

Immune-checkpoint inhibitor-induced colitis in a patient with lung cancer

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A 62-year-old man was hospitalized in the emergency room because of severe and persistent abdominal pain with bloody diarrhea (14 stools per day over baseline). He had peritoneal signs, with severe periumbilical tenderness and active bowel sounds. Computed tomography of the abdomen revealed thickened wall of the colon. Laboratory evaluation revealed a hemoglobin level of 11.5 g per deciliter (normal range, 13.5 to 17.5). For the previous 4 weeks, the patient had been taking the immune-checkpoint inhibitor toripalimab (targeting programmed death 1, 240 mg once daily) for small-cell lung cancer. Stool tests for *Clostridioides difficile* infection and other gastrointestinal pathogens yielded negative results. A colonoscopy revealed numerous erosions/ulcers with marked erythema, absent vascular pattern, and friability (Figure A). Biopsy specimens from the colon confirmed severe inflammatory changes, well differentiated glands, crypt abscess, diffuse inflammatory cell infiltration and plasma cell aggregation (Figure B, H&E, original magnification, ×100). Then, the patient received the diagnosis of immune-checkpoint inhibitor-induced colitis based on these findings. After discontinuation of the offending agent with the diagnosis of immune-checkpoint inhibitor-induced colitis, treatment with methylprednisolone (120 mg once daily) was initiated. The patient's symptoms gradually disappeared within 3

weeks and he was discharged from the hospital. 3 months later, a follow-up colonoscopy confirmed that the colonic mucosa had completely healed. Immune checkpoint inhibitors have changed the treatment landscape for oncology, replacing the prior standard of care for most malignancies, producing durable remissions but also causing extensive inflammatory toxicities, collectively referred to as immune-related adverse events[1, 2]. Colitis, typically presenting as diarrhea, is the single most common gastrointestinal toxicity from immune checkpoint inhibitors, which affects approximately 30% of patients[3, 4]. The clinical characteristics of colitis associated with immune-checkpoint inhibitor have not been documented in detail[5]. Severe colitis may result in severe dehydration and perforation indicating possible surgical intervention[6]. Histopathological features and endoscopic lesions of immune checkpoint inhibitor-induced colitis are vividly similar to an inflammatory bowel disease flare[7, 8]. Timely diagnosis and management of immune-checkpoint inhibitor-induced colitis depends on valuable endoscopic and histologic information provided by early colonoscopy[9]. Corticosteroid regimen is the first choice for patients with immune checkpoint inhibitor-induced diarrhea and colitis. Meanwhile, infliximab may be an alternative in cases of corticosteroid failure[10].



Figure A

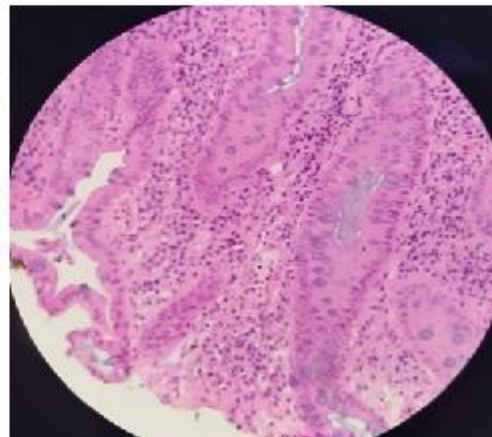


Figure B

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Written informed consent was obtained from the patient for publication of this "Gastrointestinal Image".

Author's contributions

Collection of data: Zhi Yang.

Manuscript preparation and writing: Li-Hua Tang.

Final approval of the manuscript: Wei Liu.

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