ACG CASE REPORTS JOURNAL

CASE REPORT | ENDOSCOPY

Gastrointestinal Bleeding and Hemorrhagic Shock in a Patient Diagnosed With Disseminated Histoplasmosis

Oluwaposi Omiwade, MD[1], and Alex Prevallet, DO[2]

[1]*Scripps Mercy Hospital, San Diego, CA*
[2]*Riverside Community Hospital, San Diego, CA*

ABSTRACT

A 63-year-old patient with HIV/AIDS and hepatitis B virus was found to have disseminated histoplasmosis with gastrointestinal bleeding. The patient was initially treated for sepsis, but the infectious workup was negative. Computed tomography of the abdomen and pelvis showed diffuse mesenteric and retroperitoneal lymphadenopathy, with plan for biopsy. Unfortunately, the patient had a Code Blue after having profuse hematochezia. Esophagogastroduodenoscopy disclosed actively bleeding duodenal ulcer; computed tomography angiography showed gastric and jejunal extravasation. The patient expired, and autopsy revealed histoplasmosis of duodenum and jejunum. Esophagogastroduodenoscopy is particularly helpful for timely diagnosis in immunocompromised patients with gastrointestinal bleed from suspected infections or malignancy.

KEYWORDS: GI bleed; endoscopy; hemorrhagic shock; immunosuppression; histoplasmosis

INTRODUCTION

Disseminated histoplasmosis (DH) is a rare extrapulmonary fungal infection that occurs mostly in immunosuppressed patients often through hematogenous spread.[5] Presentations of DH are nonspecific; they include gastrointestinal (GI) and hepatobiliary dysfunction, lymphadenopathy, pancytopenia, adrenal insufficiency, and meningitis.[5] Although DH is relatively rare, GI involvement appears to be common. About 70%–90% of patients with DH have gross and/or microscopic GI involvement in autopsy. Gross GI lesions may appear as segments of inflamed bowel; polyps or masses; ulceration; and GI bleeding.[1,11] We present a case of a patient with HIV/AIDS who was found to have DH in the setting of hemorrhagic shock from a bleeding duodenal ulcer.

CASE REPORT

A 63-year-old man with a long-standing history of HIV/AIDS and hepatitis B virus presented to the emergency department with 6 weeks of constitutional symptoms, abdominal pain, diarrhea, 50-pound weight loss, and near syncope. He had initially been on emtricitabine-tenofovir and abacavir-dolutegravir-lamivudine, but stopped due to side effects, and was unfortunately lost to follow-up for 4 years. A month before his presentation, the patient was started on bictegravir-emtricitabine-tenofovir-alafenamide at a HIV clinic. The patient's CD4 count was 21 cells/mm^3 during this admission, which was significantly lower than his prior CD4 count of 120–460 cells/mm^3 4 years ago.

On presentation, the patient was tachycardic and hypotensive. Notable laboratory results included lactate 4.1, platelets 49, hemoglobin 9.8, white blood cell count 4.4, international normalized ratio 1.6, D-dimer 5,182, and fibrinogen 213. Aspartate aminotransferase and alanine aminotransferase were 211 and 106, respectively. The patient was admitted for sepsis and started on broad-spectrum antibiotics. Infectious workup, including *Clostridioides difficile* toxin/antigen, enteric bacterial and viral pathogen panel, stool ova and parasite, cryptosporidium, acid fast bacillus stool smear and culture, and cytomegalovirus (CMV), was initially obtained, all of which were negative. A computed tomography (CT) of the abdomen and pelvis did not show evidence of cirrhosis or portal hypertension but revealed extensive mesenteric and retroperitoneal lymphadenopathy (Figure 1). This raised suspicion for underlying infection vs malignancy, and a lymph node biopsy by interventional radiology (IR) was subsequently scheduled. Unfortunately, a Code Blue was called because the patient collapsed after having profuse bloody bowel movement. The patient was

ACG Case Rep J 2024;11:e01402. doi:10.14309/crj.0000000000001402. Published online: July 10, 2024

Correspondence: Oluwaposi Omiwade, MD (omiwade.oluwaposi@scrippshealth.org).

