

Upper gastrointestinal bleeding caused by direct invasion of diffuse large B-cell lymphoma into the stomach in a patient with HIV infection

A case report

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Abstract

Rationale: Diffuse large B-cell lymphoma (DLBCL) is the most frequent human immunodeficiency virus (HIV)-related Non-Hodgkin's Lymphoma of the stomach. Although gastrointestinal (GI) bleeding due to primary gastric lymphoma has been previously reported in the literature, there have been no reports of stomach wall involvement of intra-abdominal lymphoma presenting as GI bleeding.

Patient concerns: We present a rare case of direct invasion of DLBCL to the stomach wall that presented as upper GI bleeding in a patient with HIV.

Diagnosis: Upper endoscopy showed a large ulcerofungating mass in the lesser curvature of upper stomach body. The computed tomography scan showed an about 22 × 12 cm sized huge mass that invades into the stomach wall in the abdominal cavity. A diagnosis of DLBCL was established after histological examination.

Intervention: The patient was treated with 6 courses of rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP).

Outcomes: The patient achieved a complete response with 6 courses of R-CHOP treatment. No recurrence was observed during the 4-month follow-up period.

Lessons: Because of the high incidence of lymphoma in patients with HIV, if such patients complain of dyspepsia, epigastric soreness, or melena, malignant tumors, such as lymphomas or stomach cancers, should be suspected. As in this patient, doctors should be aware that intra-abdominal lymphoma can invade into the stomach wall and cause bleeding.

Abbreviations: CT = computed tomography, DLBCL = diffuse large B-cell lymphoma, GI = gastrointestinal, HIV = human immunodeficiency virus, LN = lymph node, NHL = Non-Hodgkin's Lymphoma, PET = positron emission tomography, R-CHOP = rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisone.

Keywords: diffuse large B cell lymphoma, gastrointestinal bleeding, HIV infection

1. Introduction

The proportion of Non-Hodgkin's Lymphoma (NHL) is higher in patients with human immunodeficiency virus (HIV) infection,^[1] and the gastrointestinal (GI) tract is the most common

primary site of extra-nodal lymphomas.^[2,3] The stomach is the most commonly involved organ of NHL in patients with HIV. Among NHL, diffuse large B-cell lymphoma (DLBCL) is the most frequent HIV-related NHL of the stomach.^[4] NHL of the stomach is a rare cause of upper GI bleeding and usually occurs from primary NHL of the stomach or duodenum. Although GI bleeding due to primary gastric lymphoma has been previously reported in the literature,^[5-9] there have been no reports of stomach wall involvement of intra-abdominal lymphoma presenting as GI bleeding. Here, we present a rare case of direct invasion of diffuse large B-cell lymphoma to the stomach wall that presented as upper GI bleeding in a patient with HIV.

2. Case presentation

A 61-year-old woman presented with dyspepsia in 2018, which she had been experiencing for 1 month, and melena for 3 days. Additionally, she had lost 3 kg of her body weight over 1 month. She was diagnosed with HIV in 2016 and prescribed GENVOYA (elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide). Laboratory tests showed hemoglobin of 10.6 g/dL, albumin 3.5 g/dL. An upper endoscopy was performed, which showed a large ulcerofungating mass in the lesser curvature of upper body (Fig. 1). A visible vessel with active bleeding was

