Trichuriasis (Whipworm)

Trichuriasis is a parasitic disease caused by infection of the large intestine by *Trichuris trichiura* (also known as the human whipworm), which is an intestinal parasitic nematode. Adult whipworms mainly live in the caecum, but can be seen throughout the colon and rectum. The three main soil-transmitted helminth infections are ascariasis, trichuriasis, and hookworm. Children living in poverty in developing countries are often infected by at least one and, in many cases, all three soil-transmitted helminths.\[1\]

**Life cycle\[2\]**
- Eggs are passed with the faeces. The eggs develop in soil and become infective after 15 to 30 days.
- Humans are the only known host. After ingestion via soil-contaminated hands or food, the eggs hatch in the small intestine and release larvae that mature into adults. The adults attach to the wall of the caecum and the ascending colon.
- The female adult worm starts to produce eggs 60 to 70 days after infection, and sheds between 3,000 and 20,000 eggs per day.
- The adult worm usually reaches 3-5 cm in length and has a lifespan of 1-3 years.

**Epidemiology**
- Trichuriasis is common worldwide (the third most common roundworm parasite of humans).
- The most affected regions are rural areas with poor sanitation and tropical climates, including Southeast Asia, Africa, the Caribbean, and Central and South America. Prevalence rates are as high as 80% in these regions.\[1\]
- The main risk factor for infection is ingestion of eggs from soil contaminated with faeces.
- Trichuriasis mainly affects children, who may become infected if they ingest soil contaminated with whipworm eggs.

**Presentation**
- Mild infections (fewer than 100 worms) are often asymptomatic but may present with lower abdominal discomfort, flatulence, and diarrhoea or constipation.\[3\]
- Inflammation at the site of attachment from large numbers of whipworms results in colitis, presenting with bloody diarrhoea, abdominal pain, iron-deficiency anaemia and, in severe infestations, rectal prolapse.
- Long-standing colitis resembles inflammatory bowel disease, including chronic abdominal pain and diarrhoea, as well as impaired growth, anaemia of chronic disease, and finger clubbing.

**Investigations\[2\]**
- Stool examined for ova and parasites reveals the presence of typical whipworm eggs. Eggs may be difficult to find in light infections.
- FBC: often shows eosinophilia and, rarely, anaemia.\[4\]
- Examination of the rectal mucosa by proctoscopy can occasionally demonstrate adult worms.

**Management**
- Oral treatment with mebendazole for three days is often used in symptomatic infections.
- Albendazole is an alternative for treatment.
Complications

- Rectal prolapse.
- Malnutrition.
- Heavy infections may cause anaemia.
- Prolonged infections may lead to growth and developmental delay in children.

Prognosis

Full recovery is expected with treatment.

Prevention

- Improved facilities for disposal of faeces have decreased the incidence of whipworm.
- Hand washing before food handling, and avoiding ingestion of soil by thorough washing of food that may have been contaminated with egg-containing soil.

Further reading & references

- Parasites A-Z; Centers for Disease Control and Prevention
- Stepphenson LS, Holland CV, Cooper ES; The public health significance of Trichurus trichiura. Parasitology. 2000;121 Suppl:S73-95.

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Peer Reviewer:
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Document ID:
13563 (v2)

Last Checked:
06/11/2014

Next Review:
05/11/2019

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