

# A Rare Case of Nivolumab Induced Apoptotic Enteropathy

Brian Sowka DO, Padmavathi Mali MD, Department of Gastroenterology; La Crosse, WI

**GUNDERSEN**  
MEDICAL FOUNDATION

## INTRODUCTION

- Nivolumab and Pembrolizumab are Programmed cell death protein 1 (PD-1) blocking agents.
- This is a unique and first case of Nivolumab-induced apoptotic enteropathy diagnosed by small bowel enteroscopy.

## CASE DESCRIPTION

- A 70-year-old male patient with stage IV Hodgkin lymphoma on treatment with Nivolumab in combination with AVD (Adriamycin, Vinblastine, and Dacarbazine) chemotherapy presented with abdominal pain, diarrhea, and hypotension. He received two cycles of chemotherapy, the last one was 2 weeks before admission.
- In the hospital, he was started on broad-spectrum antibiotics and vasopressors for sepsis and hypotension. Stool work-up for diarrhea was negative for infectious etiologies. CT abdomen showed diffuse small bowel wall thickening and mucosal hyperenhancement consistent with diffuse enteritis.
- Colonoscopy showed congested, inflamed, and ulcerated mucosa in the terminal ileum, and entire colon biopsies showed ischemic ileitis and colitis.
- Upper endoscopy showed erythema, mild erosions, and inflammation in the duodenum, pathology showed nonspecific duodenitis.
- Fecal calprotectin was elevated at 1,340 (normal < 49) and with a suspicion of ICI (Immune Check Point) inhibitor enteritis, he was started on intravenous steroids.



Figure 1 – Colonoscopy with ulcerated mucosa in sigmoid colon

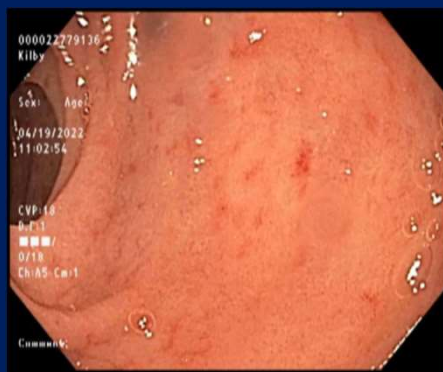


Figure 2 – EGD image of 2<sup>nd</sup> portion of duodenum with mucosal inflammation

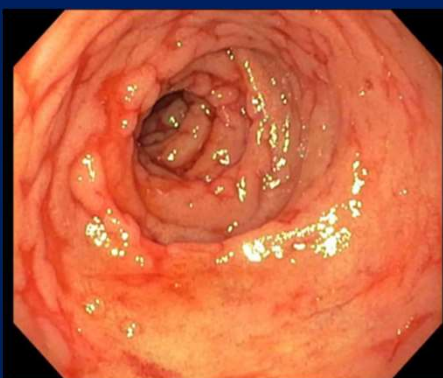


Figure 3 – Push Enteroscopy with diffuse inflammation in proximal jejunum

## CASE DESCRIPTION

- With continued symptoms, a small bowel enteroscopy was performed which showed hemorrhagic mucosa with diffuse oozing, and linear erosions in the duodenum and jejunum. The jejunal biopsies showed cryptitis, crypt dilatation and distortion and rare apoptotic bodies suggestive of apoptotic enteropathy.
- The patient's course was complicated by pseudomonal pneumonia, hypoxic respiratory failure requiring intubation, and ventilator support. He was transitioned to hospice and later died.

## DISCUSSION

- ICI inhibitors like PD-1 blocking agents are novel immune therapeutics used for the treatment of advanced-stage malignancies. Apoptotic enteropathy can occur following treatment with antimetabolites and TNF inhibitors and rarely on Pembrolizumab.
- This is a unique case as the initial endoscopy showed non-specific changes in the duodenum and diagnosis was confirmed on small bowel enteroscopy.
- This case highlights the importance of suspecting and identifying Nivolumab induced enteropathy by an enteroscopy and deeper biopsies.

## REFERENCES

1. Facchinetti F, Gnetti L, Caruana P, et al. Widespread Nivolumab-induced Enteropathy in a Long Responder Non-Small-cell Lung Cancer Patient. *Clin Lung Cancer*. 2018;19(5):e591-e596. doi:10.1016/j.clcc.2018.04.013.
2. Duval L, Habes S, Chatellier T, et al. Nivolumab-induced celiac-like enteropathy in patient with metastatic renal cell carcinoma: Case report and review of the literature. *Clin Case Rep*. 2019;7(9):1689-1693. Published 2019 Jul 28. doi:10.1002/ccr3.2342