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EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Case Report

A Dilemma in Diagnosing and Managing Amoebiasis Colitis and Ulcerative Colitis: Case Report

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Received: April 20, 2023; Published: May 31, 2023

Abstract

Amoebiasis is a parasitic disease caused by a protozoan parasite called *Entamoeba histolytica* found worldwide and mostly in low- and middle-income countries. Amoebiasis colitis is mostly revealed by acute diarrhea, bloody or non- bloody and abdominal pain, and the use of steroids is the main risk factor of developing fulminant colitis, thus identifying the right diagnosis is particularly important, since the main differential diagnosis is Ulcerative Colitis which steroids are one of the cornerstones of treatment. In addition, the association of amoebiasis colitis and Ulcerative Colitis is frequent, it may trigger and/or worsening the fare-up, thus confronting the clinician to a dilemma of managing the clinical state. We report below a case that illustrate the dilemma of managing amebiasis colitis associated to Ulcerative Colitis.

Keywords: *IBD; Amoebiasis; Dilemma; Diagnosis; Management*

Abbreviations

UC: Ulcerative Colitis; IBD: Inflammatory Bowel Disease; CRP: C-Reactive-Protein

Introduction

Amoebiasis is an infection caused by the protozoan *Entamoeba histolytica* found all over the world, mainly in low- and middle-income countries. Its clinical presentation varies from asymptomatic amebiasis to tissue or invasive amebiasis, such as amoebiasis colitis which has clinical and endoscopic similarities with IBD, mostly Ulcerative colitis (UC), that may cause a real dilemma while taking decision to treat. Through this case, we illustrate how the similarities between these two diagnoses can be a problem to clinical practice.

Case Report

A 19-year-old young woman with no personal medical background, but a brother with Crohn´s Disease, presented to the emergency department for acute severe colitis with bloody diarrhea associated to severe hypogastric abdominal pain. Clinical examination found tachycardia at 120 beats per minute, normal blood pressure, no fever, the abdominal examination besides pain was normal. Biologically, there was elevated C-reactive- protein (CRP) at 46, leukocytosis at 17280, ferritinemia at 47, Hemoglobin at 10.2, platelet levels at 388000, hypo albuminaemia at 25. Rectosigmoidoscopy performed, has shown mucosal inflammation with superficial erosions without any visible blood. Lichtiger index score was calculated at Stool microscopy was positive for vegetative form of *E. histolytica*. Confronting this situation, especially with the family history of IBD, treatment based on parenteral steroids and metronidazole 500mg per 8h were started. The

evolution during the first week was characterized by a clinical and biological improvement, then an aggravation of Lichtiger Index and Travis criteria. But before concluding to a steroid resistance, parasitogical examination control showed the persistence of *E. histolytica* suggesting a possible resistance to Metronidazole rather than an authentic steroid resistance. In addition, sepsis and pancytopenia had complicated the colitis due to Enterococcus Faecalis translocation improved under antibiotics (Tigecycline and Ceftazidime), but no improvement had been noted for digestive symptoms, same amount of stool and abdominal pain, which had led the multi-disciplinary staff to the decision of starting Tinidazole 2g per day for five days before starting the infusion of Infliximab 5 mg/kg. The evolution under these two medications was, clinical response, defined as a relief of digestive symptoms, a normalization of CRP and leukocytes rate. This case suggests an authentic UC first flare up triggered by amoebiasis colitis.

Discussion

Amoebiasis is a parasitic disease caused by a protozoan parasite called *Entamoeba histolytica*. It´s a parasite found worldwide, but mostly in low- and middle-income countries where unsanitary conditions and access to health care might still be a problem. Around 90% of people infected don't develop any symptoms, while the remaining 10% develop invasive amoebiasis [1-3]. The factors inducing such clinical variety are still not clear, it seems to be complex interactions between host factors, parasitic genotype and environmental factors [4-6], recently it has been shown that microbite of infected people was enriched with *Prevotella copri*, suggesting the role of dysbiosis in the development of amoebiasis colitis [7]. It is considered as one of the underlying causes of diarrhea, causing death to 55000 patients per year [8].

Amoebiasis colitis, or symptomatic intestinal amoebiasis is typically revealed by acute diarrhea, bloody or non- bloody, associated or not to abdominal pain, the colitis can be limited to ascending colon or cecum. Fulminant colitis is a severe clinical presentation of the amoebiasis colitis that can occur when colonic inflammation is extended, it can be necrotizing colitis and toxic megacolon with high risk of intestinal perforation and peritonitis [9]. The use of steroids has been demonstrated as the main risk factor of developing fulminant colitis [9] highlighting the importance of identifying the correct diagnosis, a thing that can be challenging as the amoebiasis colitis can mimic IBD and lead to misdiagnosis and wrongly treating, and vice versa. That is what Shirley., *et al*. have reported, 58% of their patients who presented fulminant colitis caused by *E. histolytica* had received steroids for a misdiagnosed colitis, most were thought to be IBD flare-ups [9]. A Turkish prospective study reported that 31,5% of patients admitted for Ulcerative colitis flare-up were positive to *E. histolytica* [10], highlighting again the importance of eliminating amoebiasis colitis before considering any other diagnostic. Multiple diagnostics tools exist which sensitivity and specificity differs according to the used method. The identification of *E. histolytica*-specific nucleic acids by PCR is the gold-standard with a sensibility of 92- 100% and sensitivity of 89 - 100% [11], however, due to lack of standardization and high cost, it is not yet widely available. It´s the microscopy that is word widely used due to its simplicity and availability, but inconvenients are a low sensibility of 60% and the necessity of multiple stool samples. It should be used only in case of non-availability of other tools [9]. Serology is also interesting, the most sensitive serology assay is the indirect hemagglutination test (IHA) and is positive in up to 90% of patients with intestinal disease, however in countries where amebiasis is endemic, it is no interest if it is positive, because, up to 35% of individuals from endemic areas have persistent antibodies from previous infection; therefore, only a negative serology result can be helpful to exclude amoebiasis infection [12,13].

Treating amebiasis is warranted. Even asymptomatic carriers should be treated, but only with luminal amoebicide such as Tiliquinol or Paromycin in order to stop the spread of the infection by eliminating surviving cysts in the bowel lumen. For invasive amoebiasis, patient should receive a tissue amebicide, the mainstay therapy is Metronidazole for 10 days followed by a luminal amoebicide to eliminate any surviving organism in the lumen to prevent relapse. But the emergence of resistance conducts the development of multiples other alternatives, such as Tinidazole, another Nitroimidazole that has shown better efficacy than Metronidazole in term of symptoms and tolerance, but its non-availability worldwide makes its international recommendation impractical as a first line treatment, especially since there are no sufficiently strong data of superior efficacy in terms of parasitological clearance [14].

Conclusion

Amoebiasis is still a health problem, especially in low- and middle-income countries. Acute colitis in those regions of the world should imperatively get the right diagnosis, and eliminating a possible amoebiasis to start adequate treatment in order to avoid complications than can be fatal. But given the difficulty sometimes to do so, we recommend to start nitroimidazoles alone or associated to IBD´s therapies depending on the case, especially in those endemic areas.

Conflict of Interest

No conflict of interest to declare.

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Volume 10 Issue 6 June 2023