From Colonoscope to Microscope: The Diagnosis of Trichuris Trichiura

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ABSTRACT

Soil Transmitted Helminthiasis (STH) is a major public health problem in the developing countries. Trichuriasis is one of the common prevalent parasitic infestations in the tropical and sub-tropical countries across the globe including India. However, there has been a steady decline of STH in the last five years where there has been success of albendazole with Mass Drug Administration (MDA) in National Filariasis Control Program and Kerala state has been one of them. We report a case of whipworm infection that was incidentally diagnosed by colonoscopy where repeated stool microscopy was uncontributory. The worm can be overlooked, particularly if colon preparation is not good.

Keywords: Colonoscope, Microscope, Diagnosis, Trichuris Trichiura

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INTRODUCTION
Soil Transmitted Helmenthiasis (STH) is a major public health problem in the developing countries. Trichuriasis is one of the common prevalent parasitic infestations in the tropical and sub-tropical countries across the globe. An estimated 800 million people harbor Trichuris trichiura worldwide, of which 114 million are preschool-age children and 233 million are school-age children. Usually asymptomatic, nausea, vomiting, diarrhea, constipation, anorexia and chronic colitis with growth stunting are known to occur in adults also. The Trichuris dysentery syndrome associated with heavy T. trichiura may be severe with chronic dysentery, rectal prolapse, anemia, poor growth, and clubbing of the fingers is also a known entity (1, 2). Periodic de-worming of school children and the success of albendazole added mass drug administration (MDA) prophylaxis program for the control of filariasis has contributed to the steady decline of prevalence of STH in some of the states of South India as in other places (3). Although there are reports from other countries describing diagnosis of T. trichiura by colonoscopy, it is usually made by identification of the typical eggs in the stool in developing countries such as India. We report a case of whipworm infection that was incidentally diagnosed by colonoscopy where repeated stool microscopy was uncontributory.

CASE REPORT
A 37-year old gentleman presented to the gastroenterology outpatient clinic with complaints of peri- umbilical pain, diarrhea and peripheral post-prandial burning sensation from over a month. There were no alterations in his appetite, no history of weight loss, fever and passing blood in the stools. There were no associated co-morbidities and no other remarkable history. Physical examination was normal. Abdomen was soft to palpate, no organomegaly, no suggestive mass, no evidence of free fluid and normal bowel sounds. The other systems were all within normal limits. The clinical impression at this stage remained as functional bowel disease with altered bowel habits and dyspepsia and was started on H2 blockers. The stool microscopy showed no blood or mucous, no WBC, RBC or egg of parasites. No enteric pathogens grew in stool. Eosinophilia (8%) was noted. Patient again reported back after a week with persisting symptoms. Repeat stool microscopy revealed no parasitic eggs for the second time also. On further work-up, Upper GI endoscopy showed hiatus hernia with prominent veins in lower oesophagus, CLO test for H pylori was negative. No evident abnormality was seen on ultrasound abdomen. Differential diagnosis of malabsorption syndromes like celiac disease, tropical sprue, intestinal tuberculosis and inflammatory bowel disease were considered at this stage and colonoscopy was planned after routine preoperative serological tests (HIV, HBsAg, HCV ELISA). Colonoscopy of the caecum showed multiple small worms. Attenuated whip-like ends of the worm were embedded in the colonic mucosa and were removed with biopsy forceps and sent for microbiology identification. At the laboratory, the worm was identified as Trichuris trichiura and patient was started on Mebendazole therapy for 7 days, following which he had a complete recovery. Patient has remained asymptomatic till date.

Discussion
Over a dozen of T. trichiura cases diagnosed by colonoscope have been reported in literature from USA, Italy, Japan, and Korea (5-8) but none from India, to our knowledge. In the developed countries, where invasive and expensive procedures are easily carried out, detection of T. trichiura is unusual and is attributed to the immigration from endemic areas. On the other side, though the worm infestation is commoner in India, simple stool microscopic demonstration of eggs is preferred to colonoscopy. However, our report shows that if stool examination is repeatedly negative for eggs, colonoscopy may be used as a diagnostic tool for evaluation for Trichuriasis
where there is likely a possibility of only male worms present. Colonoscopy certainly helps in ruling out other causes of chronic diarrhea as was intended in this case. Eosinophilic tissue infiltration in biopsy could have supported the findings but biopsy which was planned previously to rule out other causes was soon abandoned as the live worms were visualized. A good colon preparation made the easy visualization of worms as they can be overlooked if colon preparation is not good. This was one of the cases which stumped the surgeons on putting in the tube. While the male worm did not find its partner inside the Pandora’s Box, the surgeons donned all their thinking caps for complicated differential diagnosis.

Legend 1: Picture of gross male worms with attenuated whip-like ends received at laboratory after extraction.

Some people harbor hundreds or even thousands of worms, and they present with anemia, diarrhea, abdominal pain, weight loss, malnutrition, appendicitis, colonic obstruction, perforation, or intestinal bleeding (1). Trichuris dysentery syndrome (TDS) is a combination of symptoms, such as mucoid diarrhea and occasional bleeding. Rectal prolapse can occur in children with extremely high numbers of *T. trichiura* worms. The clinical symptoms of abdominal pain and diarrhoea in this patient were viewed as non-specific with lighter infection.

The Mass Drug Administration (MDA) prophylaxis program for filariasis and routine de-worming of government school going children has contributed enormously in decreasing the prevalence of STH in Kerala state. Improved personal hygiene, sanitation, health education and better socio-economic development are also quoted as other reasons for the decline. This patient was a relatively healthy, educated, middle-class city-dweller with sound sanitary defecation practices and eating habits and the route of acquisition remained a mystery.

**Conclusion**

Cases of chronic diarrhea require several investigations and routine stool microscopy may not be sufficiently helpful in occasional infective cases as this. With persisting prevalence of STH including Trichuriasis in India as compared to the developed world, awareness about coincidental finding of
Trichuris in colonoscopy should be borne in mind for proper diagnosis and effective treatment. Trichuriasis may not always be looked upon as a disease of the poor and under-privileged in tropics.

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References


