

Chronic Norovirus Infection in a Double Solid Organ Transplant Patient

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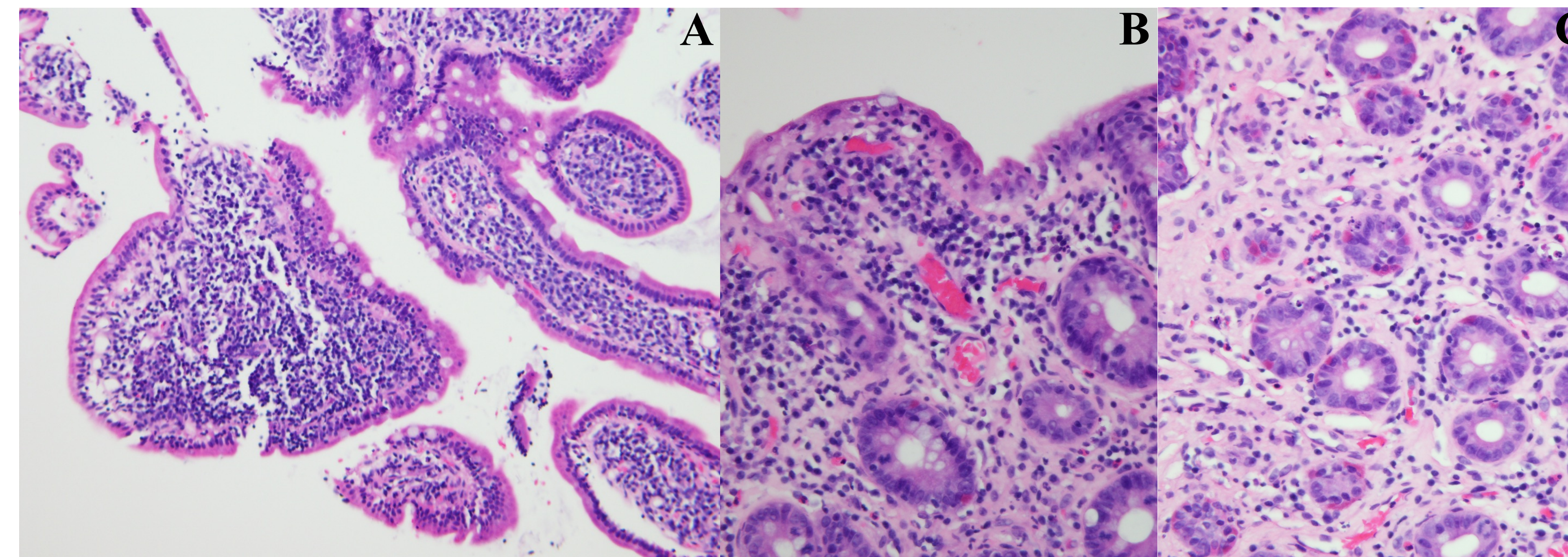
Introduction

- Infectious diarrhea is a common complication in the postoperative course of a solid organ transplant (SOT) recipient.
- Transplant patients on long-term immunosuppression can have severe, prolonged disease with significant morbidity.
- We present a case of chronic diarrhea due to recurrent norovirus infection in a double SOT patient to encourage early recognition.

Case Presentation

- A 61-year-old male presented with 35-pound weight loss despite a good appetite and large-volume watery diarrhea intermittently for 2 years.
- Past medical history: liver-kidney transplant 14 years prior secondary to cryptogenic cirrhosis and diabetes, renal cell carcinoma s/p L nephrectomy
- Immunosuppression: prednisone, tacrolimus, and mycophenolate mofetil (MMF).
- Hospitalized for diarrhea with positive norovirus on stool PCR: 4/2017, 11/2021, 4/2022, 5/2022, 6/2022
- His MMF dose was reduced with no benefit.
- Bi-directional endoscopy with biopsies revealed colonic mucosa with rare epithelial apoptosis, chronic duodenitis, and increased intraepithelial lymphocytosis in the duodenum and ileum consistent with chronic norovirus (see Figure).
- The full diagnostic workup is detailed in Table 1.
- He was managed conservatively during each hospitalization with fluids and antimotility agents and recently discharged home with plans to start nitazoxanide outpatient.

Figure



Duodenal biopsy (A): Focal intraepithelial lymphocytosis and lamina propria plasma cell infiltrates.

Terminal ileum biopsies (B,C): Focal intraepithelial lymphocytosis and lamina propria plasma cell infiltrates (B); popcorn-like epithelial apoptosis (C).

Table

| Diagnostic Workup | |
|------------------------------|---|
| Test/Procedure | Result |
| Creatinine | 2.1 mg/dl (baseline 1 mg/dl) |
| Stool PCR | -Positive for norovirus. -Negative for Clostridium difficile toxins, Salmonella, Shigella, Yersinia, Campylobacter |
| Osmolality, Feces | 420 mOsm/kg |
| Fat, Fecal | Abnormal |
| Duodenal biopsy | Mucosa with intraepithelial lymphocytosis, dense plasma cell infiltrates in lamina propria and rare apoptotic bodies. Negative for CMV, EBV, HSV. |
| Stomach biopsy | -Gastric antral and oxyntic gland mucosa with chronic inactive gastritis. -Negative for H. pylori |
| Right colon biopsy | Rare epithelial apoptosis |
| Left colon biopsy | Rare epithelial apoptosis |
| Terminal ileum biopsy | Mucosa with intraepithelial lymphocytosis, dense plasma cell infiltrates in lamina propria, and rare apoptotic bodies |

Conclusion

- Norovirus infection among SOT patients can lead to severe and symptomatic chronic infection.
- It is unclear why some immunocompromised patients recover spontaneously while others demonstrate a protracted course but supportive care is the mainstay of therapy.
- Limited case series have shown nitazoxanide can be effective in patients that are refractory to supportive therapy.
- This case highlights the importance of considering chronic norovirus when a SOT patient presents with chronic diarrhea and weight loss. Early initiation of supportive care and nutrition consultation are imperative in reducing morbidity in these patients.