Extensive Gastric Mucormycosis in a Patient with Newly Diagnosed Diffuse Large B-Cell Lymphoma of the Stomach

Jae Whan Keum, MD[1]; Christopher Andrade, MD[2]; Hilary Hertan, MD, FACG[2]
[1]San Joaquin General Hospital, French Camp, CA, [2]Montefiore Medical Center Wakefield Hospital, Bronx, NY

ABSTRACT

Non-Hodgkin's lymphoma (NHL) affects the gastrointestinal tract in 10 to 15 percent of the cases. Mucormycosis in the gastrointestinal tract is rare and may cause severe infection in immunocompromised patients with hematological malignancy. We present a case of newly diagnosed diffuse large B-cell lymphoma (DLBCL) with malignant masses in the stomach and extensive ulcerations with mucormycosis.

CONTACT

Jae Whan Keum, MD
San Joaquin General Hospital
Internal Medicine
500 W Hospital Rd
French Camp, CA 95231
Email: jkeum@sjgh@org

INTRODUCTION

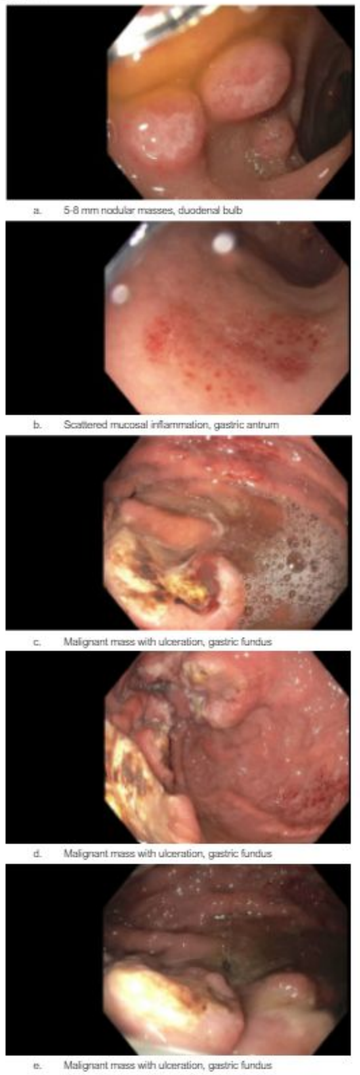
Non-Hodgkin's lymphoma (NHL) affects the gastrointestinal tract in 10 to 15 percent of the cases. Mucormycosis in the gastrointestinal tract is rare and may cause severe infection in immunocompromised patients with hematological malignancy. Our patient presented with malignant masses in the stomach with extensive ulcerations and mucormycosis in the setting of newly diagnosed diffuse large B-cell lymphoma (DLBCL).

METHODS AND MATERIALS

A 62 year-old man with history of hypertension presented with left-sided abdominal pain and weight loss. He denied any other symptoms. Abdominal exam was unremarkable, but there was a nontender left supraclavicular mass. Initial labs revealed mild microcytic anemia with elevated ferritin and C-reactive protein. Computed tomography showed multiple lymph nodes above and below the diaphragm with gastric wall thickening at the fundus. Upper endoscopy revealed multiple duodenal nodules, mucosal inflammation at the antrum and multiple masses with non-bleeding deep ulcers at the fundus (Figure 1). Biopsy revealed CD20 positive large atypical cells with flow cytometry confirming the diagnosis of DLBCL with germinal center type. Fluorescent in situ histochemistry (FISH) was negative for double-hit lymphoma. Biopsy of the ulcers also showed Mucorales and Actinomyces identified by GMS and PAS-D stains. Actinomyces was deemed to be a commensal finding. However, due to high risk of bleeding and perforation associated with angioinvasive mucormycosis in immunosuppressed patients, he was started on posaconazole prior to initiation of chemotherapy with R-CHOP.

RESULTS

Figure 1



a. 5-8 mm nodular masses, duodenal bulb

b. Scattered mucosal inflammation, gastric antrum

c. Malignant mass with ulceration, gastric fundus

d. Malignant mass with ulceration, gastric fundus

e. Malignant mass with ulceration, gastric fundus

DISCUSSION

The stomach is the most common gastrointestinal location of extranodal NHL after the colon followed by the small intestine [1]. Diagnosis is confirmed by tissue biopsy and either immunohistochemistry or flow cytometry. Germinal center B cell lymphoma is associated with a more favorable prognosis, less aggressive. Fluorescent in situ hybridization was used to rule out MYC, BCL2 and BCL6 rearrangements, which are associated with high-grade lymphoma (double or triple-hit lymphoma) [2]. Standard treatment consists of chemotherapy with six cycles of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone) with 60 percent cure rate in patients with DLBCL [3].

Actinomyces are commensal bacteria in the human oropharynx [4]. Severe infection may occur if persistent mucosal damage is present. Actinomycosis causes subacute to chronic infection that produces abundant sulfur granules and draining purulent sinus. Active infection is treated with penicillin G and possibly surgical resection in severe infection, but our patient did not present with features of actinomycosis.

In contrast, we decided to treat for mucorales prophylactically prior to starting chemotherapy. Mucormycosis is caused by ubiquitous mold of the mucorales species found in decaying vegetation and soil. Gastrointestinal mucormycosis is rare, occuring in only 7% of all reported cases of mucormycosis [5]. Stomach is the most commonly affected site in the gastrointestinal system. Immunocompromised hosts are at increased risk of potentially fatal angioinvasive infection, presenting with local tissue ischemia, necrosis and deep ulcerations, which leads to high risk of bleeding and perforation. Empiric treatment involves polyene antifungal agent such as posaconazole, isavuconazole, or amphotericin B. Surgical intervention and resection of the necrotic part of the stomach may be warranted if there is evidence of massive bleeding or impending perforation on examination, as delaying treatment may increase mortality by two-fold [6]. Early diagnosis and prophylactic treatment of mucormycosis is recommended in immunocompromised patients like our patient with newly diagnosed hematological malignancy and plan to initiate chemotherapy [7].

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