


BRIEF REPORT

# Immune checkpoint inhibitor-related gastritis in a patient with metastatic melanoma

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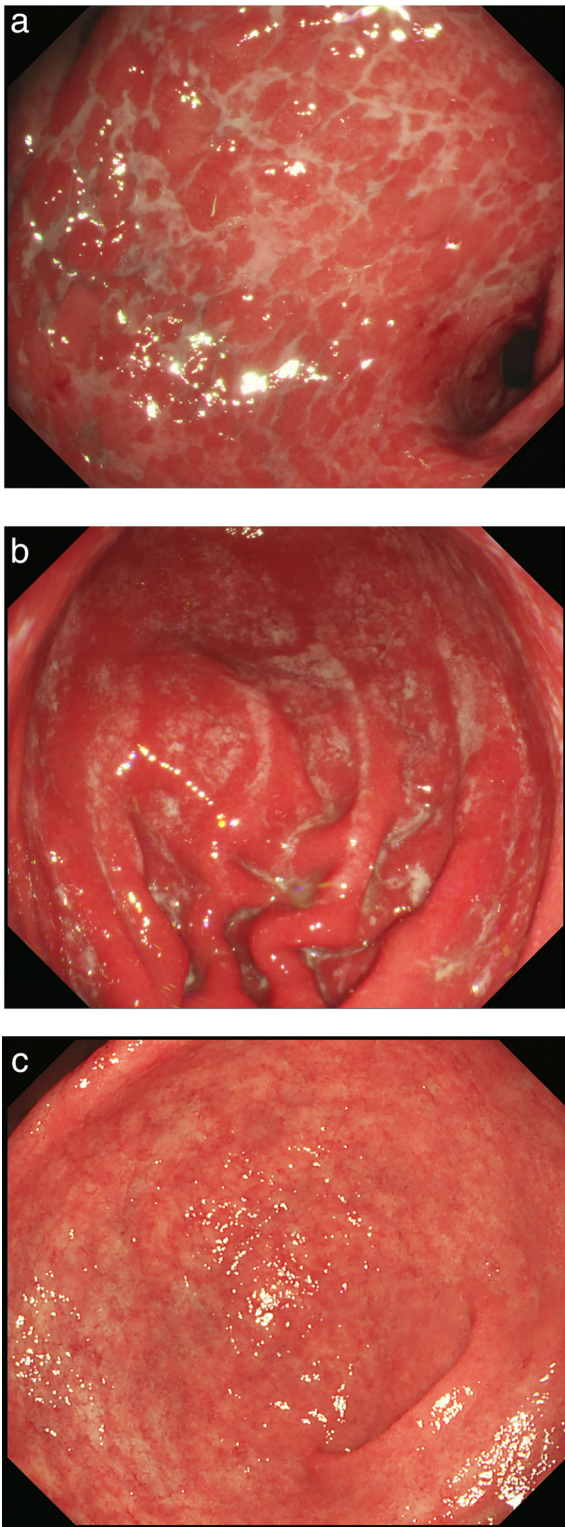
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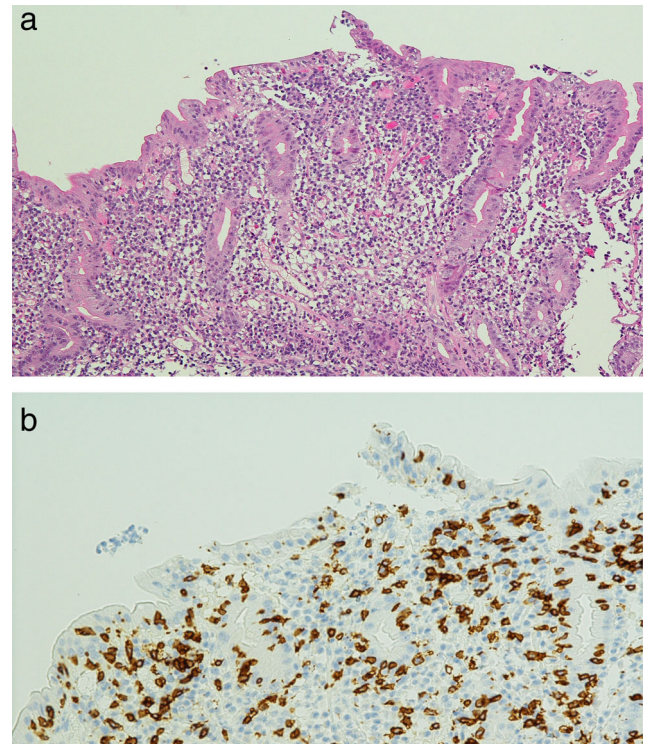
An 83-year-old man presented to our hospital with severe nausea, vomiting, and anorexia lasting more than 2 weeks. He had a medical history of left sole resection for melanoma 7 years earlier. He had lymph node recurrence in the left thigh and had initially been treated with pembrolizumab the previous year. After eight cycles of this immunotherapy, lung metastasis was observed by computed tomography (CT). He was then administered second-line combo-therapy with ipilimumab and nivolumab and complained of appetite loss 2 weeks after the administration. On his admission, no notable changes were observed on laboratory examinations or CT. Esophagogastroduodenoscopy (EGD) revealed erythematous and edematous mucosa with purulent discharge in the gastric body and shallow, network-like erosion in the antrum (Fig. 1a,b). The gastric mucosa was extremely fragile. A biopsy specimen showed epithelial damage at the surface and severe inflammatory cell infiltration in the lamina propria (Fig. 2a). *Helicobacter pylori* infection was not found by a histological analysis or serological examination. This patient was diagnosed with immune checkpoint inhibitor (ICI)-related gastritis based on the endoscopic and the histological examination findings. Immunohistochemically, the infiltrating lymphocytes were positive for CD8 (Fig. 2b). He was administered 40 mg of prednisolone (PSL), and his symptoms remarkably improved starting a few days after administration. EGD at 2 weeks after the initiation of PSL revealed improvement in his gastritis, and the erosion and fragility of

