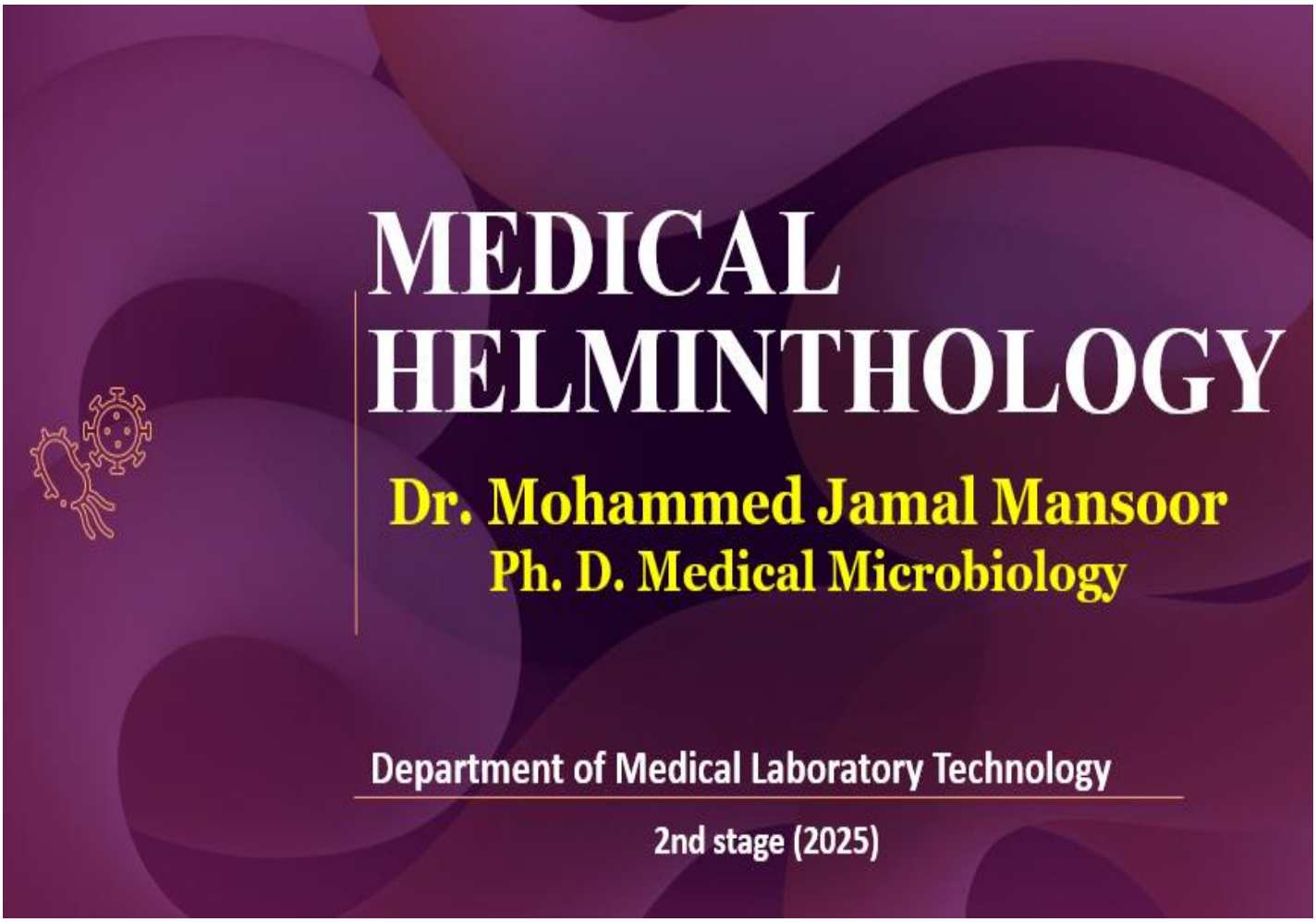
MEDICAL
HELMINTHOLOGY
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2nd stage (2025)

Medical Helminthology – 2nd stage (2025)
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Lec.10 *Strongyloides stercoralis*

*The female worm is thin, about **2.5 mm** long and, the male is shorter and broader.*

The worm is **ovoviviparous**, the eggs laid in the mucosa hatch immediately, releasing rhabditiform **(first stage)** larvae.

