

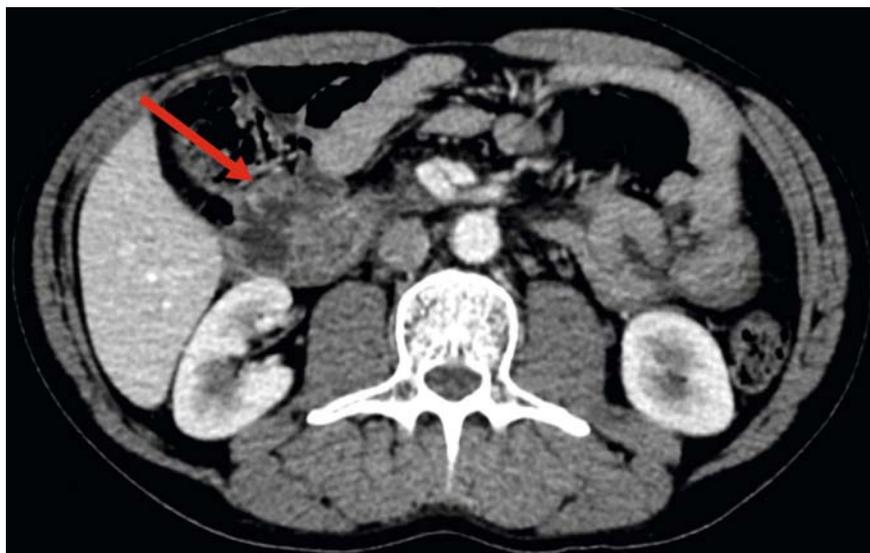
Small-bowel cryptococcosis diagnosed by double-balloon endoscopy in patient without human immunodeficiency virus

A 45-year-old man presented with a 2-year history of diarrhea and anasarca. His work involved opening tunnels and exploding rocks. He had no cardiovascular abnormalities or proteinuria. Celiac disease and human immunodeficiency virus (HIV) serologies were negative. Total protein (2.6 g/dL), albumin (1.5 g/dL), ionized calcium (3.09 mg/dL), vitamin D (6.7 ng/mL), and immunoglobulin (IgM 29 mg/dL, IgG 357 mg/dL, IgA 60 mg/dL) levels were low. Sodium and potassium were normal.

Upper gastrointestinal endoscopy demonstrated erosions and patchy, whitish lesions in the second portion of the duodenum, suggestive of lymphangiectasia. Biopsies showed nonspecific duodenitis. Colonoscopy was normal.

Computed tomography (CT) demonstrated thickness and lymphatic cystic lesions involving the duodenum, jejunum, pancreas, and retroperitoneum (► Fig. 1). Owing to suspicion of protein-losing enteropathy, antegrade double-balloon endoscopy (DBE) was indicated. DBE showed whitish spots and nodularity in the second and third portions of the duodenum, and multiple subepithelial cystic lesions with lymphatic fluid extravasation at biopsy in the fourth portion of the duodenum and up to 150 cm of the jejunum (► Video 1). Histopathology revealed lymphomononuclear infiltrate, granuloma (► Fig. 2), and spores on mucicarmine and Grocott stains (► Fig. 3), compatible with *Cryptococcus neoformans*.

The patient was hospitalized with intense headache, reduced visual acuity, and convulsions. He was diagnosed with systemic *Cryptococcus* infection, affecting central nervous system, gastrointestinal tract, and lymphatic system. Amphotericin B was given for 21 days with significant clinical improvement, followed by fluconazole 800 mg/day for 1 year. CT and laboratory tests returned to normal.