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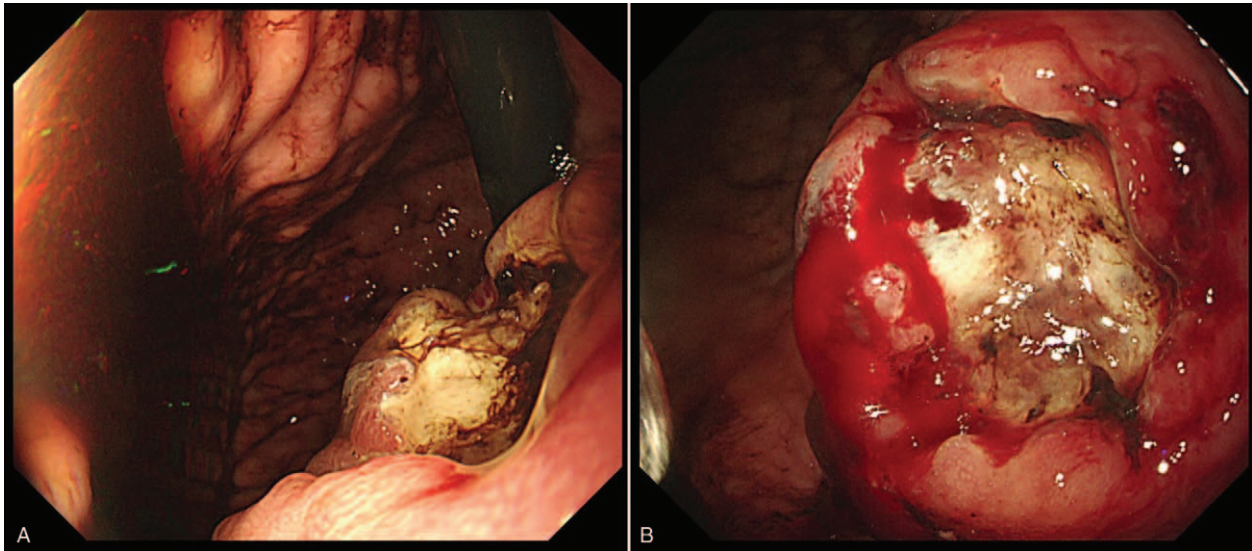


Figure 1. Endoscopic finding (A,B) shows a large ulcerofungating mass in the lesser curvature of upper body.

noted on the ulcer base and a hemostasis was performed using clipping and argon plasma coagulation. After hemostasis, a biopsy was performed at the ulcer margin. The patient underwent an abdominal and pelvic computed tomography (CT) to evaluate the mass lesion in the stomach.

The biopsy results showed a diffuse large B-cell lymphoma (DLBCL) (Fig. 2). The microscopic examination revealed a diffuse infiltrate of large lymphoid cells. On immunohistochemical staining, the neoplastic cells were positive for B-lymphocyte antigen CD20, which confirmed the diffuse large B-cell lymphoma diagnosis. The APCT showed an about 22 × 12 cm sized huge mass along the left gastric artery, lesser omentum, porta hepatis, hepatic hilum, gastrohepatic area, hepaticoduodenal area, and the mesenteric root of the superior mesenteric vein and superior mesenteric artery (Fig. 3). The sagittal view of the APCT showed a huge mass invading the lesser curvature of stomach. The CT of the chest and neck, and a positron emission

tomography (PET) CT were performed for staging work-up. The PET CT demonstrated markedly hypermetabolic mass lesions in abdomen and pelvic cavity (Fig. 4).

She was referred to the hematology department for chemotherapy with rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP). Her dyspepsia and melena improved, and she was discharged. She achieved a complete response with 6 courses of R-CHOP treatment. No recurrence was observed during the 4-month follow-up period.

3. Discussion

HIV infection results in impaired cellular immunity, which leads to development of cancers. The incidence of lymphoma in patients with HIV is much higher than in the general population. The increased risk for lymphoma seems to be related to multiple factors, including the transforming properties of the retrovirus,

