

Chronic Hematochezia Caused by Amoebic Colitis with Multiple Flask-Shaped Colonic Ulcers: A Case Report

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ABSTRACT

Chronic hematochezia is a clinical presentation with a broad differential diagnosis. Among infectious causes of hematochezia, amoebic colitis due to *Entamoeba histolytica* requires early consideration, particularly in tropical and endemic regions. However, the diagnosis of amoebic colitis is often challenging due to the limited sensitivity of stool examination, leading to delayed treatment. Therefore, this case report aims to explore the limitations of stool examination and emphasize the important role of colonoscopy and histopathology in establishing the diagnosis of amoebic colitis in patients with persistent symptoms. The diagnostic challenge was shown by the case of a 49-year-old man presenting with hematochezia for more than one month, accompanied by intermittent fever and abdominal bloating. Initial stool examination showed numerous erythrocytes and leukocytes, but no trophozoites or cysts of *E. histolytica* were identified. Due to persistent symptoms, colonoscopy was performed and showed pancolitis with multiple large irregular ulcers covered with friable debris that bled easily throughout the colon. Histopathological examination confirmed the presence of flask-shaped ulcers containing amoebic trophozoites, establishing the diagnosis of amoebic colitis. The patient was treated with metronidazole 750 mg three times daily for 10 days, resulting in complete resolution of hematochezia. This case showed that a negative stool examination did not exclude amoebic colitis. In patients with high clinical suspicion and persistent symptoms, colonoscopy and histopathological evaluation played a crucial role in confirming the diagnosis and enabling timely treatment. This report also showed the importance of a comprehensive diagnostic method to prevent delays in the management of amoebic colitis in endemic regions.

Keywords: Amoebic Colitis, *Entamoeba Histolytica*, Flask-shaped Ulcers, Hematochezia

ABSTRAK

Hematokezia kronis memiliki diagnosis banding yang luas; namun, di negara tropis, penyebab infeksius seperti *Entamoeba histolytica* perlu dipertimbangkan sejak awal. Diagnosis kolitis amuba seringkali menantang karena pemeriksaan tinja memiliki sensitivitas yang terbatas, sehingga berisiko menyebabkan keterlambatan diagnosis. Laporan kasus ini bertujuan untuk menyoroti keterbatasan pemeriksaan tinja serta menekankan peran penting kolonoskopi dan histopatologi dalam menegakkan diagnosis kolitis amuba pada kasus dengan gejala persisten.

Kami melaporkan kasus seorang pria berusia 49 tahun yang datang dengan keluhan hematokezia selama lebih dari satu bulan, disertai demam intermiten dan perut kembung. Pemeriksaan tinja awal menunjukkan banyak eritrosit dan leukosit, namun tidak ditemukan trofozoit atau kista *E. histolytica*. Karena gejala menetap, dilakukan kolonoskopi yang menunjukkan pankolitis dengan banyak ulkus besar berbatas tidak teratur, tertutup debris rapuh yang mudah berdarah di seluruh kolon. Pemeriksaan histopatologi mengonfirmasi adanya ulkus berbentuk labu yang mengandung trofozoit amuba, sehingga menegaskan diagnosis kolitis amuba. Pasien kemudian diobati dengan metronidazole 750 mg tiga kali sehari selama 10 hari, dengan resolusi total hematokezia. Kasus ini menegaskan bahwa hasil pemeriksaan tinja yang negatif tidak menyingkirkan diagnosis kolitis amuba. Pada kondisi dengan kecurigaan klinis tinggi dan gejala persisten, kolonoskopi dan pemeriksaan histopatologi memiliki peran krusial dalam memastikan diagnosis dan memungkinkan terapi yang tepat waktu. Laporan ini menekankan pentingnya pendekatan diagnostik yang komprehensif untuk mencegah keterlambatan penatalaksanaan pada kolitis amuba di daerah endemik.

Kata kunci: Kolitis Amuba, *Entamoeba Histolytica*, Ulkus Berbentuk Labu, Hematochezia

INTRODUCTION

Amoebic colitis is an infectious gastrointestinal disease caused by *Entamoeba histolytica* (*E. histolytica*).¹ The disease represents a major global health burden, causing an estimated 55,000 deaths per year, particularly in tropical and subtropical regions of America, Asia, and Africa due to poor hygiene and sanitary conditions.^{2,3} Transmission often occurs through the fecal-oral route, including sexual practices with anal-oral contact.³ Amoebic colitis is often asymptomatic but can cause several clinical symptoms, including cramping abdominal pain, watery or bloody diarrhea, and loss of weight.⁴ The diagnosis of this disease is generally based on clinical presentation and stool examination showing trophozoites or cysts of *Entamoeba histolytica*. However, stool examination has limited sensitivity, which makes diagnosis challenging and potential delay appropriate treatment.⁵