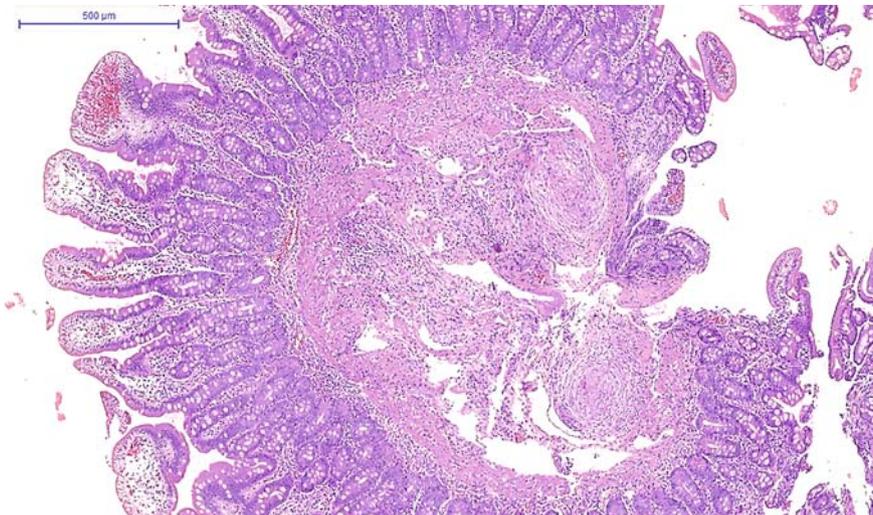
► Fig. 1 Computed tomography demonstrated thickness and lymphatic cystic lesions (arrow) involving the duodenum, proximal jejunum, pancreas, and retroperitoneum.



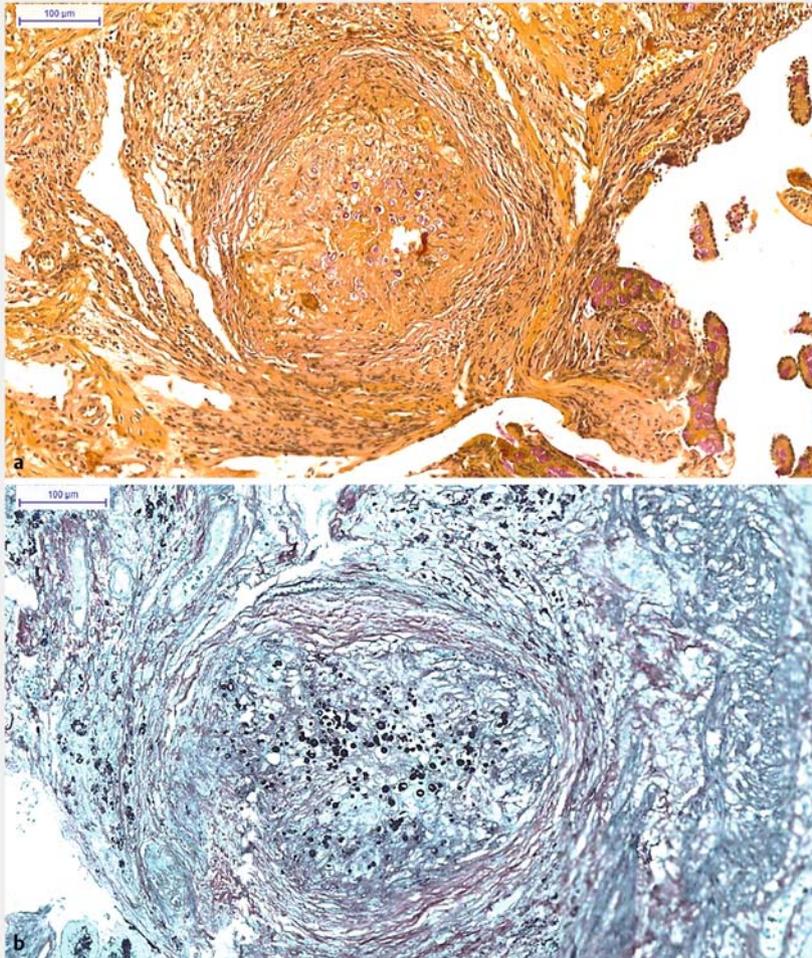
► Video 1 Computed tomography showed lymphatic cystic lesions involving the small bowel, confirmed by double-balloon endoscopy. Subepithelial duodenal and jejunal lesions with lymphatic fluid extravasation were observed, with great improvement after treatment.