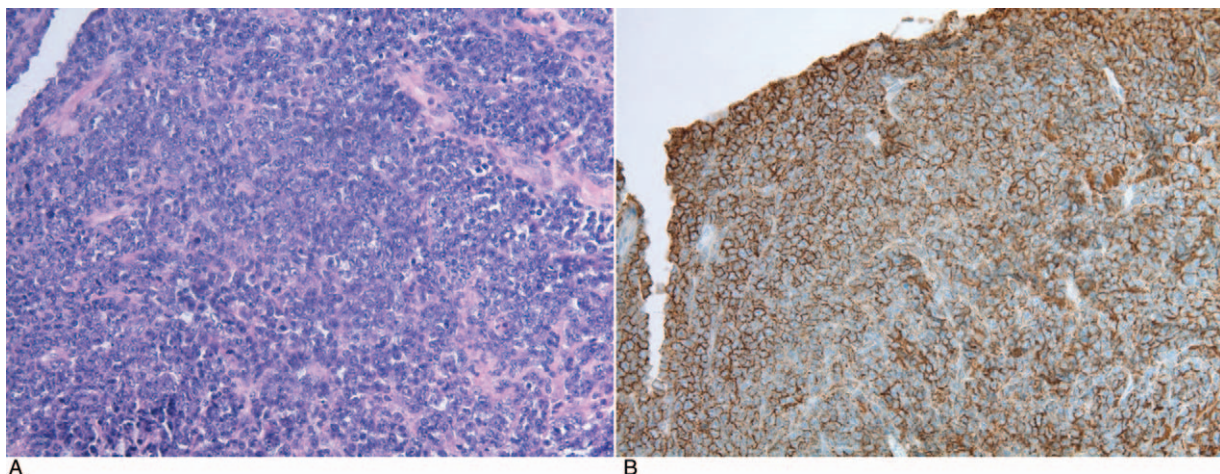


Figure 2. Biopsy results. (A) The stomach biopsy shows a diffuse infiltrate of large lymphoid cells. (Hematoxylin & Eosin stain, ×400). (B) Immunohistochemistry for CD20 is positive in tumor cells.

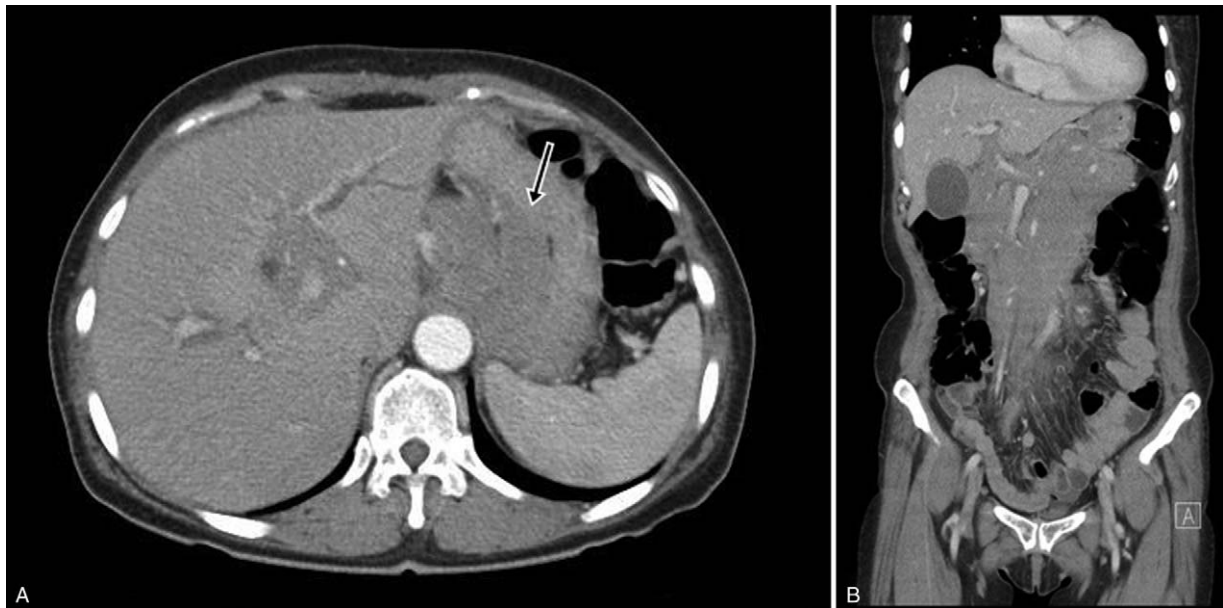


Figure 3. CT of abdomen and pelvis. (A, arrow) Sagittal view shows a huge mass invading to the lesser curvature of stomach. (B) Coronal view shows a 22 × 12 cm sized huge mass along the left gastric artery, lesser omentum, porta hepatis, hepatic hilum, gastrohepatic, hepaticoduodenal area, mesenteric root of SMV and SMA. CT=computed tomography.

the immunosuppression and cytokine dysregulation, and opportunistic infections with other lymphotropic herpes viruses such as Epstein–Barr virus and human herpesvirus 8.^[10]

Patients with HIV infections have a significantly increased risk of developing NHL, and the stomach is involved in most patients with extra nodal involvement.^[11] DLBCL is the most common subtype of HIV-associated lymphomas, accounting for about 50% of all HIV-associated lymphomas.^[4] Although it is not listed as a common cause of massive gastrointestinal

bleeding, DLBCL can cause life-threatening emergencies that require urgent intervention.

