ECRONICON OPEN ACCESS

EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Case Report

A Rare Case of Acute Colitis Associated with Lead Ingestion: The Triggering Role of Khôl Beldi

Amrharhe El Mehdi[1]*, Mechhor Salma[1], EL Bacha Hicham[1], Cherkaoui Malki Manal[1], Benzzoubeir Nadia[1] and Errabih Ikram[1]

[1]Medicine B Gastroenterology and Proctology Department, Ibn Sina University Hospital, Rabat, Morocco

***Corresponding Author:** Amrharhe El Mehdi, Medicine B Gastroenterology and Proctology Department, Ibn Sina University Hospital, Rabat, Morocco.

Received: October 27, 2025; **Published:** November 25, 2025

Abstract

Acute colitis is a medical emergency with multiple etiologies, including infections, inflammatory bowel disease, and toxic exposures. This case describes a 42-year-old woman who developed severe acute colitis after ingesting Khôl Beldi, a traditional North African cosmetic known to contain high levels of lead. She presented with profuse bloody diarrhea, abdominal pain, fever, and systemic inflammation. Extensive microbiological and serological tests were negative, while imaging and colonoscopy revealed severe colonic inflammation. Blood lead levels were markedly elevated (142 µg/L), confirming lead-induced colitis. The patient was treated with intravenous hydration, corticosteroids, antibiotics, and chelation therapy with EDTA, leading to significant clinical and biological improvement. This case highlights the importance of considering toxic exposures in cases of acute colitis of unknown origin, particularly in regions where traditional remedies are commonly used.

Keywords: *Acute Colitis; Lead Intoxication; Khôl Beldi; Toxic Colitis; Gastrointestinal Toxicity*

Introduction

Severe acute colitis is a medical emergency requiring prompt management to avoid complications, such as perforation, digestive hemorrhage, or septic shock. Common causes include bacterial or parasitic infections, chronic inflammatory bowel disease, iatrogenic or neoplastic factors, and rarer etiologies, such as toxic intoxications, must also be considered, particularly in specific cultural or environmental contexts. Lead intoxication, although primarily known for its systemic effects on the nervous, renal, and hematological systems, can also affect the gastrointestinal tract, causing chronic abdominal pain, diarrhea, and in rare instances, severe acute colitis. Sources of Pb exposure include industrial products (e.g. paints and batteries) as well as traditional remedies or cosmetics, such as Khôl Beldi. This product, commonly used in North Africa, often contains high concentrations of lead, making it a significant environmental hazard. We report a rare case of severe acute colitis following ingestion of Khôl Beldi, highlighting the clinical and biological features, as well as the diagnostic and therapeutic challenges of this toxic etiology.

Case Report

We present the case of Mrs. Z.B., a 42-year-old housewife from a rural area of Ouarzazate, with no notable medical history. She was admitted to the emergency department with five days of glairo-bloody diarrhea and diffuse abdominal pain. Symptoms began a few hours after she ingested a tablespoon of Khôl Beldi mixed with honey for purported "curative purposes".

The patient described abdominal pain as diffuse but most severe in the hypogastrium, associated with more than ten episodes of diarrhea daily, often bloody and mucoid. She also reported nausea, early onset vomiting, fever, and significant fatigue, which progressively worsened. Despite the severity of her symptoms, she had no history of inflammatory bowel disease, celiac disease, HIV infection, or prior exposure to toxic substances. The family history was unremarkable for digestive disorders and cancer.

On admission, Mrs. Z.B. was febrile with a temperature of 38.7°C, moderate tachycardia at 95 bpm, and blood pressure of 130/70 mmHg. Clinical examination revealed dehydration, indicated by a dry skin fold and a BMI of 20 (weight: 60 kg; height: 1.70m). Abdominal palpation revealed generalized tenderness, particularly in the lower right quadrant, but without rigidity or rebound tenderness. A rectal examination confirmed the presence of fresh blood and mucus. Despite the severity of symptoms, there were no signs of peritoneal irritation.

Laboratory investigations revealed a systemic inflammation and metabolic disturbances. Inflammatory markers were significantly elevated, including CRP level of 288 mg/L, hypoalbuminemia (25 g/L), hyponatremia (132 mmol/L), and severe hypokalemia (2.3 mmol/L).

