

## Number of whipworms found in the colon during colonoscopy in our study compared with other studies

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### Abstract

**Objective:** To study about the number of whipworms found in the colon while doing colonoscopy in our study and compare it with other studies.

**Methods:** A study of 72 patients who had undergone colonoscopy for a period of 5 years from November 2009 to October 2014 was carried out. In patients found to have parasitic worms during colonoscopy, number of parasitic worms in the colon were noted. Number of whipworms found in the colon during colonoscopy in our study is compared with other studies.

**Results:** Out of these 72 patients, parasitic worm was found in the colon in only one patient. The parasitic worm found in this patient was identified as whipworm or trichuris trichiura by its characteristic whip like shape. It has a short posterior thick part resembling the short handle of the whip and a long, thin anterior part resembling the distal long, thin part of the whip. Our patient was found to have only single whipworm in the colon while doing colonoscopy. Our study and also some other studies have shown only a single whipworm in the colon while doing colonoscopy. However other studies have shown multiple whipworms in the colon while doing colonoscopy.

**Conclusion:** Our study and also some other studies have shown only a single whipworm in the colon while doing colonoscopy which represents mild whipworm infection. However other studies have shown multiple whipworms in the colon while doing colonoscopy which represents severe whipworm infection.

**Keywords:** number of whipworms in the colon, trichuris trichiura, colonoscopy

### 1. Introduction

Whipworms are the most common nematodes or roundworms found in the large intestine of human beings while doing colonoscopy. There has been also reports of finding whipworm in the large intestine of human beings while doing colonoscopy in many parts of the world (1 to 14). In almost all the studies, whipworm or trichuris trichiura was almost the only intestinal helminth or roundworm found in the large intestine of human beings while doing colonoscopy (1, 3 to 14). Our patient was also found to have whipworm in the colon while doing colonoscopy. Number of whipworms found in the colon during colonoscopy in our study is compared with other studies.

### 2. Materials and Methods

This study was conducted in the department of general surgery, Aarupadai Veedu Medical College and Hospital, Puducherry. A study of 72 patients who had undergone colonoscopy for a period of 5 years from November 2009 to October 2014 was carried out. In patients found to have parasitic worms during colonoscopy, number of parasitic worms in the colon were noted. Number of whipworms found in the colon during colonoscopy in our study is compared with other studies.

### 3. Results

Out of these 72 patients, parasitic worm was found in only one patient. The parasitic worm found in this patient was identified as whipworm or trichuris trichiura by its characteristic whip like shape. This patient was an eighty year old male patient and a single adult whipworm was found in the sigmoid colon of this patient while doing colonoscopy (fig 1, 2). The patient

was treated with albendazole.

Our study and also some other studies have shown only a single whipworm in the colon while doing colonoscopy. However other studies have shown multiple whipworms in the colon while doing colonoscopy.

### 4. Discussion

#### 4.1 Single whipworm found in the colon during colonoscopy in other studies

- In the study conducted by Yoshida M *et al.* (3) in Japan, colonoscopy revealed a single whipworm or trichuris trichiura in a 65-year-old Japanese female patient.
- In the study conducted by Kyung-Sun Ok *et al.* (5) in Korea, colonoscopy revealed a single small, white, worm attached to the cecum (trichuris trichiura) in a 56 year old male patient. In the same study (5), colonoscopy revealed a single small, white, worm on the proximal ascending colon (trichuris trichiura) in a 46 year old male patient. In the same study (5), colonoscopy revealed a single small, white, worm within the ileocecal valve (trichuris trichiura) in a 55 year old male patient. In the same study (5), colonoscopy revealed a single whipworm or trichuris trichiura in the cecum in a 49 year old male patient.
- In the study conducted by Herman M. A *et al.* (13) in Michigan, United States colonoscopy revealed a single whipworm or trichuris trichiura 5cm in length and 2mm in diameter in the cecum in a 52-yearold female patient.
- In the study conducted by Chih-Cheng Chen A *et al.* (15) in Taiwan, colonoscopy revealed a single small whitish worm (whipworm or trichuris trichiura) attached to the cecum in a 50-yearold male patient.

**4.2 Few whipworms found in the colon during colonoscopy in other studies**

- a) In the study conducted by Tuan Sharif SE *et al.* (7) in Malaysia, colonoscopy revealed few thread-like nematodes embedding the ileocecal valve (*trichuris trichiura*) in a 46 year old male patient.
- b) In the study conducted by Tokmak N *et al.* (11) in Turkey, colonoscopy revealed multiple ulcerated mucosal lesions in the ascending colon and few worms in the ascending colon confirmed by colonoscopic biopsy and pathologic analysis of the biopsied tissue to be whipworms (*trichuris trichiura*) in a 75 year old male patient.