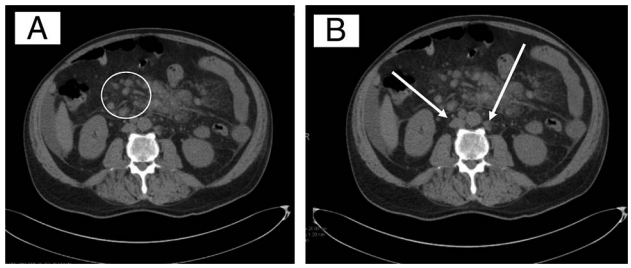

Figure 1. Computed tomography of abdomen and pelvis showing extensive mesenteric (A - circle) and retroperitoneal (B - arrows represent retroperitoneal lymph node) lymphadenopathy.

resuscitated and transferred to the intensive care unit. CT angiography of the abdomen and pelvis showed active extravasation of contrast in the stomach and jejunum (Figure 2). IR was contacted and determined the patient may benefit from esophagogastroduodenoscopy (EGD) first as it appeared the gastric extravasation was larger and more accessible than the jejunal bleed. EGD disclosed an ulcerated mass with active bleeding in the second portion of the duodenum, which was treated with endoscopic clips and hemospray (Figure 3, hospital day 3). Pathology from the EGD showed extensive fungal organisms. Histoplasma urine antigen, coccidioides immunoglobulin M/immunoglobulin G, and serum cryptococcal antigen were then obtained. Histoplasma urine antigen was positive, and the patient was started on voriconazole. The patient also underwent visceral angiography with IR for the jejunal bleeding. Notably, there were no active areas of extravasation among the 7 jejunal branches that had been injected with contrast; therefore, no embolization was performed. Unfortunately, the patient suffered another massive bleed 2 days later from the same duodenal ulcer. The patient underwent another EGD with use of epinephrine injections, hemospray, and endoclips (Figure 3, hospital day 5). However, the patient continued to have ongoing bleeding, requiring a total of 15 units of blood products. The patient ultimately expired from multiorgan failure due to hemorrhagic shock. Autopsy revealed histoplasmosis of multiple organs, including the duodenum, jejunum, liver, spleen, lymph nodes, and adrenal glands.

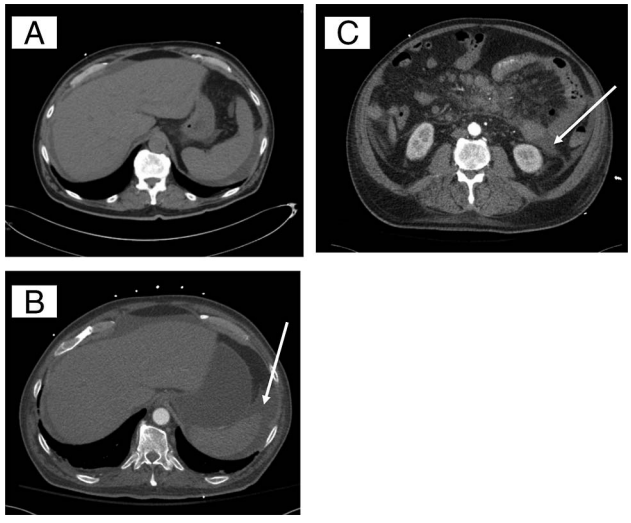

Figure 2. Computed tomography of abdomen and pelvis showing active gastric (A, B) and jejunal (C) extravasation.

DISCUSSION

Through this unique case report, we hope to provide a potential approach to the management of GI bleeding and the role of endoscopy in immunocompromised patients.