the mucosa were also healed (Fig. 1c). The histopathological findings showed a decrease in inflammatory cell infiltration and recovery of the foveolar epithelium and the proper glands.

ICIs have dramatically changed cancer treatment. However, while the efficacy of ICIs has been proven for various solid cancers, many immune-related adverse events (irAEs) caused by ICI have been reported. irAEs can be developed in many organs, including the gastrointestinal tract, endocrine organs, joints and skin, and nervous system.<sup>1</sup> Colitis is frequently noted, but gastritis is rarely reported.<sup>2</sup> The clinical symptoms suspecting ICI-related gastritis include nausea, vomiting, abdominal pain (epigastric pain), loss of appetite, and weight loss. EGD should be performed when ICI-related gastritis is suspected. Endoscopically, erythematous and edematous mucosa is mainly observed, and mucosal fragility and white fibrin-like membranes (spiderweb-like appearance) are characteristically found. Histologically, a combination of diffuse, moderate-to-severe active chronic gastritis with intra-epithelial lymphocytosis and increased apoptotic activity is the most helpful feature for diagnosing ICI-related gastritis.<sup>3</sup> The histological finding of exfoliated epithelial cells corresponds to the mucosal fragility and shallow erosion observed by EGD. As it is sometimes difficult to determine the causes of these gastrointestinal symptoms, an endoscopic examination may be useful for clarifying the etiology.



**Figure 1** Endoscopic findings of immune checkpoint inhibitor-related gastritis. (a) Erythematous and edematous gastric mucosa were shown in the gastric body. (b) Shallow network-like erosion in the antrum resembles spider webs. (c) Endoscopic findings after the treatment. The gastric erosion and fragility of the mucosa are improved 2 weeks after the administration of prednisolone.



**Figure 2** The histological findings of gastritis. (a) A biopsy specimen shows epithelial atypia at the surface and severe inflammatory cell infiltration in the lamina propria (HE, 100 $\times$ ). (b) Immunohistochemical staining of the biopsy specimen. The infiltrating lymphocytes were positive for CD8 (200 $\times$ ).

## References

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