**4.3 Multiple whipworms found in the colon during colonoscopy in other studies**

- a) In the study conducted by Lee S. H *et al.* (12) in Korea, colonoscopy revealed several whitish parasites observed in the cecum and the ascending colon (whipworms or *trichuris trichiura*) which were removed by a biopsy forceps in a patient with abdominal pain.
- b) In the study conducted by Khuroo MS *et al.* (4) in Srinagar, Kashmir, India, ten patients with *Trichuris dysentery syndrome* were studied, including 8 female and 2 male patients. Colonoscopy revealed actively motile *Trichuris trichiura* worms in large numbers in the right colon in 7 patients, in the ileum in 1 patient, in the left colon in 1 patient, and worms carpeting of the whole colonic mucosa in 1 patient.
- c) In the study conducted by Wang DD *et al.* (6) in Shenyang, China colonoscopic examination demonstrated

the presence of more than 10 whipworms or *trichuris trichiura* on the mucosa of the cecum, colon, and rectum in a 48 year old male patient.

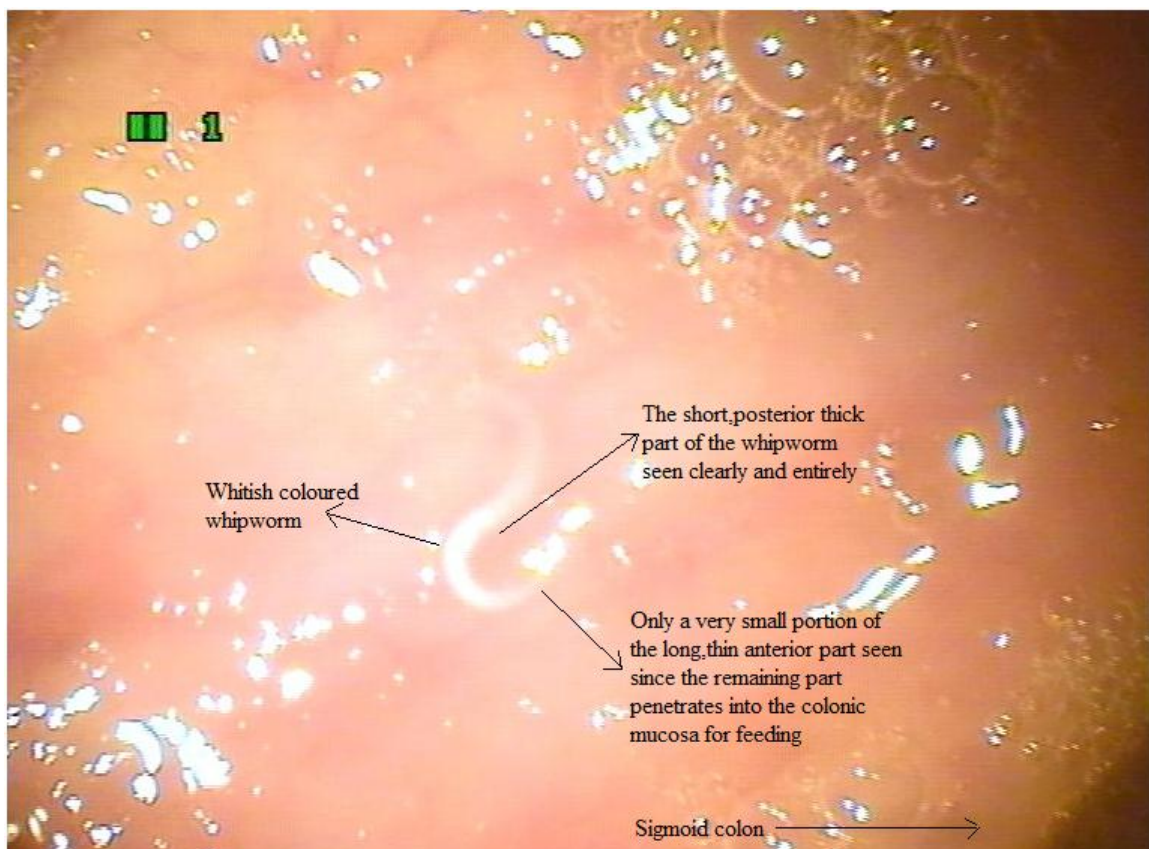
- d) In the study conducted by Azira M. S *et al.* (14) in Malaysia, colonoscopy revealed numerous *Trichuris trichiura* adult worms along the rectum and sigmoid colon in a 4-year-old girl.