The diagnostic challenge becomes particularly relevant when amoebic colitis presents with persistent hematochezia despite inconclusive stool findings. Therefore, this case report presents a 49-year-old male with hematochezia persisting for over one month. Initial stool examinations were negative for *Entamoeba histolytica* trophozoites or cysts. Due to ongoing symptoms and inconclusive findings, further diagnostic evaluation was undertaken. Colonoscopy showed characteristic flask-shaped ulcers. Histopathological examination confirmed the presence of *Entamoeba histolytica* trophozoites, establishing the diagnosis of amoebic colitis. This case report aims to specifically show the limitations of stool examination in diagnosing amoebic colitis presenting as chronic hematochezia. The critical role of colonoscopy and histopathological evaluation is also emphasized to establish a definitive diagnosis when initial stool findings are inconclusive.

CASE ILLUSTRATION

A 49-year-old male presented with bright red blood mixed with mucus in his stool for more than one month. The patient also reported a sensation of abdominal bloating and intermittent fever. However, there were no complaints of abdominal pain, nausea, or vomiting. On physical examination, mild tenderness in the periumbilical region was present. Digital rectal examination showed no palpable mass, but bright red blood mixed with stool was observed on the glove.

Further diagnostic evaluations were carried out to assess the patient's condition. Complete blood count showed a normal hemoglobin level of 12.5 g/dL, mild leukocytosis ($18.3 \times 10^3/\mu\text{L}$), and a normal platelet count ($282 \times 10^3/\mu\text{L}$). Coagulation profile showed normal results, with a prothrombin time (PT) of 11.4 seconds (control 10.5 seconds), activated partial thromboplastin time (aPTT) of 27 seconds (control 25.6 seconds), and an international normalized ratio (INR) of 1.08.

Blood chemistry results showed normal liver function tests, with aspartate aminotransferase (AST/SGOT) of 15 U/L and alanine aminotransferase (ALT/SGPT) of 12 U/L. Renal function was within normal limits, with urea of 23 mg/dL, creatinine of 0.85 mg/dL, and an estimated glomerular filtration rate (eGFR) of 107 mL/min/1.73 m². Random blood glucose level was also normal at 100 mg/dL, while electrolyte analysis showed mild hyponatremia (135 mmol/L) and mild hypokalemia (3.0 mmol/L). Inflammatory marker assessment showed an elevated C-reactive protein (CRP) level of 127 mg/L.

Routine stool examination showed numerous erythrocytes (approximately 100 per high-power field) and leukocytes (approximately 110 per high-power field), although no *Entamoeba histolytica*

trophozoites, cysts, or helminth ova were identified. Due to the persistent hematochezia, inconclusive stool examination results, and the need to exclude inflammatory bowel disease or colorectal malignancy, a colonoscopy was performed for further diagnostic evaluation. The procedure showed pancolitis with multiple large ulcers covered with friable debris that bled easily, alongside irregular borders and evidence of active bleeding (**Figure 1**).

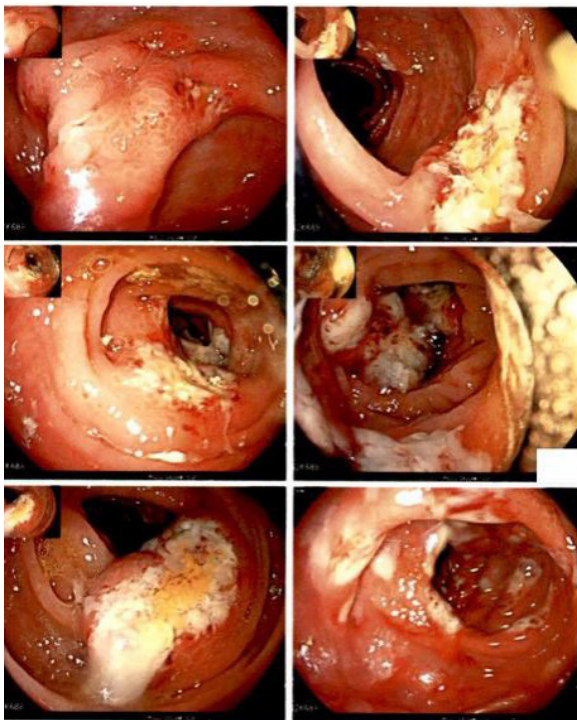


Figure 1. Pancolitis and multiple large ulcers throughout the colon, with irregular borders and evidence of bleeding, were observed on colonoscopy