Microbiological investigations were extensive, but negative, ruling out common infectious causes. Coproculture and parasitological stool examinations showed no pathogenic organisms across the three samples. Serological tests for HIV, HAV virus, HBV virus, HCV virus, EBV, CMV, HSV, and VZV were negative. Blood cultures and sputum tests for Koch's bacillus (BK) were also unremarkable.

Abdominal ultrasonography revealed diffuse colonic wall thickening and pericolic fat stranding, suggestive of significant colonic inflammation (Figure 1). An entero-CT scan showed loss of colonic haustrations predominantly in the left colon and rectosigmoid region, with no abnormalities in the small intestine (Figure 2). Colonoscopy revealed deep ulcerations, mucosal detachment, and erythematous and edematous mucosa (Figure 3). Histopathological examination of the biopsy samples confirmed features of nonspecific subacute colitis, ruling out neoplastic causes.

Figure 1: *Abdominal ultrasound imaging showing diffuse thickening of the colonic wall with increased echogenicity of the pericolic fat, suggestive of severe acute colitis. Colonic distension with partial loss of haustrations is also noted.*

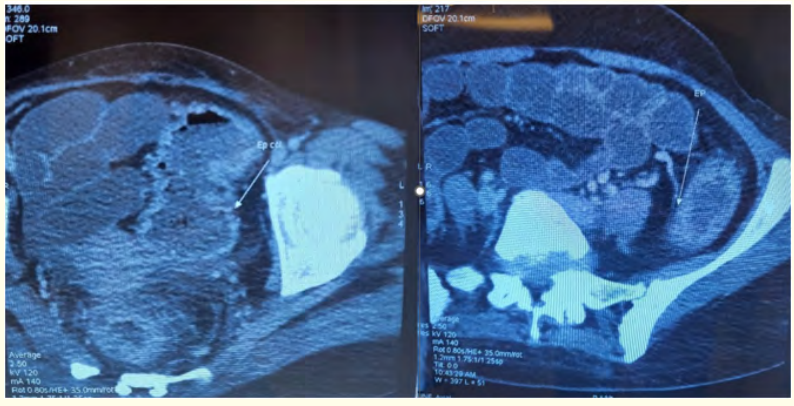

Figure 2: *Axial abdominal CT scan showing marked thickening of the colonic wall with infiltration of the pericolic fat, consistent with severe acute colitis. Colonic distension and loss of haustrations are also noted, suggesting an intense inflammatory process.*

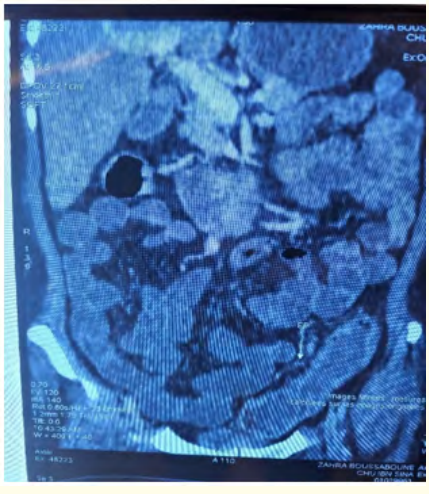

Figure 3: *Coronal abdominal CT scan showing diffuse and irregular thickening of the colonic wall with infiltration of the pericolic fat, associated with colonic distension and altered mucosal relief.*

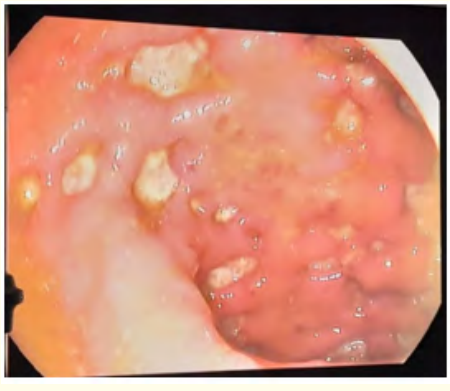

Figure 4: *Endoscopic image showing an erythematous and edematous colonic mucosa with deep ulcers covered with fibrin, suggestive of a severe inflammatory process consistent with acute severe colitis.*

During a detailed patient interview, she disclosed the ingestion of Khôl Beldi mixed with honey several hours prior to symptom onset. This prompted an evaluation of heavy metal toxicity. Blood lead levels were markedly elevated at 142 µg/L (toxic threshold >10 µg/L), confirming acute lead intoxication as the likely etiology of her colitis.