The differential diagnosis of GI bleeding in immunocompromised patients may be separated into infectious, malignant, inflammatory, and structural causes. Infectious causes include bacterial/mycobacterial pathogens (*Mycobacterium tuberculosis*, *Bartonella*, *Helicobacter pylori*, *Shigella* species), viral pathogens (CMV, Epstein-Barr virus, herpes simplex virus), fungal (*Histoplasma*, *Cryptococcus*, *Aspergillus*, Mycorrhizae), and parasitic organisms (*Cryptosporidium* species).[1–3] In general, these pathogens often cause ulceration/erosion of the GI mucosa or are angioinvasive in nature, which can cause GI bleeding.[3] Malignant masses such as non-Hodgkin lymphoma (eg, diffuse large B cell lymphoma), acute leukemia, and sarcomas (eg, Kaposi) can be found in HIV/AIDS or other transplant patients, and these can cause both upper and lower GI bleeding.[4] The GI tract is a common site for extranodal cancers.[4] Necrotizing enterocolitis, a severe neutrophilic inflammation of the small and/or large bowel, is an inflammatory cause of GI bleeding in patients with cancer undergoing chemotherapy or in transplant patients.[8] In addition, inflammatory conditions that cause GI bleeding in immunocompetent individuals (eg, inflammatory bowel disease, esophagitis, gastritis) can also occur in the immunocompromised patients. Similarly, structural causes of bleeding, such as peptic ulcers, gastric/colonic polyps, or diverticula, should also be considered in the immunocompromised.

A comprehensive infectious workup that involves enteric bacterial panel, acid-fast bacteria stain and culture, CMV/Epstein-Barr virus/herpes simplex virus serologies, and fungal serologies (*Histoplasma* antigen, Cryptococcal antigen, *Aspergillus* polymerase chain reaction) should be provided.[6,7,9] Lactate dehydrogenase levels may be helpful if malignancy is suspected. Empiric antibiotic and antiviral therapy should be started, and antifungal therapy should be considered particularly if laboratory results such as serum β-D-glucan/galactomannan become positive. CT imaging may be helpful in 2 ways: if the patient is hemodynamically stable, an abdominal CT with/without contrast can reveal masses or lymphadenopathy, which can provide lesions for biopsy.[10] In hemodynamically unstable patients, such as our patient, CT angiography will delineate possible bleeding vessels for urgent intervention by endoscopy, embolization, or surgical repair.

