

MEDICAL PARASITOLOGY

Definitions and Concepts

Medical parasitology

2023-2024

LAB(3)

Protozoa

Phylum: Sarcomastigophora

Subphylum: Mastigophora (Flagallata)

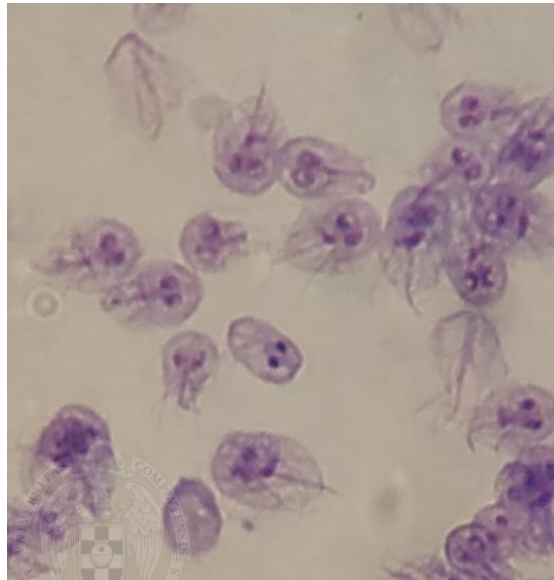
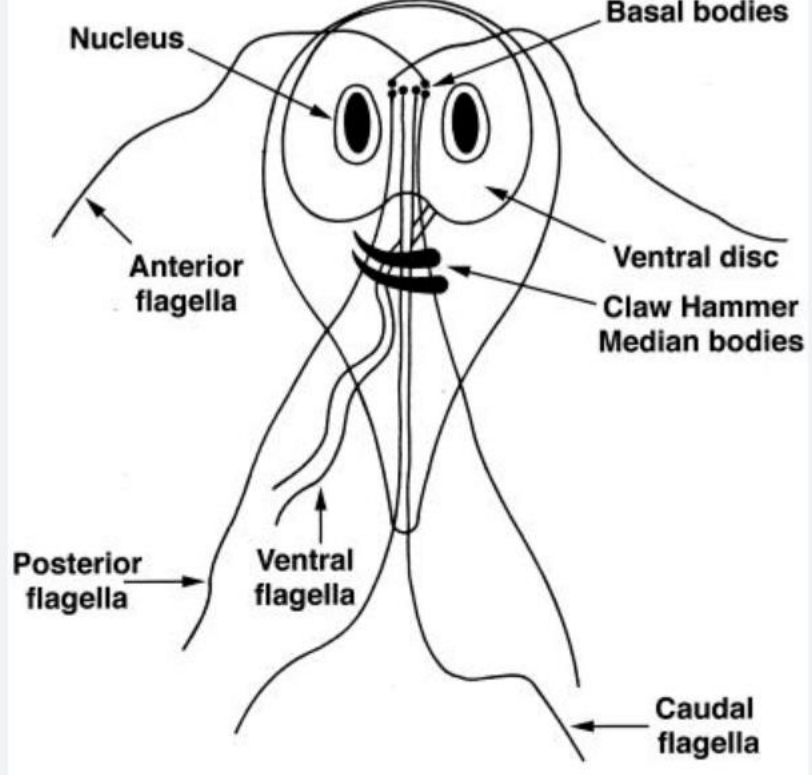
Class: Zooflagellata (Intestinal and genital flagellates)

Example-1- *Giardia lamblia*

Giardia lamblia is a cosmopolitan parasite, more prevalent in children than adults and more common in warm than cool climates. It is a pathogenic parasite that causes a disease called **Giardiasis, Lambliasis**. The habitat of this parasite is the duodenum and the upper part of the jejunum of man. It exists in two forms:-

