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CASE REPORT | ENDOSCOPY

Colonic Histoplasmosis Presenting as Polyps in an Asymptomatic Patient With Liver Transplant

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ABSTRACT

Infection of the gastrointestinal tract by *Histoplasma capsulatum* is generally considered to be a manifestation of disseminated disease. The most common symptoms from gastrointestinal histoplasmosis include abdominal pain and diarrhea. Isolated asymptomatic gastrointestinal histoplasmosis is unusual, and diagnosis can be challenging. We report a 57-year-old man with a history of liver transplant presented with numerous colonic polyps, and the biopsies demonstrated granulomatous colitis with fungal microorganism consistent with *H. capsulatum*. Antigen/antibody tests for *Histoplasma* were confirmatory. The patient was asymptomatic with no clinical or radiological evidence of pulmonary involvement. He responded well to itraconazole treatment, and urine antigen tested negative 6 months after the initiation of the treatment. Follow-up colonoscopy performed 12 months after treatment with itraconazole showed no evidence of colonic histoplasmosis.

INTRODUCTION

In the United States, *Histoplasma capsulatum* infection mainly occurs in the Ohio and Mississippi valley.[1] Gastrointestinal histoplasmosis is generally considered to be a manifestation of disseminated disease[2] and can present as ulcer, nodule, hemorrhage, or mass.[3] Clinically, the presentation may mimic tumor and/or idiopathic inflammatory bowel disease (IBD).[4,5] Primary gastrointestinal involvement with no apparent pulmonary involvement is uncommon and has been reported in immunosuppressed individuals such as patients with human immunodeficiency virus infection, kidney transplant, and autoimmune diseases.[6–9] Gastrointestinal histoplasmosis commonly presents as granulomatous inflammation, which can mimic idiopathic IBD. Management and treatment with an immunosuppressant such as steroid can lead to fatal outcome.[10] We present here a case of asymptomatic colonic histoplasmosis in a patient with a liver transplant.

CASE REPORT

A 57-year-old asymptomatic man who underwent orthotopic liver transplant for chronic hepatitis C-induced cirrhosis and hepatocellular carcinoma 4 years ago presented for an elective surveillance colonoscopy because of a medical history of adenomatous colon polyps >5 years ago. The patient has immunosuppressed status on tacrolimus 0.5 mg twice daily. Colonoscopy revealed numerous sessile polyps throughout the colon, most of them with partially ulcerated surfaces (Figure 1). Four polyps, ranging in size from 5 to 15 mm, were endoscopically resected, and 3 showed granulomatous inflammation (Figure 2).

The hematoxylin and eosin stain demonstrated numerous intracellular oval-shaped microorganisms (Figure 3). The fourth resected polyp was a tubular adenoma. Grocott methenamine silver stain highlighted narrow-based budding yeasts, consistent with histoplasmosis. *Histoplasma* urine antigen was positive at 0.51 ng/mL. Antibody to *Histoplasma* protein antigen M was detected. The patient underwent a chest radiology workup, and the reading did not suggest pulmonary disease. One month after the colonoscopy, treatment with itraconazole was started. After 1 month of treatment, the urine antigen tested positive with the level below the limit of quantitation (0.4 ng/mL). Six months after the treatment, the urine antigen tested negative. After 12 months of itraconazole treatment, follow-up colonoscopy did not show any evidence of histoplasmosis. Biopsy of the previous granulomatous inflammation

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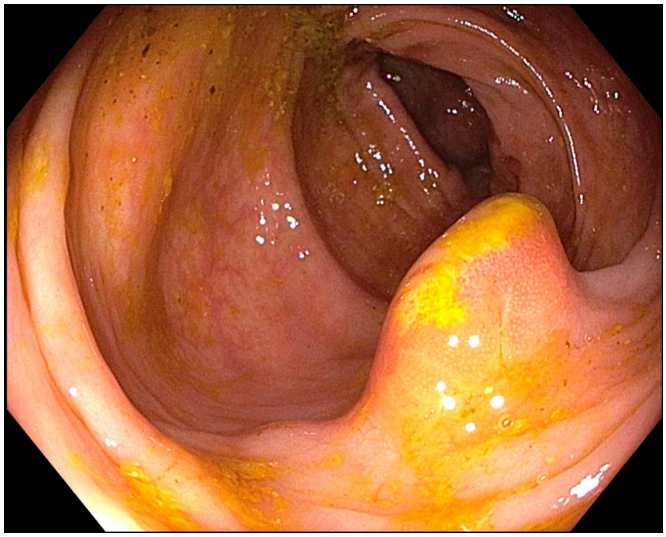

Figure 1. Endoscopic image of an ascending colon polyp.