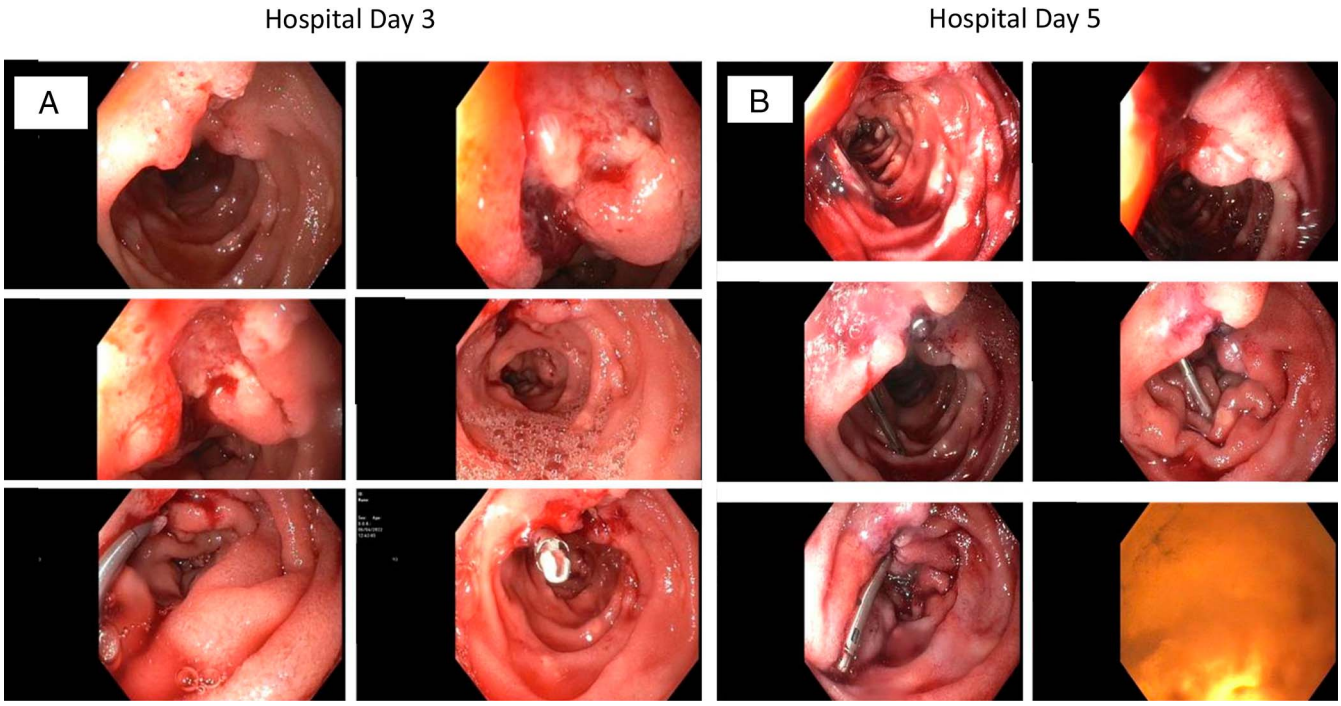

Figure 3. Esophagogastroduodenoscopy from hospital day 3 (A) and hospital day 5 (B), both showing the actively bleeding duodenal ulcer refractory to endoscopic clips and hemospray.

Endoscopy with biopsy of affected sites or lesions is the most direct method of diagnosis and should be conducted as soon as possible once a patient is deemed hemodynamically stable enough for the procedure. Endoscopy can also be effective as a therapeutic intervention for bleeding in these patients. However, once pathology or serologic testing reveals the underlying disease (eg, histoplasmosis), immediate treatment (eg, amphotericin B or azoles) should be started, to ensure effective control of the disease, and possibly decrease the likelihood of recurrent GI bleed.

DISCLOSURES

Author contributions: O. Omiwade searched the patient's chart, obtained figures, wrote the case report, and is the article guarantor. A. Prevallet provided the medical record number for the patient and edited the initial draft of the case report.

Financial disclosure: None to report.

Previous presentation: This case was presented at the ACG Annual Scientific Meeting; October 20-25, 2023; Vancouver, Canada.

Informed consent was obtained for this case report.

Received January 11, 2024; Accepted May 23, 2024

REFERENCES

1. Ardalan M, Etemadi J, Somi MH, et al. Upper gastrointestinal bleeding during the first month after renal transplantation in the mycophenolate mofetil era. *Transplant Proc*. 2009;41(7):2845–7.
2. Assi M, McKinsey D, Driks MR, et al. Gastrointestinal histoplasmosis in the acquired immunodeficiency syndrome: Report of 18 cases and literature review. *Diagn Microbiol Infect Dis*. 2006;55(3):195–201.
3. Chalasani N, Wilcox C. Gastrointestinal hemorrhage in patients with AIDS. *AIDS Patients Care STDS*. 1999;13(6):343–6.
4. Dioverti M, Cawcutt K, Abidi M, et al. Gastrointestinal mucormycosis in immunocompromised hosts. *Mycoses*. 2015;58(12):714–8.
5. Goodwin R Jr, Shapiro J, Thurman GH, et al. Disseminated histoplasmosis: Clinical and pathologic correlations. *Medicine (Baltimore)*. 1980;59(1):1–33.
6. Haider S, Mach T, Mrukowicz J. Gastrointestinal infections in immunocompromised patients. In: *McMaster Textbook of Internal Medicine*. Medycyna Praktyczna: Kraków, Poland, 2016.
7. Liu Y, Patel A, Shaw JC, et al. Gastroduodenal Cryptococcus in an AIDS patient presenting with melena. *Gastroenterol Res*. 2013;6(1):26–8.
8. Nesher L, Rolston K. Neutropenic enterocolitis, a growing concern in the era of widespread use of aggressive chemotherapy. *Clin Infect Dis*. 2013;56(5):711–7.
9. Romano R, Soape M, Thirumala S, et al. Disseminated histoplasmosis mimicking metastatic disease of the colon and omentum: Report of a case and literature review. *Arab J Gastroenterol*. 2015;16(2):66–8.
10. Yu RS, Zhang WM, Liu YQ. CT diagnosis of 52 patients with lymphoma in abdominal lymph nodes. *World J Gastroenterol*. 2006;12(48):7869–75.
11. Shojaei E, Walsh JC, Sangle N, et al. Gastrointestinal histoplasmosis mimicking Crohn's disease. *Open Forum Infect Dis*. 2021;8(7).