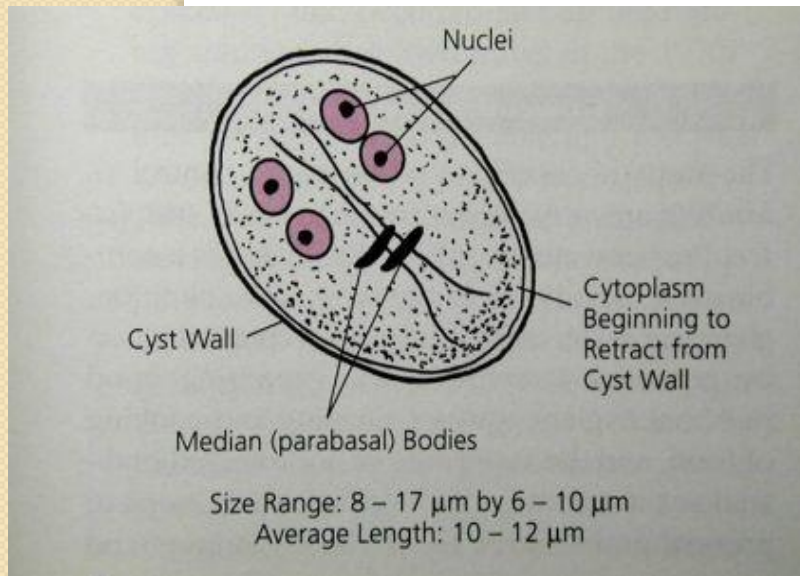
- Trophozoite :-

This stage is bilaterally symmetrical, pear shaped with a broad, rounded anterior end and a tapering posterior end. Dorsally it is convex and ventrally concave forming sucking discs; it acts as an organelle of attachment. The pair of nuclei are on each side of the midline with a central karyosome, one pair of axostyles, one pair of deeply staining curved bars (parabasal bodies). Four pairs of flagella arise from blepharoplasts on the ventral side of the body (2 anterior, 2 posterior, 2 caudal and 2 ventral).



Cyst:-

It is oval in shape, the mature cyst contains 4 nuclei which may remain clustered at one end or lying in pairs at opposite ends and also shows the axostyle. The remains of the flagella and margins of the sucking discs may be seen inside the cytoplasm of the cyst.



- **Transmission :-**

Transmission of this parasite occurred by viable cysts that are swallowed through contaminated food and drink.

- **Pathology :-**

This parasite not invades the tissues but feed on the mucus secretions. In acute infection there is duodenal irritation with excess secretion of mucus and dehydration, accompanied by dull epigastric pain and chronic diarrhea with a steatorrheic type of stool (fatty or oily diarrhea) containing a large amount of mucus and fat but no blood.

- **Diagnosis :-**

Examination of stool by direct smear (General Stool Examination GSE) to recovery trophozoites and or cysts stages, in addition to Duodenal aspiration.

Example-2- *Trichomonas*

Genus *Trichomonas* contains three species which occur in humans:-

- *Trichomonas tenax*

It is a harmless commensal of the human mouth, living in the tartar around the teeth

