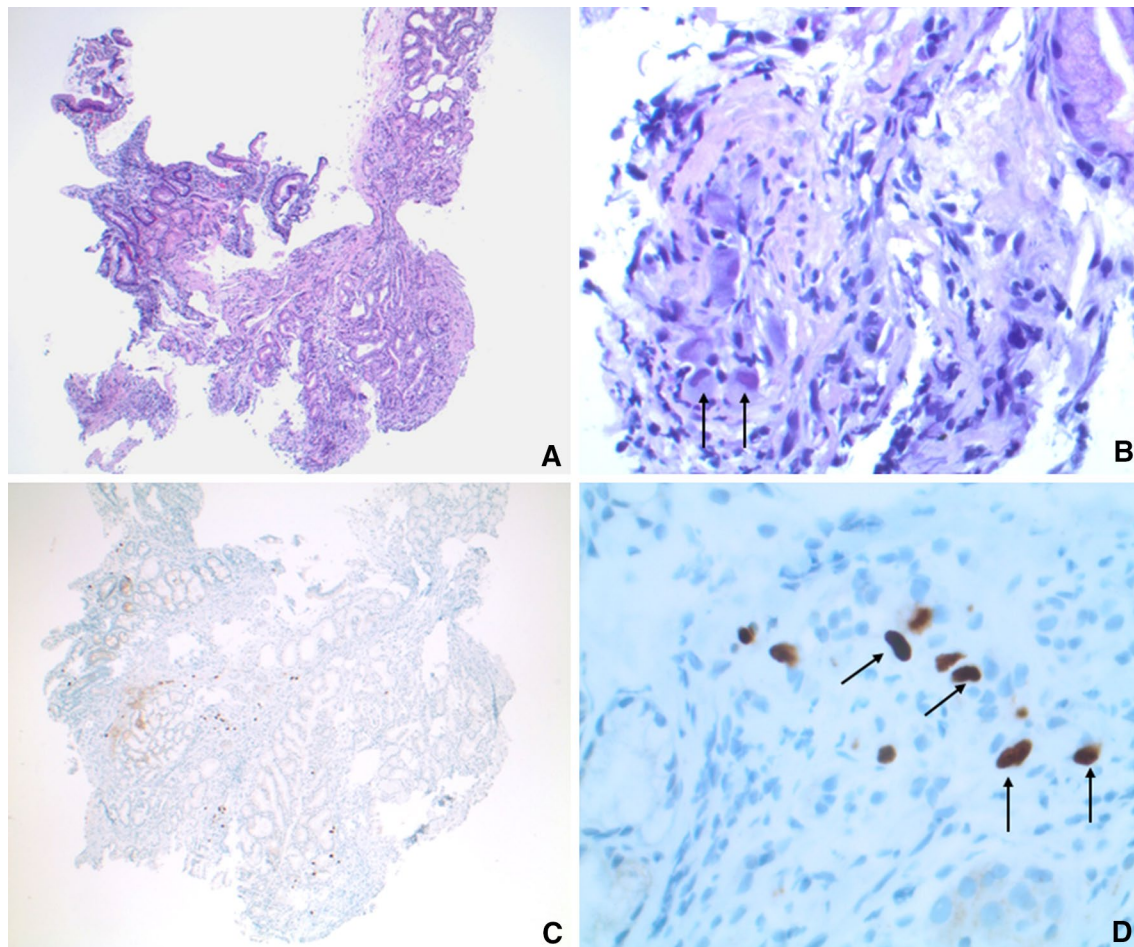
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**Fig. 1** Esophagogastroduodenoscopy photograph showing non-bleeding superficial duodenal ulcers and erosions (*noted by arrows*) with no stigmata of bleeding that were found in the first part of the

duodenum (**a**), junction of first and second parts of the duodenum (**b**), duodenal bulb (**c**, **d**). Post-biopsy changes are shown in **c**. The largest lesion was 13 mm in dimension



**Fig. 2** Duodenal mucosa with mucosal erosion (**a** HE  $\times 40$ ) and cytomegaloviral cytopathic change with inclusion bodies *noted by arrows* (**b** HE  $\times 400$ ). Immunohistochemistry for CMV shows posi-

tivity, *noted by arrows*, of DNA-binding protein, p52 using isotype controls with IgG1, kappa of the CCH2 antibody and IgG2a, kappa of the DDG9 antibody. (**c.**  $\times 40$  and **d.**  $\times 400$ )

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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