The examination was further continued with histopathological analysis. Biopsy specimens were obtained from the ulcerative lesions in the colon. Histopathological examination showed multiple characteristic flask-shaped ulcers extending from the mucosa into the submucosa (**Figure 2**), consistent with invasive tissue destruction. Subsequently, several *Entamoeba histolytica* trophozoites were identified predominantly at the ulcer margins and within areas of necrotic debris (**Figure 3**), showing active tissue invasion. The surrounding mucosa showed inflammatory cell infiltration with areas of preserved architecture, a pattern that supported the diagnosis of invasive amoebic colitis rather than diffuse inflammatory bowel disease. The patient was treated with metronidazole 750 mg three times daily for 10 days, alongside lansoprazole 30 mg twice daily and domperidone 10 mg three times daily. After the treatment, the patient showed significant

clinical improvement, with complete resolution of hematochezia and mucus in the stool. Although follow-up colonoscopy was not performed, clinical symptoms resolved completely.

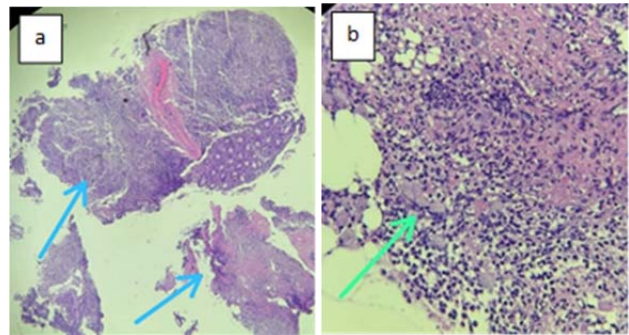


Figure 2. Histopathological appearance of colonic ulcers showing characteristic flask-shaped morphology (Hematoxylin and eosin staining, ×20 magnification (a) and ×40 magnification (b))

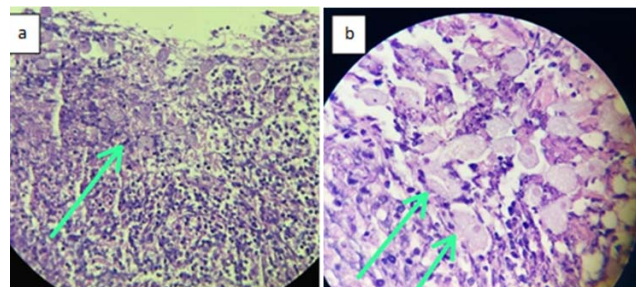


Figure 3. Histopathological findings showing clusters of *Entamoeba histolytica* trophozoites (Hematoxylin and eosin staining, ×40 magnification (a) and ×100 magnification (b))

DISCUSSION

Hematochezia is a clinical indicator of lower gastrointestinal (GI) bleeding, which originates distal to the ligament of Treitz.^{6,7} This clinical symptom is caused by infectious colitis, inflammatory bowel disease, hemorrhoids, ischemic colitis, diverticular bleeding, or even colon carcinoma.⁶ Therefore, infectious causes should be prioritized in the differential diagnosis and excluded, particularly in tropical regions where etiologies are more common.⁸ One of the etiologies of infectious colitis is *E. histolytica*, a protozoan parasite capable of invading the colonic mucosa and inducing inflammatory changes.⁹

Despite the clinical importance of amoebic colitis, diagnosing *E. histolytica* infection remains challenging, particularly in resource-limited settings where diagnosis relies on stool microscopy. In this case report, routine stool examination did not show amoebic organisms despite significant inflammatory findings. These negative results could be attributed to the limited sensitivity of a single stool examination. False-negative results occur because of intermittent

shedding of trophozoites, delayed sample processing, or inadequate specimen collection. Diagnostic sensitivity may improve to approximately 80% when at least three stool samples are examined on separate days.⁸

The limitations of stool microscopy have led to the use of additional diagnostic methods for intestinal amoebiasis, including fecal polymerase chain reaction (PCR), fecal and/or serum antigen detection, serology, and colonoscopy with histologic examination of colonic biopsy specimens.^{8,10,11} However, traditional methods like microscopy and serology have limitations, making accurate diagnosis challenging. Currently, the standard diagnostic testing is molecular methods but remains inaccessible in many resource-limited settings. Commercial multiplex PCR panels have also become increasingly available and allow simultaneous detection of multiple enteric pathogens in stool samples, including *E. histolytica*. In a previous case report, a multiplex PCR panel was used to rule out 21 other enteric pathogens, which included bacterial causes of colitis, showing its potential as a tool for antimicrobial stewardship. The assay used by Madden et al. also showed sensitivity and specificity close to 100% for detecting amoebiasis, indicating a low likelihood of false-positive results.^{12,13}