➢ The rhabditiform larvae migrate into the lumen and pass down the gut to be released in feces. When reaching the soil, they **moult twice** to become the **infective filariform (third stage) larvae**.

The filariform larvae are slender, its nonfeeding and can live in soil only for about 12 days.

The life cycle of *S. stercoralis* is a **complex**, it is unique among human nematodes in that it has, in addition to the **parasitic cycle**, a **free-living soil cycle**, in which it can persist for long periods in soil, feeding on soil bacteria.

A- Parasitic Phase

1- Direct development

- *The adult worm is found in the human intestine in the mucosa of the **duodenum and jejunum**.*
- ***Only the female worms are seen in the intestine.** It was believed that they are* parthenogenetic and can produce offspring without being fertilized by the male. But it has since been established that parasitic males do exist. They are not seen in human infections because they do not invade the intestinal wall, However, the majority of females are probably parthenogenetic.
- When a **person walks barefoot in soil**, the **infective filariform larvae** will penetrate the **skin**, enter blood vessels and are carried along the venous circulation to the **right side of the heart and to the lungs**. **Here migrate up the respiratory tract to the pharynx and are swallowed, reaching their final destination, the duodenum and jejunum**, **mature in 15-20 days and start laying eggs.**

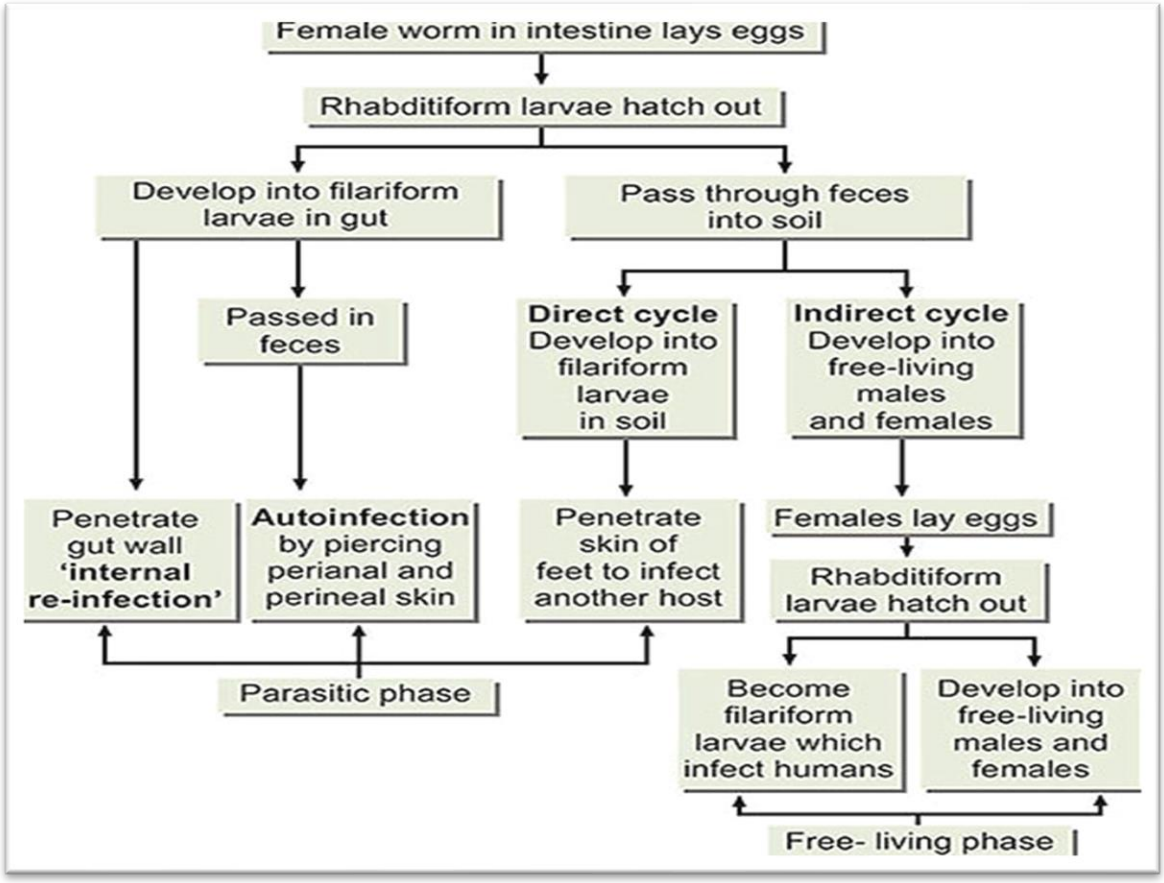
2-Autoinfection

