Acute cryptosporidiosis as a cause of sudden recurrence of digestive symptoms in patients with Crohn's disease

Orianne Colussi, Alexandre Rouen, Philippe Seksik, Jacques Cosnes, Laurent Beaugerie, Harry Sokol

Department of Gastroenterology and Nutrition, AP-HP, Hôpital Saint-Antoine F-75012 and UPMC Univ Paris 06 F-75005, Paris, France

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Abstract

Gastrointestinal symptoms occurring in patients with Crohn's disease (CD) can be related to disease activity or to intercurrent infection. Absence of appropriate stool work-up can lead to misdiagnosis and wrong treatment. We report here two cases of acute cryptosporidiosis in patients with CD. This microorganism can trigger IBD flare or cause severe infections in immunocompromised host. Adding specific search for oocysts of Cryptosporidium parvum using the Ziehl–Neelsen technique to the microbiologic work-up from stools in patients with Crohn's disease seeking medical intervention for sudden exacerbation of digestive symptoms seems to be recommended.

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1. Introduction

In patients with clinically inactive Crohn's disease (CD), intermittent infections with intestinal pathogens can induce gastrointestinal symptoms. In the absence of appropriate stool work-up, these presentations can be falsely diagnosed and treated as Crohn's flare. Several recent works have underlined the need for including the search for Clostridium difficile and its toxins in the routine initial evaluation of the attacks of Crohn's disease.1,2 We report here two clinical cases suggesting that acute cryptosporidiosis may be responsible for transient exacerbation of digestive symptoms or more severe and prolonged symptoms mimicking an acute flare-up of the disease.

2. Case report

The first patient was a 24-year-old man with a 5-year history of Crohn's pancolitis. He was previously treated with azathioprine and 6-mercaptopurine both stopped for gastrointestinal intolerance followed by methotrexate and most recently by infliximab at 5 mg/kg/8 weeks for the past 3 years with clinically controlled disease. He presented with...
three-day history of diarrhea associated with abdominal pain and vomiting.

At the time of admission he complained of up to 6 watery bowel movements a day. He lost 5 kg over the past three days. His last dose of infliximab was 5 weeks earlier. Complete blood count and standard biochemical tests were within the normal limits. Relevant biological data are reported in Table 1. Neither bacterial pathogens nor *Clostridium difficile*’s toxins were found in stools. Cryptosporidiosis oocysts were found in stools with Ziehl–Neelsen staining. Awaiting the microbiological analysis results, the patient received symptomatic treatment with intravenous rehydration. Symptoms spontaneously disappeared after 4 days. The origin of contamination was not identified. A new search of cryptosporidiosis oocyst was done 2 weeks after hospital discharge and was negative. Scheduled infliximab infusion was performed 3 weeks after hospital discharge with no complication.

The second patient was a 25-year-old man with a 7-year history of ileo-colonic CD. He previously was treated with azathioprine and 6-MP both stopped for allergic reaction followed by methotrexate. The patient himself stopped methotrexate 18 months later as his disease was under good control. Unfortunately he had been lost of follow up for the past 5 years and did not receive any treatment for his CD during this period.

Three days prior to admission, patient had typical symptoms of acute gastroenteritis. He took non-steroidal anti-inflammatory drug for two days but the symptoms significantly worsened. He developed up to 17 bloody stools a day. His daughter and wife had similar gastroenteritis symptoms which resolved spontaneously within three days. He noted 7 kg weight loss over the past three days and was dehydrated. Relevant biological data are reported in Table 1. Neither bacterial pathogens (*Salmonella*, *Shigella*, and *Campylobacter jejuni-coli*) nor *Clostridium difficile*’s toxins were found in stools and CMV PCR was negative in blood. Cryptosporidiosis oocysts were found in stools. Rectosigmoidoscopy showed moderate inflammation with superficial ulcerations in the rectum and the descending colon.

Intravenous corticosteroids treatment was started because clinical presentation evoked a severe IBD flare. Once cryptosporidiosis oocysts were confirmed in the stool, antiparasitic therapy with azithromycin (250 mg twice a day for 3 days) was started. Clinical and biological evolution was favourable with resolution of diarrhea and normalisation of CRP level within 13 days.

## 3. Discussion

*Cryptosporidium* spp are known cause of traveler’s diarrhea and responsible for outbreaks of diarrhea often in association with recreational water consumption. In the second reported case, the symptoms appeared 2 days after the patient’s wife had emptied the family swimming pool, suggesting a family outbreak. However, the patient had severe symptoms while members of his family had moderate self-limited diarrhea.

Several studies showed that the severity of cryptosporidiosis varies according to the immune status of the host. The infection is generally self-limited in immunocompetent patients but severe or chronic in AIDS patients or in malnourished children. The only antiparasitic drug proven to be effective in children is nitazoxanide although its effectiveness is less clear in HIV-positive patients. The anti- *Cryptosporidium* activity of azithromycin and paromycin is suggested by some studies. The second patient received azithromycin, since nitazoxanide can be dispensed only after special request (Temporary Utilization Authorization) in France. Nevertheless the lack of scientific validation and the generally self-limited character of cryptosporidiosis suggest that only immunocompromised patients should be treated.

There is very little data on cryptosporidiosis in IBD patients. During the 1993 Milwaukee outbreak, 12 cases of cryptosporidiosis occurring in IBD patients with stable ulcerative colitis (UC) or CD were identified. All cases recovered completely and immunosuppressive therapy was not associated with more severe illness. In an Indian prospective study, 2% of active UC patients were positive for *Cryptosporidium*. A case of cryptosporidiosis in a 20-year-old woman treated with azathioprine for CD has been described by Smith et al. 6

Taken together, our case reports and available literature suggest *Cryptosporidium* infections are not infrequent in IBD patients. Moreover, it has been advocated that these infections could trigger or worsen an IBD flare, as suggested by a study showing that *Cryptosporidium parvum* infection was associated with accelerated symptoms in a mice model of spontaneous colitis. We thus recommend adding specific search for oocysts of *Cryptosporidium parvum* using the Ziehl–Neelsen technique to the microbiologic work-up from stools in patients with Crohn’s disease seeking medical intervention for sudden exacerbation of digestive symptoms.

## References