DBE showed significant improvement (► Fig. 4), with negative fungal histology. The few reports of disseminated cryptococcosis mostly involve HIV/acquired immunodeficiency syndrome [1, 2]. Gastrointestinal tract symptoms on presenta-

tion are seldom described [3, 4]. In this case of disseminated cryptococcosis in an immunocompetent, non-HIV patient, DBE was valuable in diagnosing and managing the small-bowel involvement [5].



► **Fig. 2** Hematoxylin and eosin staining showed lymphomononuclear infiltrate, with traces of granuloma and round organisms.



► **Fig. 3** Staining was suggestive of *Cryptococcus neoformans*. **a** Mucicarmine staining revealed the presence of the organism's mucopolysaccharide capsule (in pink). **b** Grocott staining highlighted the fungal cell wall (in black).



► **Fig. 4** Double-balloon endoscopy demonstrated reduction of the lymphatic cystic lesions after 1 year of treatment.

Endoscopy_UCTN_Code_CCL_1AC_2AG

Competing interests

The authors declare that they have no conflict of interest.

The authors

Túlio Rigueti Prazeres¹, Marcela Almeida Menezes de Vasconcellos¹, Marcella Salazar Sousa¹, Evelin Sánchez Ortiz², Ulysses Ribeiro Junior³, Sérgio Carlos Nahas³, Adriana Vaz Safatle-Ribeiro¹

- 1 Endoscopy Unit, Coloproctology Surgical Division, Department of Gastroenterology, University of São Paulo Medical School
- 2 Department of Pathology, University of São Paulo Medical School, São Paulo, Brazil
- 3 Coloproctology Surgical Division, Department of Gastroenterology, University of São Paulo Medical School, São Paulo, Brazil

Corresponding author

Adriana Vaz Safatle-Ribeiro, MD, PhD
 Endoscopy Unit, Department of Gastroenterology, University of São Paulo Medical School, Av. Dr. Enéas Carvalho de Aguiar, 255 Cerqueira Cesar, 05403-000 São Paulo, SP, Brazil
 Fax: +55-11-32849885
 adriana.safatle@hc.fm.usp.br

References

- [1] Girardin M, Greloz V, Hadengue A. Cryptococcal gastroduodenitis: a rare location of the disease. *Clin Gastroenterol Hepatol* 2010; 8: e28–e29
- [2] Li J, Wang N, Hong Q et al. Duodenal cryptococcus infection in an AIDS patient: retrospective clinical analysis. *Eur J Gastroenterol Hepatol* 2015; 27: 226–229
- [3] Tzimas D, Wan D. Small bowel perforation in a patient with AIDS. Diagnosis: small bowel infection with *Cryptococcus neoformans*. *Gastroenterology* 2011; 140: 1882–2150
- [4] Liu Y, Patel AA, Shaw JC et al. Gastroduodenal *Cryptococcus* in an AIDS patient presenting with melena. *Gastroenterol Res* 2013; 6: 26–28
- [5] Safatle-Ribeiro AV, Iriya K, Couto DS et al. Secondary lymphangiectasia of the small bowel: utility of double balloon enteroscopy for diagnosis and management. *Dig Dis* 2008; 26: 383–386

Bibliography

Endoscopy 2021; 53: E150–E152
DOI 10.1055/a-1216-1048
ISSN 0013-726X
published online 20.8.2020
 © 2020. Thieme. All rights reserved.
 Georg Thieme Verlag KG, Rüdigerstraße 14,
 70469 Stuttgart, Germany

ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



Endoscopy E-Videos is a free access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online.

This section has its own submission website at
<https://mc.manuscriptcentral.com/e-videos>