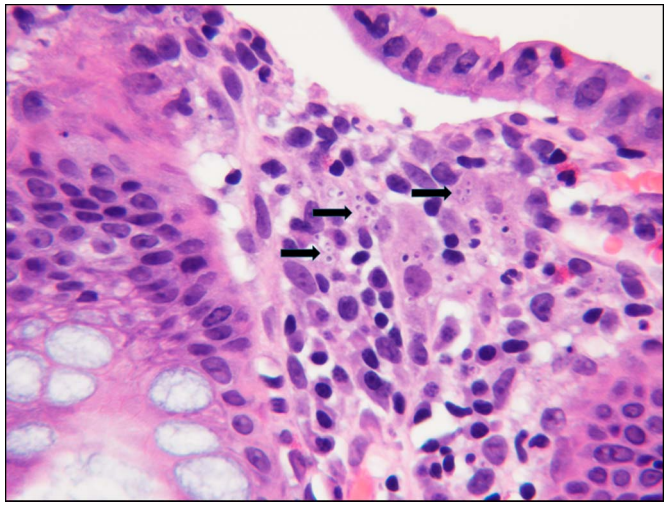

Figure 3. Intracytoplasmic fungal microorganism (black arrows) seen in histiocytes on hematoxylin and eosin stain.

site showed regenerative changes in colonic mucosa, and Grocott methenamine silver stain was negative for fungal microorganisms (Figure 4).

DISCUSSION

The diagnosis of colonic histoplasmosis for this patient was established by histological examination of the colonic polyps and *Histoplasma* antigen and antibody tests. In the literature, histoplasmosis involving the gastrointestinal tract can present with clinical symptoms such as fever, diarrhea, gastrointestinal bleeding, and grossly manifested as mucosal ulcer, nodules, hemorrhage, and obstructing mass.[11] The prognosis is good with early detection and treatment and could be fatal if remains untreated or managed as IBD with immunosuppressant such as steroid.[10,12] The percentage of patients with disseminated histoplasmosis that presented with gastrointestinal symptoms spans a wide range in the literature from 3% to 65%.[3,13,14] The incidence of histoplasmosis in liver transplant patients was reported to be 12 of 4,468 liver transplant patients (0.27%) in a 5-year multicenter prospective study.[15] That study also reported 5 of 48 solid organ transplant who developed *Histoplasma* infection died of disseminated histoplasmosis.[15] Our patient lives in Ohio which is an endemic area of *H. capsulatum*.

To our knowledge, this is the first reported case of colonic histoplasmosis presenting as multiple polyps in an asymptomatic patient during elective surveillance colonoscopy and confirmed with the antigen/antibody test. The only previously reported case of colonic histoplasmosis in the literature from an asymptomatic patient presented with multiple colonic ulcers. The patient was on methotrexate for an idiopathic skin disease

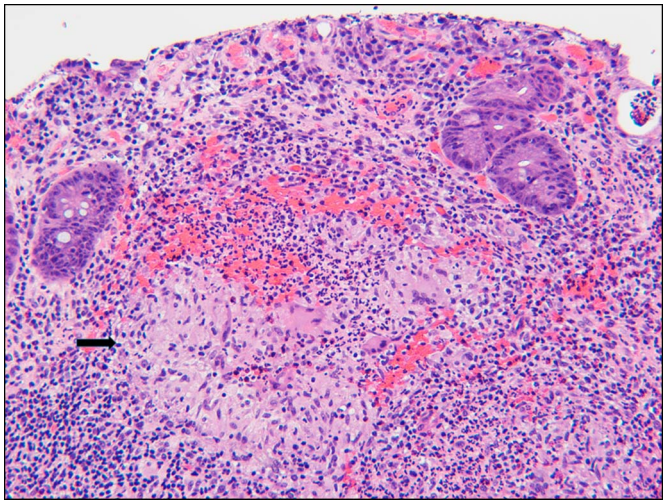

Figure 2. Colonic mucosa with aulcerated surface, lamina propria expanded by inflammatory cells and granuloma (black arrow).

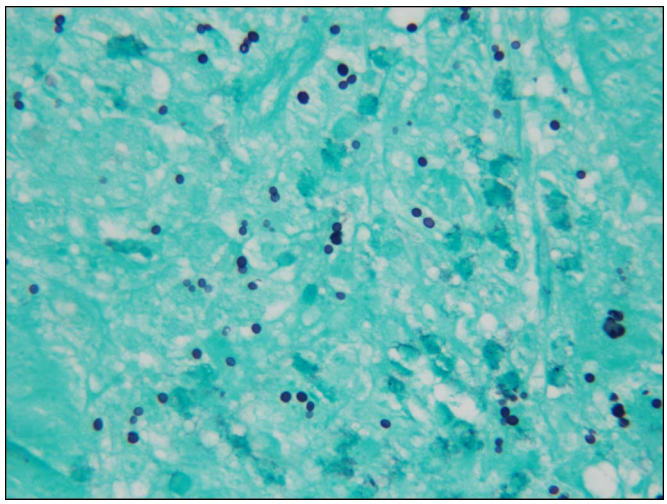

Figure 4. Grocott methenamine silver stain highlighting the fungal microorganism in black.

(presumed to be autoimmune).[16] The patient underwent 6 months of treatment with itraconazole and had follow-up colonoscopy 7 months after the diagnosis; the lesions were noted to have resolved entirely as well. Our case demonstrates the value of obtaining tissue for histological diagnosis to detect a potentially fatal infection condition at an early stage in a transplant patient. The follow-up of this patient demonstrates that itraconazole is an effective treatment for colonic histoplasmosis.

DISCLOSURES

Author contributions: M. Cui wrote the article and is the article guarantor. RCK Wong wrote the article and revised the article for intellectual content. PM Gholam revised the article for intellectual content.

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Informed consent was obtained for this case report.

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