Unusual endoscopic findings in an immunosuppressed patient

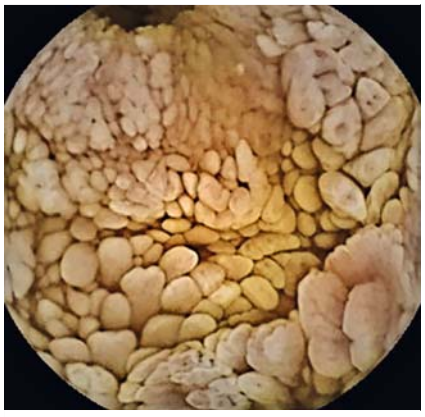
Immunosuppressed patients are susceptible to infections by opportunistic agents such as *Leishmania* that could cause visceral leishmaniasis with gastrointestinal involvement in up to 10% of cases.

We report a 41-year-old man with human immunodeficiency virus (HIV) infection stage C3 with CD4 lymphocytes 81/mm³, 4,070 leukocytes (47.2% lymphocytes, 0.0% eosinophils, rest of differential normal) treated with antiretroviral therapy (dolutegravir/abacavir/lamivudine) with good adherence. He also reported mesangiocapillary glomerulonephritis type-1, hepatocutaneous porphyria, and a 7-year history of recurrent visceral leishmaniasis treated with liposomal amphotericin B as secondary prophylaxis. Esophagogastroduodenoscopy and colonoscopy indicated for chronic diarrhea and anemia performed 5 years ago displayed antral erythema, mild nodular appearance in the duodenal mucosa, and normal colonic mucosa. Gastric, duodenal, and colonic biopsies revealed *Leishmania spp* despite treatment with liposomal amphotericin B.

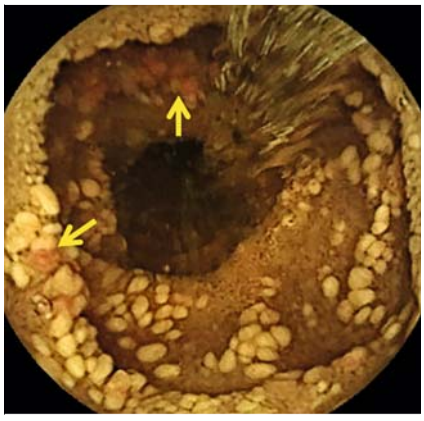
A video capsule endoscopy (VCE) was now indicated for persistent diarrhea. Enteropathy with atrophic and patchy, marked edema of the villus, and whitish nodularity with a "river bedrock" appearance (▶ **Fig. 1 – 3**) in the duodenum and jejunum were identified (▶ **Video 1**). Further gastric and duodenal biopsies showed an accumulation of macrophages in the lamina propria of the mucosa with intracytoplasmatic *Leishmania spp* (▶ **Fig. 4**). Treatment with meglumine antimoniate was initiated owing to previous failure with liposomal amphotericin B, without response.

Some cases of visceral leishmaniasis showing non-specific findings (atrophy, edema, and whitish nodular mucosa) on esophagogastroduodenoscopy have been reported [1,2], with the mucosa appearing normal in up of 45% of cases [3,4]. There is only one case reporting

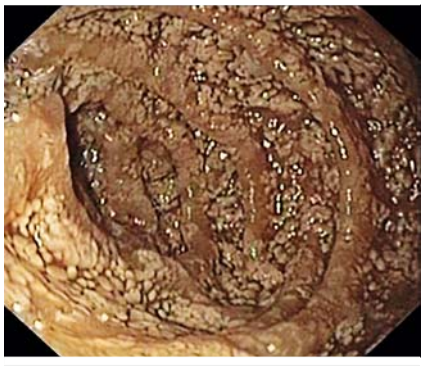
Video 1 Unusual endoscopic findings in an immunosuppressed patient.



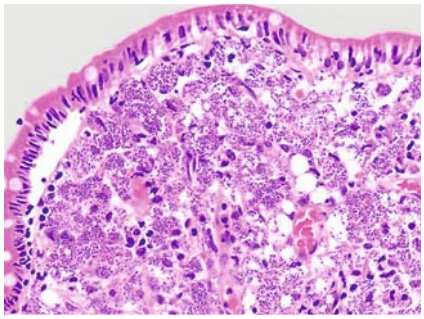
▶ **Fig. 1** Marked edema of villi and whitish nodularity in the proximal duodenum.



▶ **Fig. 2** Isolated erythematous nodules in the jejunum (arrows).



▶ **Fig. 3** Atrophic and patchy duodenal pattern with whitish nodularity observed on esophagogastroduodenoscopy.



▶ **Fig. 4** Accumulation of macrophages in the lamina propria of the mucosa with amastigotes of *Leishmania protozoa* in their cytoplasm; hematoxylin and eosin, ×40.

VCE findings of visceral leishmaniasis in an immunocompromised patient with a diffuse intestinal atrophic pattern [5]. We observed a similar enteropathy, although in a patchy distribution, on VCE and esophagogastroduodenoscopy. Atrophic enteropathy displayed as a "river bedrock" appearance would be a possible sign of an advanced stage of life-threatening visceral leishmaniasis. VCE may provide useful information on diagnoses, extension, and severity of gastrointestinal lesions in patients with severe immunosuppression and gastrointestinal symptoms.

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Competing interests

The authors declare that they have no conflict of interest.

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