Enterobius vermicularis

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The pinworms are one of the most common intestinal nematodes. The adult worms inhabit the cecum and colon. Right after mating, the male dies. Therefore, the male worms are rarely seen. The female worms migrate out the anus depositing eggs on the perianal skin. Humans get this infection by mouth and by autoinfection.
Morphology

1. Adults: The adults look like a pin and are white in color. The female worm measures about 8 to 13 mm in size and is fusiform in shape. The male adult is only 2-5mm. The tail of a male is curved. The anterior end tapers and is flanked on each side by cuticular extensions called “cephalic alae”. The esophagus is slender, terminating in a prominent posterior bulb, which is called esophageal bulb. The cephalic alae and esophageal bulb are important in identification of the species.

2. Egg: 50 to 60m by 25 μm, colorless and transparent, thick and asymmetric shell, content is a larva.
MALE WORM:

- Posterior end is curved
- Copulatory spicule
- Length : 2-5 mm
- Thickness : 0.1- 0.2 mm
- Life span : 7 weeks

Enterobius vermicularis © 2004 Chris P. Alipio
Anterior part of *E. vermicularis*. Note cephalic alae and esophageal bulb.
FEMALE WORM:

- Thin, pointed, pin like tail
- Reproductive organs
  - T shaped
  - paired

Length : 8 - 13 mm
Thickness: 0.3 - 0.5 mm
Life Cycle

1. site of inhabitation: cecum and colon
2. infective stage: embryonated egg
3. infective route: by mouth
4. without intermediate host and reservoir host
5. life span of female adults: 1-2 months
Embryonated eggs ingested by human

1️⃣ Eggs on perianal folds
   Larvae inside the eggs mature within 4 to 6 hours.

2️⃣ Larvae hatch in small intestine

3️⃣ Adults in lumen of cecum

4️⃣ Gravid female migrates to perianal region at night to lay eggs.

iad = Infective Stage
idd = Diagnostic Stage
Symptomatology

About one-third of pinworm-infected persons are asymptomatic, the adult worms may cause slight irritation of the intestinal mucosa.

**Major symptom is anal pruritus**, which associates with the nocturnal migration of the gravid females from the anus and deposition of eggs in the perianal folds of the skin. Restlessness, nervousness, and irritability, probably resulting from poor sleep associated with anal pruritus,. In young girls, migration of the worms may produce vaginitis and salpingitis or granuloma of the peritoneal cavity.
Diagnosis

Diagnosis depends on recovery of the characteristic eggs. The eggs and the female adults can be removed from the folds of the skin in the perianal regions by the use of the cellophane tape method. The examination should be made in the morning, before the patient has washed or defecated.
Treatment and prevention

Since the life span of the pinworm is less than two months, the major problem is reinfection. **Albendazole** is the drug of choice. Repeated retreatment may be necessary for a radical cure.

Prevention: 1. treat the patients and carriers 2. individual health 3. public health 4. health education and hygienic habits

**VI. Epidemiology**

Geographical distribution—cosmopolitan in temperate zones with about 30 to 50% of the population infected. It is more common in white than colored people and more prevalent in children than adults. Enterobiasis is most common where people live under crowded conditions such as orphanages, kindergartens, and large families.
THANK YOU!