In this case report, due to the persistent hematochezia and inconclusive stool examination findings, colonoscopy was performed to further evaluate the underlying cause. Colonoscopy findings showed pancolitis and multiple large ulcers throughout the colon, with irregular borders and evidence of bleeding (**Figure 1**). The examination was continued with histopathological analysis, which showed the presence of amoebic trophozoites and flask-shaped ulcers, confirming the diagnosis of amoebic colitis (**Figures 2 and 3**). These results are consistent with the characteristic endoscopic features of invasive amoebic colitis, which often include discrete, shallow-based ulcers covered with white or yellowish exudates, accompanied by edematous mucosa. The mucosa adjacent to the ulcers typically appears normal. Trophozoite forms of *Entamoeba histolytica* can be identified in specimens obtained from the ulcer base through scraping or aspiration, while endoscopic biopsy or mucosal scraping provides high diagnostic yield in such cases. Generally, trophozoites are identified through routine examination under light microscopy.¹⁴

The trophozoite shows a strong affinity for colonic mucin-producing cells and produces enzymes that damage the epithelium, allowing invasion of gastrointestinal tissue and forming the characteristic

flask-shaped ulcers. The identification of trophozoites through light microscopy enables the definitive diagnosis of amoebic colitis. Additionally, colonoscopy is valuable for excluding several important differential diagnoses, including hemorrhoids, inflammatory bowel disease (IBD), and colon carcinoma.^{15–18} In this case report, IBD was excluded based on histopathological evaluation, which did not show characteristic features typically associated with IBD. The features included macroscopy (diffuse and continuous inflammation with no skip lesions in Ulcerative Colitis, skip lesions in Crohn's Disease) and microscopy (termed crypt mucosal architectural distortion, increased and altered distribution of cell types that are normally present, neutrophil granulocyte infiltration, mucin depletion, metaplastic changes, and surface epithelial damage).^{19,20} A diagnosis of malignancy in this patient can also be ruled out, because no mass was found on colonoscopy or histopathological examination.

Treatment for amoebic colitis generally includes metronidazole at a dose of 750 mg three times daily for 5 to 10 days, followed by a luminal amoebicide to eradicate residual intestinal infection. Recommended luminal agents include diloxanide furoate, paromomycin, and iodoquinol. Diloxanide furoate has amoebicidal activity against the luminal trophozoite stage of *E. histolytica* but is ineffective against trophozoites that have invaded the intestinal wall or disseminated to extraintestinal tissues. In comparison, paromomycin shows both amoebicidal and antibacterial properties. Iodoquinol, another luminal agent, is active against both cysts and trophozoites within the intestinal lumen. However, these anti-amoebic agents are not available in Indonesia, limiting treatment options to Metronidazole. Based on mechanism of operation, Metronidazole exerts amoebicidal effect after intracellular reduction of its nitro group by susceptible anaerobic organisms, generating reactive nitro radicals that interact with parasitic DNA, leading to DNA strand breaks and subsequent cell death.²¹

The majority of patients with amoebic colitis respond well to medication and improve within a few weeks, while surgery is only needed when complications occur.^{22–26} The clinical course in this case report was consistent with the expected response to medical treatment, with significant improvement and complete resolution of hematochezia following metronidazole treatment at 750 mg three times daily for 10 days. Follow-up colonoscopy was not performed after completion of treatment because the patient declined

further endoscopic evaluation. Consequently, objective assessment of mucosal healing and endoscopic resolution was unavailable, and treatment response was assessed based solely on clinical improvement. This limitation should be considered when interpreting the treatment outcome of the case report.

CONCLUSION

In conclusion, this study shows amoebic colitis as an important cause of chronic hematochezia in tropical settings and underscores the diagnostic challenges, particularly when routine stool examinations fail to detect *E. histolytica*. The diagnosis is established through colonoscopic findings and histopathological confirmation. Appropriate treatment shows complete resolution of hematochezia and associated symptoms, indicating a favorable clinical response. However, this report is limited by the absence of follow-up colonoscopic evaluation and the lack of advanced diagnostic modalities such as molecular or antigen-based testing. Therefore, treatment outcomes are assessed only based on clinical response without endoscopic confirmation of mucosal healing. Despite these limitations, the case emphasizes the importance of considering amoebic colitis in patients with persistent symptoms and negative initial stool examinations.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this study.

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This study received no external funding.

AUTHOR CONTRIBUTIONS

All authors contributed to the conception and design of the study. Data collection, analysis, and interpretation were performed by the authors. Furthermore, all authors were included in drafting and revising the manuscript and approved the final version for publication.

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DATA AVAILABILITY

The data supporting the results of this study are available from the corresponding author upon reasonable request.

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