*The worm also has a cycle of **autoinfection**. Here the rhabditiform larvae mature into the infective third stage larvae during their passage down the gut. These filariform larvae cause reinfection.*

- **The larvae wander in the dermis of the perianal region for some time, causing a radiating perianal creeping eruption, a form of cutaneous larva migrans.**
- **They ultimately (Finally). enter the lymphatics or venules and are carried to the right heart and the lungs to complete the life cycle as above. This ability to cause autoinfection explains the persistence of the infection in patients for long periods, even 30 to 40 years.**

B- Free-living Phase

- *The rhabditiform larvae passed in stools develop in moist soil into free-living males and females.*
- *They **mate** in soil. **The fertilized female lays eggs which hatch to release the next generation of rhabditiform larvae.** These may repeat the free-living cycle, or may develop into the filariform larvae which infect humans and initiate the parasitic phase.*



Pathogenesis and Clinical Features

Strongyloidosis

The clinical disease may be classified as **cutaneous**, **pulmonary** and **intestinal**

Cutaneous

- **Dermatitis**, with **erythema**, **itching**, **larva currens (Fast migration)** and **haemorrhages** at the site of penetration of the filariform larvae, when large numbers of larvae enter the skin.

Pulmonary

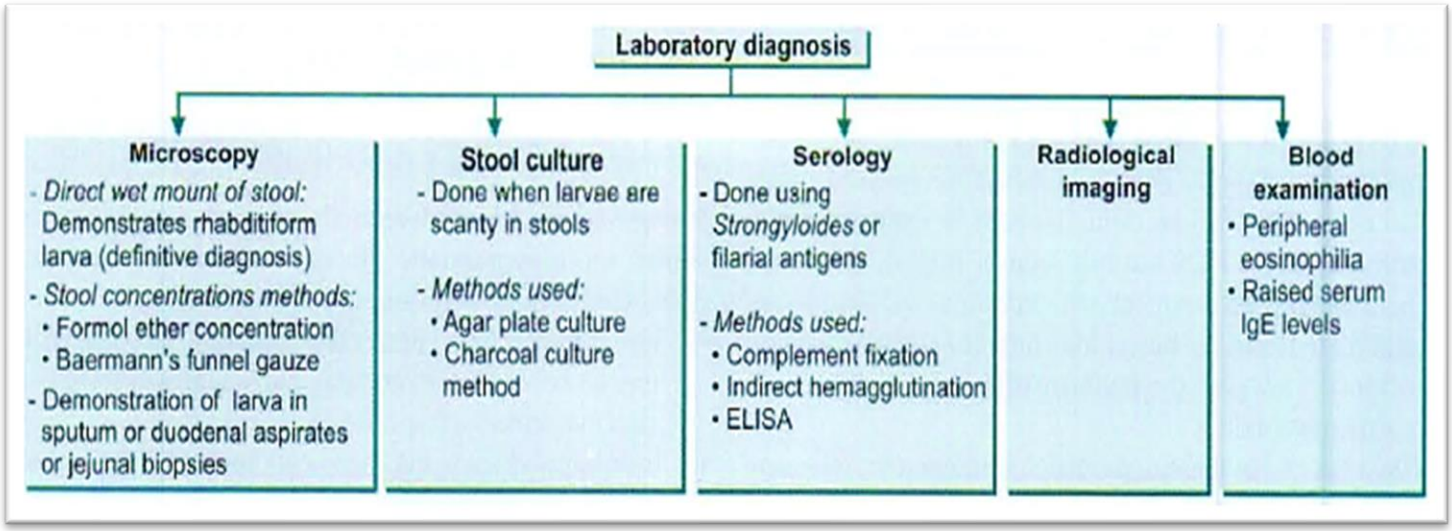
- During escape of the larvae from the pulmonary capillaries into the alveoli, small hemorrhages occur, along with cellular infiltration into alveoli and bronchioles.

