Severe Hemorrhagic Gastritis in a Patient Receiving PD-1 Inhibitor Treated With High Dose Proton Pump Inhibitor

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INTRODUCTION

The programmed death 1 (PD-1) immune checkpoint is a negative regulator of T-cell function[1]. Pembrolizumab is a monoclonal antibody which inhibits PD-1 receptor and is commonly used to treat many types of malignancies[2].

While this therapy allows for an enhanced immune response against tumor cells, it can also cause immune-mediated adverse events with the gastrointestinal (GI) tract being the most commonly affected[3]. Systemic corticosteroids are frequently used in patients who develop these side effects[4].

We present a rare case of a patient with clear cell renal cell carcinoma (ccRCC) presenting with hemorrhagic gastritis while on Pembrolizumab, successfully treated with high dose proton pump inhibitor (PPI).

CASE DESCRIPTION

A 61-year-old man with metastatic ccRCC treated with Pembrolizumab, presented to the hospital with intractable vomiting and significant weight loss secondary to poor oral intake.

Upper endoscopy showed diffusely friable gastric mucosa with oozing of blood (Image 1).

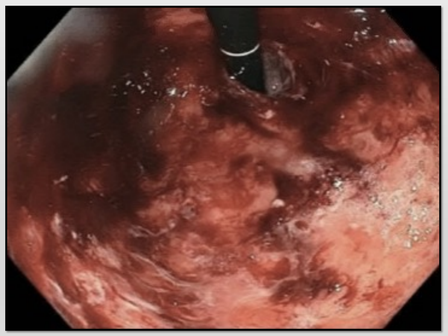

Image 1. Initial endoscopy showing hemorrhagic gastritis

CASE CONTINUED

Biopsy revealed mucosa with regenerative changes and active non-specific inflammation with ulcerated granular tissue, negative for CMV, H. Pylori, atypical infiltrating cells, or malignancy (Image 2).

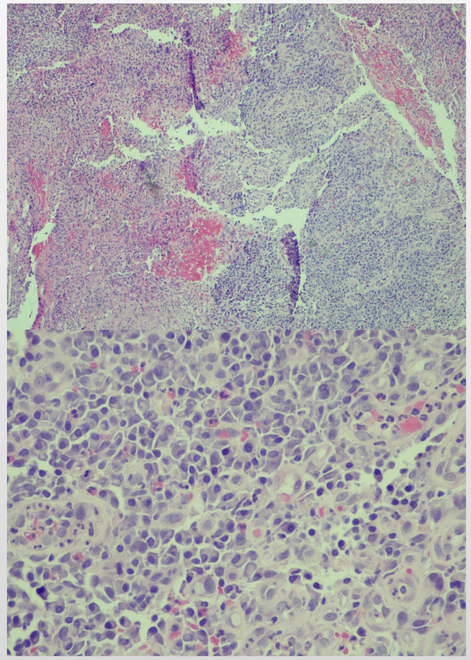

Image 2. H&E stain at 10x and 40x showing inflammatory infiltrate

These findings were compatible with Pembrolizumab induced autoimmune gastritis. He was started on pantoprazole 40mg BID with significant clinical improvement; thus, steroid therapy was not initiated. Repeat endoscopy a month later showed resolution of prior endoscopic findings (Image 3). Pembrolizumab was restarted two months later while on PPI therapy without recurrence of symptoms.

CASE CONTINUED

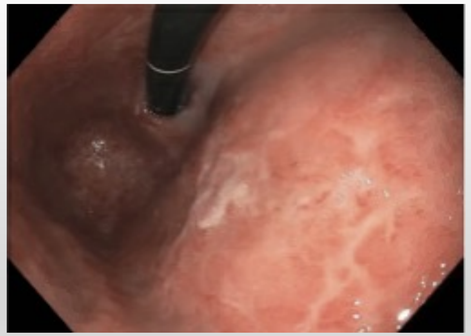

Image 3. Second endoscopy showing healing mucosa.

DISCUSSION

Gastrointestinal side effects from immunotherapy are common. However, isolated PD-1 blockage-associated gastritis is rare[5] and hemorrhagic gastritis is even more with only a few cases reported in literature[2,5].

The management of this condition is not well established although systemic steroids are usually used to suppress the immune response. In our case, high dose PPI therapy alone led to resolution of symptoms and mucosal healing. No clinical or histological signs of hemorrhagic gastritis were noted after resuming Pembrolizumab.

Whether PPI therapy has a role in preventing or minimizing this immune-induced gastritis is still unknown and more studies are needed to establish this therapy as standard.

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