She received intravenous rehydration and electrolyte replacement, Methylprednisolone (0.8 mg/kg/day) and empirical antibiotics (ciprofloxacin and metronidazole). Chelation therapy with EDTA was initiated to reduce blood lead levels, which decreased from 142 to 68 µg/L over the course of treatment.

The patient's clinical course was favorable. By day 5, diarrhea episodes had decreased to five per day, abdominal pain had resolved, and CRP levels had dropped to 45 mg/L. Repeat colonoscopy on day 10 showed regression of the deep ulcerations, with the appearance of inflammatory pseudopolyps but no complications. Upon discharge, oral corticosteroids, rectal 5-ASA washes, and regular monitoring of blood lead levels were prescribed, with a follow-up colonoscopy planned for three months to evaluate mucosal healing and pseudopolyp progression.

Discussion

This case illustrates the complexity of diagnosing toxic colitis, particularly when it is triggered by rare substances such as Khôl Beldi. Although lead poisoning primarily affects the nervous, renal, and hematological systems, its gastrointestinal manifestations, such as colitis, are less frequently reported [1,2]. Lead-induced gastrointestinal damage can occur through multiple mechanisms. Direct irritation of the colonic mucosa can result in inflammation and ulceration, as evident in the colonoscopy findings in this patient [3,4]. Furthermore, lead acts as an immune modulator, exacerbating colonic inflammation through the activation of immune pathways, which may explain the severe inflammatory response observed in this case [5]. Alterations in intestinal microcirculation and dysbiosis further contribute to the pathogenesis of lead-induced colitis [6,7].

The differential diagnosis in this case was broad and required exclusion of several possibilities. Infectious causes were ruled out based on negative microbiological and serological tests. Chronic inflammatory bowel diseases, such as Crohn's disease or ulcerative colitis, were deemed unlikely due to the absence of prior symptoms, family history, rapid resolution of symptoms following treatment, and the results of the histopathological analysis. Neoplastic causes were excluded on the basis of imaging, endoscopy, and histopathological findings. Ultimately, the temporal association between the ingestion of Khôl Beldi and the onset of symptoms, combined with elevated blood lead levels, strongly supports the diagnosis of toxic colitis.

This case highlights the importance of cultural awareness in medical practice. Traditional products, such as Khôl Beldi, remain widely used in certain regions despite their potential toxicity. Public health initiatives should focus on educating communities regarding the risks of using such products. Interdisciplinary collaboration between gastroenterologists, toxicologists, and public health experts is essential for managing cases of toxic exposure and mitigating future risks [8].

From a therapeutic perspective, this case underscores the efficacy of chelation therapy coupled with corticosteroid treatment to control colonic inflammation in rapidly reducing toxic lead levels. Regular follow-up and patient education are crucial to prevent re-exposure and ensure long-term recovery. Further research is warranted to better understand the long-term gastrointestinal effects of lead toxicity and optimize treatment protocols for similar cases.

Conclusion

This rare case highlights the need for heightened awareness of the toxic etiologies of acute colitis, particularly in specific cultural contexts. The ingestion of Khôl Beldi, a traditional product with a high lead content, triggered severe colitis in this patient, necessitating a

multidisciplinary treatment approach. Further research is warranted to better understand the gastrointestinal effects of lead intoxication and to optimize therapeutic strategies.

Bibliography

1. Flora SJ., *et al*. "Toxicity of lead: A review with recent updates". *Interdisciplinary Toxicology* 5.2 (2012): 47-58.
2. Hecht EM., *et al*. "The microbiome and lead toxicity". *Current Environmental Health Reports* 8.4 (2021): 123-134.
3. Needleman HL. "Lead poisoning". *Annual Review of Medicine* 55 (2004): 209-222.
4. Shukla N., *et al*. "Lead-induced colitis: A rare case report". *Indian Journal of Gastroenterology* 34.2 (2015): 157-160.
5. World Health Organization (WHO). "Lead exposure and health outcomes". WHO Guidelines (2019).
6. Centers for Disease Control and Prevention (CDC). "Lead toxicity overview" (2020).
7. Goyer RA., *et al*. "Chelation therapy for lead poisoning". *Journal of Medical Toxicology* 9.1 (2013): 64-74.
8. Rabinowitz MB., *et al*. "Gastrointestinal effects of lead poisoning". *Journal of Toxicology: Clinical Toxicology* 48.3 (2010): 259-264.

Volume 12 Issue 3 March 2025
©All rights reserved by Amrharhe El Mehdi., *et al*.