Intestinal

- **Mucus diarrhea** is often present. **In heavy infection**, the mucosa may be filled with the worm and there may be **extensive sloughing**, causing **dysenteric stools**.

Diagnosis

- ***Demonstration of the rhabditiform larvae in freshly passed stools***, larva may sometimes be present in sputum and gastric aspirates.
- ***Stool culture when larvae are scanty in stools.***
- ***Serological tests have been described, using strongyloides or filarial antigens.*** complement fixation, indirect haemagglutination and ELISA.
- ***Radiological*** appearances in intestinal infection are said to be characteristic and helpful in diagnosis.



Treatment:

Ivermectin

Albendazole

Important Questions

Q: Larvae form of *Strongyloides stercoralis* in human is found in the

ⓐ Lung
ⓑ Stomach
ⓒ Spleen
ⓓ Intestine

Q: What is the approximate length of a female *Strongyloides stercoralis* worm?

ⓐ 1 mm
ⓑ 2.5 mm
ⓒ 5 mm
ⓓ 10 mm

Q: What is the lifespan of infective filariform larvae of *Strongyloides stercoralis* in soil?

ⓐ 1 day
ⓑ 5 days
ⓒ 12 days
ⓓ 30 days

Q: Where in the human intestine are adult *Strongyloides stercoralis* worms typically found?

ⓐ Mucosa of the colon
ⓑ Mucosa of the duodenum & jejunum
ⓒ Lumen of the stomach
ⓓ Submucosa of the rectum

Q: How do infective filariform larvae of *Strongyloides stercoralis* typically enter the human body?

ⓐ Ingestion of contaminated food or water
ⓑ Penetration through the skin while walking barefoot on soil
ⓒ Inhalation of contaminated air
ⓓ Direct contact with infected animals

Q: What is the process known as autoinfection in *Strongyloides stercoralis* infection?

ⓐ External contamination leading to infection
ⓑ Larvae entering the body through ingestion
ⓒ Reinfection caused by larvae maturing within the gut
ⓓ Spread of infection to neighboring individuals

Q:Which region of the body may exhibit a radiating perianal creeping eruption in *Strongyloides stercoralis* infection?

ⓐ Scalp
ⓑ Abdomen
ⓒ Perianal area
ⓓ Lower limbs

Q: What is a common clinical manifestation of cutaneous strongyloidiasis?

ⓐ Mucus diarrhea
ⓑ Respiratory distress
ⓒ Dermatitis with erythema & itching
ⓓ Hepatic enlargement

Q: What is the term used to describe the characteristic skin lesion caused by *Strongyloides stercoralis* larvae?

ⓐ Loeffler syndrome
ⓑ Creeping eruption
ⓒ Larva currens
ⓓ Nodular rash

Q: What clinical sign is commonly observed in intestinal strongyloidiasis?

ⓐ Mucus diarrhea
ⓑ Hematuria
ⓒ Jaundice
ⓓ Seizures

Q: What type of serological tests can be used for diagnosing *Strongyloides stercoralis* infection?

ⓐ Urine antigen tests
ⓑ Complement fixation tests
ⓒ Electrocardiograms (ECGs)
ⓓ Ultrasound imaging