Notes

41

ENTROBIUS VERMICULARIS

41.1 INTRODUCTION

Entrobius vermicularis worm has a shape like a pin and so is also called as pin worm or thread worm. The worm was first seen by Leuckart in 1865 A.D. The pin worm infections are seen all over the world. The worm is present in the appendix and ceacum. The anterior end of the worm attaches to the mucosa.

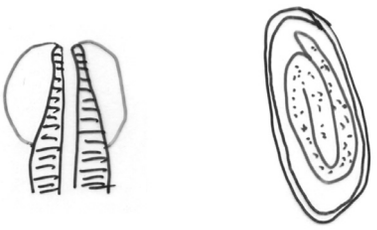
OBJECTIVES

After reading this lesson, you will be able to:

- describe the morphology of pin worm
- explain the life cycle of pin worm
- discuss the pathogenecity of pin worm
- explain the laboratory diagnosis of pin worm

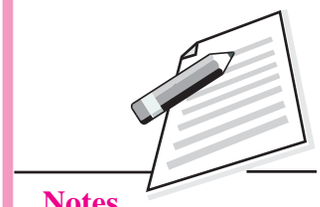
41.2 MORPHOLOGY

The worm is finely striated. The anterior end lacks buccal capsule. It has three lips with a dorso-ventral bladder like expansion of the culticle.



Anterior end Ova

Fig. 41.1



Entrobius vermicularis

Male

- Measure 2-4 mm x 0.1 – 0.2 mm
- The posterior end of the esophagus is dilated.
- Posterior end is curved and is truncated
- There is a sharply curved terminal spicule
- It possesses a single tubular testis
- The male dies after fertilization

Female

- Measure 8-12 mm × 0.3-0.5 mm
- Looks like a pin
- The reproductive organs are paired and T shaped
- The vulva opens mid-ventrally
- The worm is oviparous

Ova

- The ova measure 50-60 µm × 30 µm
- It has a unique shape which is plano-convex
- It is non bile stained and thus appears colourless
- The ova is surrounded by a transparent shell having two layers of chitin
- It contains a tadpole like larva
- It floats on saturated salt solution
- It is coated on outside by albumin gel which assists in adherence to surfaces.
- The ovum requires six hours of exposure to oxygen containing air for it to become infective. This is the reason the worm lays the ova in the perianal region.
- The ova are resistant to commonly used antiseptics.

Life cycle

The gravid female lays the ova in the perianal region so that the ova are exposed to oxygen containing air. The ova become infective in six hours time. The albuminous outer layer helps to adhere to the perianal mucosa. The infected person, mostly a child develops severe itching. The ova get lodged in the nail bed and are then ingested through contact with the hands.

The larva hatches in the intestine. The larva reaches the ceacum and appendix where it matures into an adult worm.

Pathogenecity

There is severe pruritis. The patient may suffer from nocturnal enuresis. There may be abdominal pain and discomfort. Symptoms include anorexia (loss of appetite) and loss of weight. Some cases may suffer from appendicitis. Sometimes patient may suffer from some ectopic infections like salpingitis, omentitis, cervicitis, peritonitis and recurrent urinary tract infections.

Patient also develops eosinophilia.

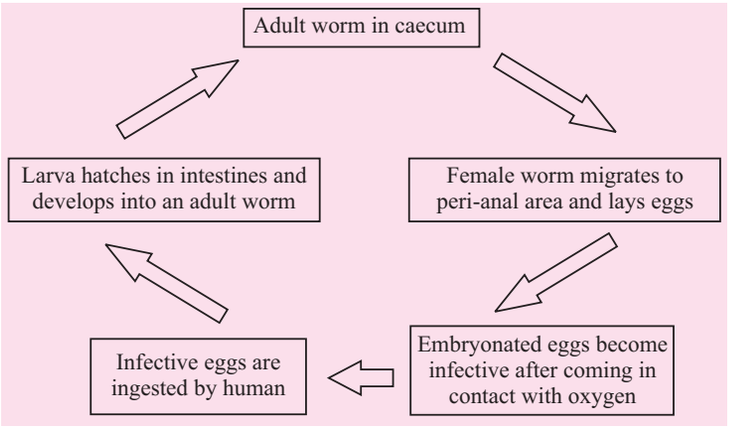


Fig. 41.2: Life cycle of Entrobius vermicularis

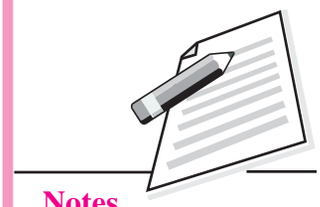
Laboratory diagnosis

The demonstration of ova in the stools or detection of adult worm establishes the laboratory diagnosis. The ova may be obtained by using a cello tape or NIH swab (National Institute of Health) in the peri - anal area

Eosinophilia may be seen the infected hosts.

INTEXT QUESTIONS 41.1

1. Pinworm is also known as .....
2. The shape of the ova is .....
3. The ovum requires ..... for it to be infective
4. The worm lays ova in the ..... region of the body
5. The ova for laboratory diagnosis may be obtained by .....



WHAT HAVE YOU LEARNT

- Entrobius vermicularis worm has a shape like a pin and so is called as pin worm or thread worm
- The worm is finely striated. The anterior end lacks buccal capsule. It has three lips with a dorso-ventral bladder like expansion of the culticle.
- Pin worm causes severe pruritis and suffer from nocturnal enuresis. There may be abdominal pain and discomfort.
- Demonstration of ova in the stools or detection of adult worm established the laboratory diagnosis and the ova may be obtained by using a cello tape or NIH swab in the peri –anal area.

TERMINAL QUESTIONS

1. Discuss the morphology and pathogenecity of E vermicularis.
2. Discuss the life cycle of E vermicularis.
3. Draw a labeled diagram of ova of E vermicularis.

ANSWERS TO INTEXT QUESTIONS

41.1

1. Entrobius vermicularis
2. Plano-convex
3. Oxygen
4. Perianal
5. Cello tape or NIH swab