**4.4 Whitish colour of whipworm**

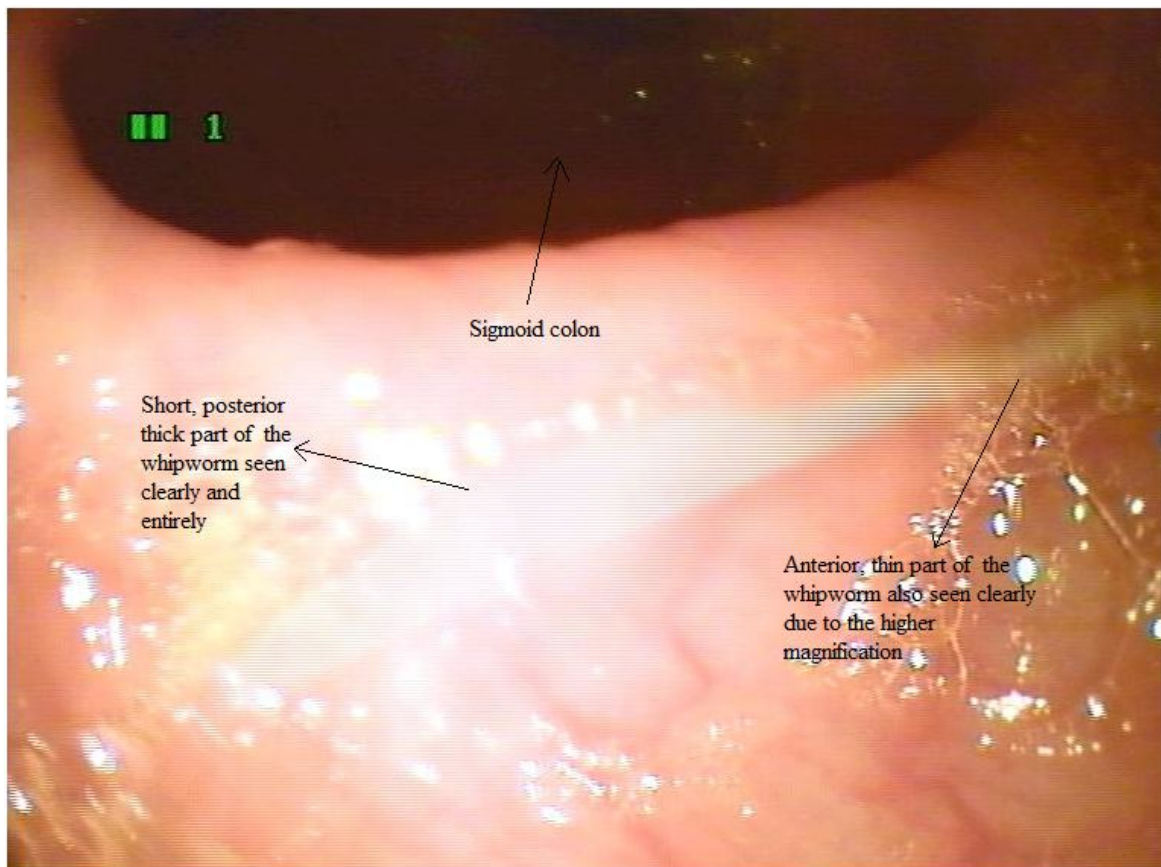
The male whipworm is 3to 4.5cm and the female whipworm is 3.5 to 5cm in length (11) Whipworms do not feed on blood and feeds only on the tissue secretions of the large intestinal wall. Whipworm is always whitish in colour as it does not feed on blood (fig 1, 2).

**4.5 Only a very small portion of the long anterior part of whipworm seen during colonoscopy**

We can see only the short posterior thick part of whipworm entirely in the lumen of the large intestine (13,14) but only a very small portion of the long, thin anterior part while doing colonoscopy since most of the anterior part penetrates into the large intestinal wall in order to feed on the tissue secretions of the large intestinal wall (13,14). Hence in fig 1, we can see only the short posterior thick part of the whitish coloured whipworm entirely in the lumen of the sigmoid colon but only a very small portion of the long, thin anterior part since most of the anterior part penetrates into the large intestinal wall for feeding purpose. But in the highly magnified view in fig 2, we can see clearly both the short posterior thick part and also the anterior thin part clearly due to the higher magnification.



**Fig 1:** Showing clearly and entirely only the short, posterior thick part of the whitish coloured whipworm and only a very small portion of the long, thin anterior part since the anterior part penetrates into the large intestinal wall for feeding purpose.



**Fig 2:** Magnified view showing clearly both the short, posterior thick part and also the anterior, thin part of the whipworm due to the higher magnification.

## 5. Conclusion

1. Whipworms are the most common nematodes or roundworms found in the large intestine of human beings while doing colonoscopy.
2. Our study and also some other studies have shown only a single whipworm in the colon while doing colonoscopy which represents the least load of whipworms and mild whipworm infection in these fortunate patients.
3. However other studies have shown multiple whipworms in the colon while doing colonoscopy which represent increased load of whipworms and severe whipworm infection in these patients.

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