NHL can occur at any part of the body. Lymphomas frequently involve nodal and extranodal structures in the abdomen. Nodal disease can be solitary or, more commonly, multiple. Solitary mass types of nodal lymphomas include a single enlarged lymph node (LN) and fusion of multiple enlarged LNs. CT usually shows a large circular mass or a uniformly-enhanced lobular homogeneous density mass.^[11] In our case, it was thought that DLBCL of nodal origin invaded the stomach, gallbladder, spleen, and pancreas and progressed from the intra-peritoneal node. Although it is not rare for large nodal lymphomas in abdominal cavity to extensively invade other organs, no cases of lymphoma that have involved the gastric wall and caused bleeding have been reported.

Extranodal lymphoma in the GI tract occurs in approximately 20% of all patients with NHL.^[2] The stomach is the most frequent site of malignant GI tract lymphomas.^[2,3] In previously reported cases,^[5–9] patients experienced upper gastrointestinal bleeding from primary gastric lymphoma. In this report, we presented a rare case of direct diffuse large B-cell lymphoma invasion to the stomach wall that presented as upper GI bleeding in a patient with HIV.

Upper GI bleeding is a common medical emergency and the main cause is peptic ulcer bleeding. Endoscopic hemostasis is an effective treatment for peptic ulcer bleeding. Various endoscopic treatments including injection therapy, thermal coagulation, and endoclip application are used to control peptic ulcer bleeding. Treatment of lymphoma bleeding is also the same as peptic ulcer bleeding. If a visible vessel with active bleeding is noted on the ulcer base as in this patient, it is effective to use a clip and argon plasma coagulation for hemostasis.

Although the stomach is the most commonly involved site of lymphoma, lymphoma is a rare cause of gastrointestinal bleeding. Clinically, most patients with primary gastric lymphoma may have epigastric pain, dyspepsia, and ulcerating

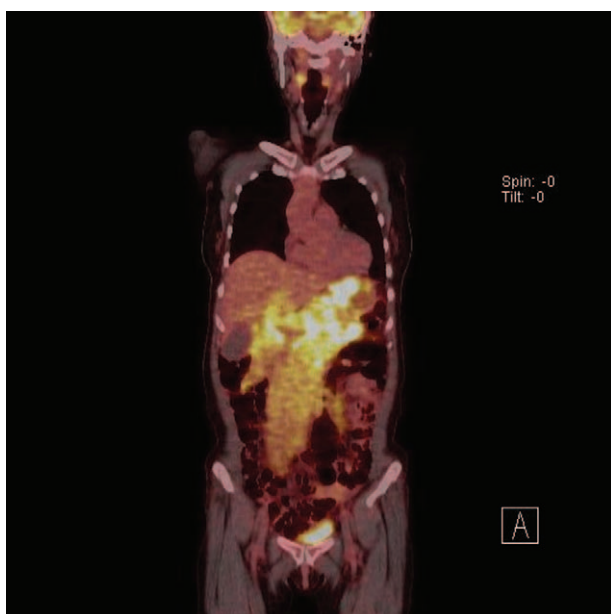


Figure 4. PET CT shows a hypermetabolic mass lesions in abdomen and pelvic cavity. CT=computed tomography, PET=positron emission tomography.

lesions, such cancers are rarely associated with bleeding. In the literature, there are a few case reports of primary gastric lymphoma that presented as GI bleeding.^[5–9] Because of the high incidence of lymphoma in patients with HIV, if such patients complain of dyspepsia, epigastric soreness, or melena, malignant tumors, such as lymphomas or stomach cancers, should be suspected. As in this patient, doctors should be aware that intra-abdominal lymphoma can invade into the stomach wall and cause bleeding.

This is the first patient with direct diffuse large B-cell lymphoma invasion into the stomach wall, and this abdominal cavity cancer presented as upper GI bleeding in a patient with HIV. This case emphasizes the need to consider malignancies from primary gastric lymphoma and lymphomas in the abdominal cavity in HIV-positive patients with dyspepsia symptoms.

Author contributions

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Writing – review & editing: Jin Lee.

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