Lessons of the month 1: When what you see is not UC (ulcerative colitis): an unusual presentation of pancolitis in a developed country

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The misdiagnosis of intestinal schistosomiasis is not uncommon given its variety of clinical manifestations and often shares similarities with ulcerative colitis. While endoscopy aids in diagnosis, findings are often non-specific and correlation with histopathological features is crucial in arriving at an accurate diagnosis which is confirmed by the presence of schistosome ova within the lamina propria. In this case study, we report our experience with a 50-year-old woman, who had been residing in Singapore for more than a decade, presenting with recurrent episodes of bloody diarrhoea.

KEYWORDS: schistosomiasis, ulcerative colitis, colonoscopy, inflammatory bowel disease

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Case presentation

A 50-year-old woman presented with recurrent episodes of bloody diarrhoea since 2011. Previous stool cultures and microscopic examination for parasites were negative. The patient had worked in Singapore, a developed nation, for over a decade. In this current admission, she presented again with bloody diarrhoea for a week. Her temperature was 38.1°C, pulse rate of 101 beats per minute, haemoglobin of 10.0 g/dL and C-reactive protein of 42 mg/dL. The patient also had six to eight episodes of Bristol Stool scale 6 daily, which was mixed with blood. Despite 4 days of antibiotics, she remained febrile, tachycardic and with persistent bloody diarrhoea.

Colonoscopy during this admission showed pancolitis (Fig 1) but sparing the caecum and terminal ileum.

She was diagnosed with an ulcerative colitis (UC) flare and given intravenous hydrocortisone, oral mesalazine and rectal mesalazine enemas. The patient had almost immediate improvement with this treatment. She was discharged 2 days later with a tapering dose of prednisolone. However, the final histology report revealed acute on chronic colitis with calcified schistosome eggs in the descending colon and rectal biopsies (Fig 2).

The medications were stopped, and she was given a course of praziquantel. At her last review, the patient has remained asymptomatic off medications.

Discussion

Background: schistosomiasis

Schistosomiasis is caused by infection by parasitic blood flukes found in some freshwater snails. Seven schistosome species may infect humans; the three major ones being Schistosoma mansoni (Africa and South America), S haematobium (Africa and Middle East), and S japonicum (East Asia). S mansoni and S japonicum generally infect the intestinal tract, while S haematobium infects
An unusual presentation of pancolitis

The four minor species (S mekongi (Laos and Cambodia), S malayensis, and the rare S intercalatum and S guineensis (West and Central Africa)) infect the liver and intestines.\(^1\)

Infection occurs when the snail (intermediate host) sheds larvae (cercariae) into fresh water, which penetrate the skin or mucous membrane of humans (definitive host), enter the blood circulation and mature into adult worms in the portal venous system, thereafter migrating to the venules of the mesenteric or perivesical systems, laying eggs that are then eliminated in faeces or urine.\(^2\)

The adult worms have an average lifespan of 5 to 7 years but may persist for up to 30 years in the human host.\(^3\)

Schistosomiasis and ulcerative colitis

The misdiagnosis of intestinal schistosomiasis is not uncommon given its variety of clinical manifestations, some of which bear similarities to UC. A retrospective study conducted by Ye et al in 2013 analysing clinical, endoscopic and histopathological features of intestinal schistosomiasis found that, out of the 96 patients analysed, 24 (25%) were misdiagnosed, of which, eight (8.3%) patients were misdiagnosed with UC.\(^4\) While endoscopy aids the diagnosis of intestinal schistosomiasis, findings are often non-specific and need to be correlated with histopathological features coupled with clinical suspicion based on history in order to arrive at an accurate diagnosis.\(^5\)

Intestinal schistosomiasis often presents with abdominal pain and distension, bloody stools and weight loss; largely similar to symptoms in UC.\(^6\) Endoscopically, features of intestinal schistosomiasis may be classified into three types: acute colitis (oedema, congestion, mucus exudates, vascular striation, scattered ulcers and punctate haemorrhages), chronic colitis (mucosal thickening, fibrosis, loss of vascular texture and polypoid protrusion) and mixed. Scattered yellow nodules may be present in all types.\(^4\)

A retrospective case-control study by Xian et al published in 2021 found that chronic intestinal schistosomiasis predominantly involved the rectum and sigmoid colon, and was associated with polyp formation (mostly in the rectum) and haemorrhoids.\(^7\) Macroscopic features seen endoscopically may suggest, but are not unique to, a diagnosis of intestinal schistosomiasis.

The distinguishing feature lies in the microscopic presence of schistosome ova within the lamina propria.\(^6\) In acute disease, one may find intact uncalcified schistosome ova, with interstitial infiltration of eosinophils and neutrophils. Chronic intestinal schistosomiasis, on the other hand, manifests pathologically as calcified schistosome ova, lymphocytic and plasmocytic infiltration at the submucosa and lamina propria as well as atrophy of intestinal mucosal epithelium and proliferation of fibrous submucosal tissues.\(^8\) A retrospective study by Cai et al in 2021 found that eosinophilic counts within tissue were not significantly raised in intestinal schistosomiasis as compared with inflammatory bowel disease (IBD). Furthermore, ulcers, crypt distortion and transmural lymphoid aggregates were seen less often in schistosomiasis as compared with IBD.\(^6\)

Conclusion

This case highlights the challenge in accurate diagnosis of intestinal schistosomiasis, and the need to consider this diagnosis in patients suspected to have UC in whom there is prior history of residence in endemic areas or contact with infected freshwater.
The diagnosis must be considered during endoscopic evaluation, and the histological presence of schistosome ova looked for from biopsies, in order to avoid the misdiagnosis of intestinal schistosomiasis as UC due to the possibility of similar clinical presentations.

**Key points**

- Schistosomiasis may present as an unusual mimicker of ulcerative colitis in developed countries.
- Eliciting a history of prior residence in endemic areas is crucial in forming the index of suspicion for the diagnosis of schistosomiasis.
- Diagnosis is made by the histopathological presence of schistosome ova within the lamina propria on endoscopic biopsies.

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