

CASE STUDY IN GASTROENTEROLOGY & HEPATOLOGY

Gastrointestinal Manifestations of Disseminated Varicella

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A 61-year-old Asian woman who had undergone a cadaveric renal transplant and had been treated with 5 cycles of chemotherapy for diffuse gastric B-cell lymphoma presented with epigastric abdominal pain, low-grade fevers, nausea, and vomiting. Laboratory data were notable for severe pancytopenia (white blood cells, 1790/ μ L; hemoglobin, 5.2 g/dL; platelets, 62,000/ μ L). An upper endoscopy showed esophageal ulcers, 3 large cratered ulcers in the lesser curvature of the stomach (Figure 1), and multiple scattered erosions with fibrinous exudates and intramucosal hemorrhages scattered throughout the stomach (Figure 2). A small duodenal erosion was also visualized (Figure 3). By hospital day 5, the patient developed worsening hyponatremia (sodium, 126 mmol/L), abnormal liver enzymes (aspartate aminotransferase, 68 U/L; alanine aminotransferase, 48 U/L), and mild pancreatitis (lipase, 115 U/L).

Vesicular and macular skin lesions then erupted throughout the patient's scalp, torso, and lower extremities. Disseminated varicella was suspected, and the patient was treated with intravenous (IV) acyclovir. The diagnosis was confirmed with positive results of immunostaining for varicella zoster virus (VZV) antibodies on gastric and duodenal biopsies, VZV direct fluorescence assay of skin biopsies, and VZV polymerase chain reaction (PCR) in her cerebrospinal fluid. She experienced some improvement after acyclovir treatment, but healing of her gastric ulcers was further prevented by invasive *Candida* and cytomegalovirus infections. Embolization of her left gastric artery was eventually performed for recurrent gastrointestinal bleeding and was effective. After several months of nonhealing gastric ulcers and J-tube feedings, she underwent a total gastrectomy. Final pathology was notable for the absence of recurrent neoplasm or infectious pathogens.

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Figure 1. Three large cratered gastric ulcers in the lesser curvature.

Discussion

This case demonstrates the complexity of evaluating abdominal pain in an immunocompromised patient. This patient had disseminated varicella involving the gastrointestinal tract, skin, central nervous system (CNS), liver, and pancreas, but her only initial presenting symptom was abdominal pain. Atypical presentations require a high index of suspicion based on the unusual endoscopic appearance of enteric lesions for early diagnosis.

VZV is acquired by inhalation of respiratory secretions or contact with skin lesions. The virus travels to sensory nerve fibers and remains latent in dorsal root ganglia until reactivation.¹ Reactivation is often associated with a decline in VZV-specific cell-mediated immunity and often observed in elderly or immunocompromised patients, especially bone marrow transplant (BMT) recipients.²⁻⁵ However, more isolated case reports are describing immunocompromised patients without BMT who have reactivating visceral VZV infections.^{6,7}

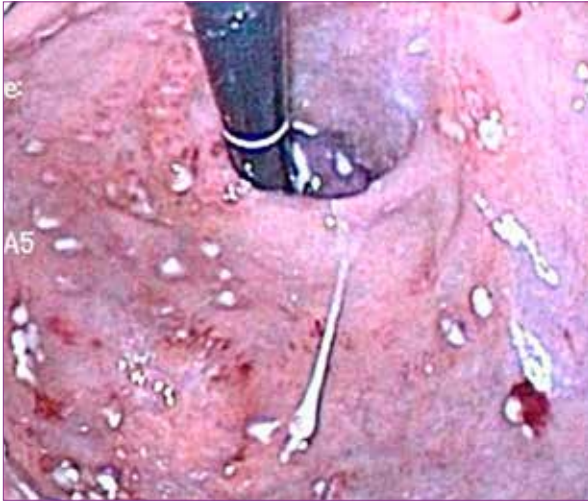


Figure 2. Scattered erosions with fibrinous exudates and intramucosal hemorrhages scattered throughout the stomach.

In BMT patients, localized herpes zoster is the most common presenting symptom in the majority of VZV cases.^{2,8} Visceral dissemination is infrequent, and dermatologic findings often precede visceral involvement. Additionally, visceral involvement is often based only on abnormal biochemical tests and imaging, not on tissue histologic and immunohistochemical confirmation. In a prospective cohort of BMT patients, only 18% (42/231) of those with VZV infection progressed to visceral involvement. However, only 21% (9/42) with visceral dissemination had presented with gastrointestinal symptoms alone prior to skin eruptions.⁸ In a retrospective cohort of BMT patients, only 2 of the 43 patients diagnosed with VZV had visceral dissemination. In both cases, skin findings were present with visceral involvement, and the diagnosis was based only on abnormal chest radiographs or liver function tests.²

However, Gais and Abrahamson observed that 42 of 131 patients with herpes zoster (not specified as BMT or malignancy patients) presented with visceral symptoms prior to skin eruptions.⁹ These patients were often misdiagnosed because of an atypical presentation with chest, lumbar, or abdominal pain. David and colleagues described a case series of 10 BMT patients from a retrospective cohort who had visceral VZV; all 10 patients had abdominal pain as the initial presenting symptom, and only 40% had the characteristic vesicular rash.⁵ Additionally, Yagi and colleagues described 2 patients with acute abdomen as the only sign of varicella infection.¹⁰ The first patient developed acute abdomen, with a laparotomy revealing massive intestinal bleeding and hemorrhagic spots on the liver. On endoscopy, hemorrhagic erosions were visualized on the esophagus, stomach, and jejunum. Symptoms improved only with IV acyclovir. The second patient developed fulminant liver failure and died, with his autopsy revealing hemorrhagic lesions in the esophagus, stomach, and necrotic liver. The



Figure 3. A small duodenal erosion.

VZV diagnosis was recognized only when the liver stained positive for VZV monoclonal antibody.

This stresses the importance of recognizing that varicella is a systemic infection that can involve the gut, pancreas, liver, CNS, skin, and lungs and may present atypically. In an immunocompromised patient, hemorrhagic lesions in the esophagus, stomach, and small intestine may be the earliest signs of disseminated varicella, and prompt recognition can expedite treatment. For confirmation, immunohistochemical staining of biopsy specimens for VZV and serum VZV PCR should be ordered.

The authors have no relevant conflicts of interest to disclose.

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