- *Trichomonas hominis*

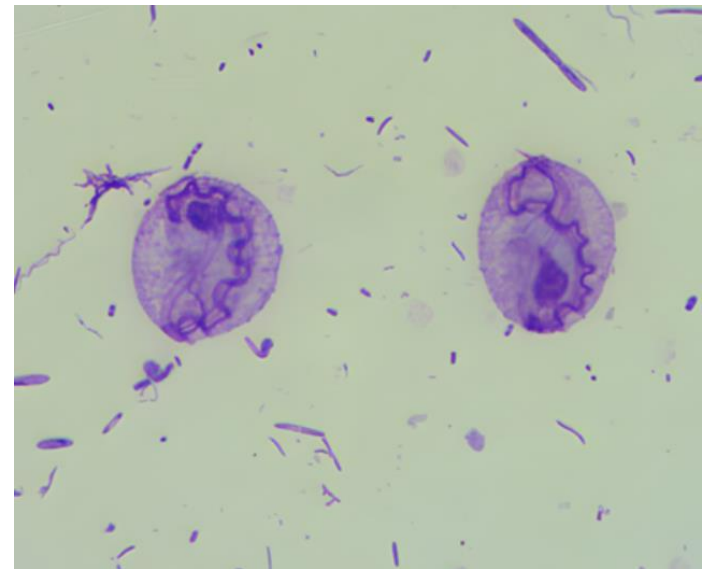
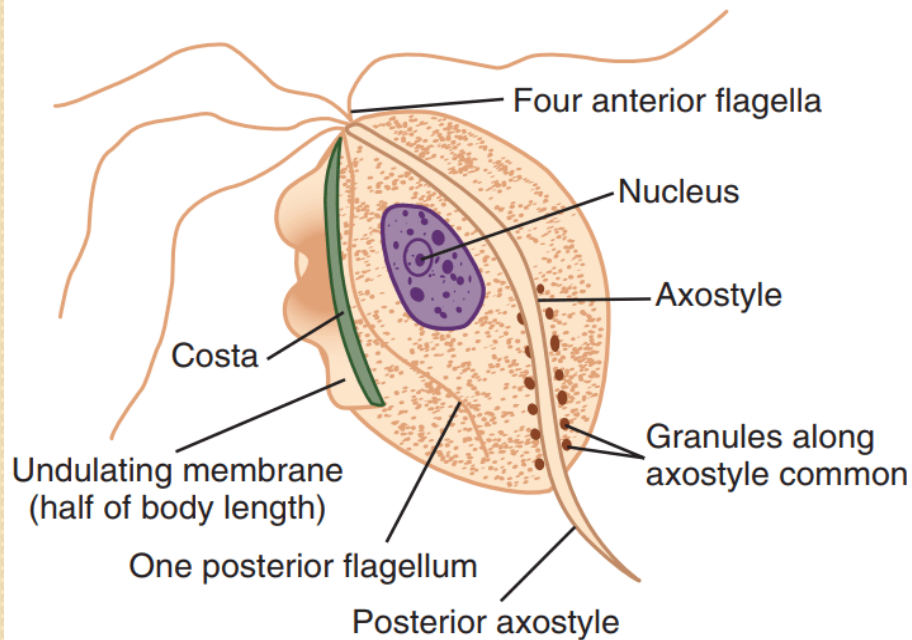
It inhabits the caecum of man, this parasite does not invade the intestinal mucosa.

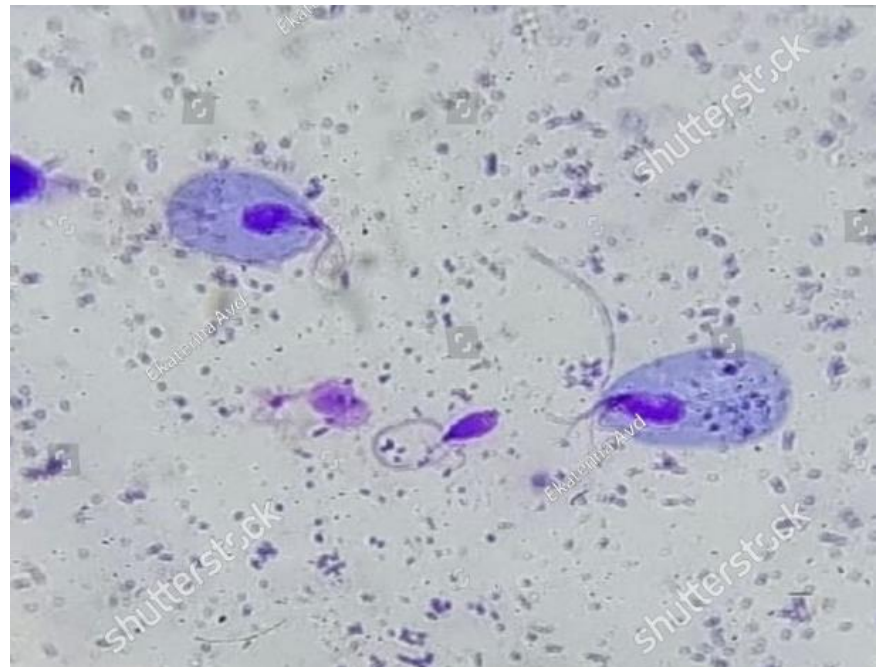
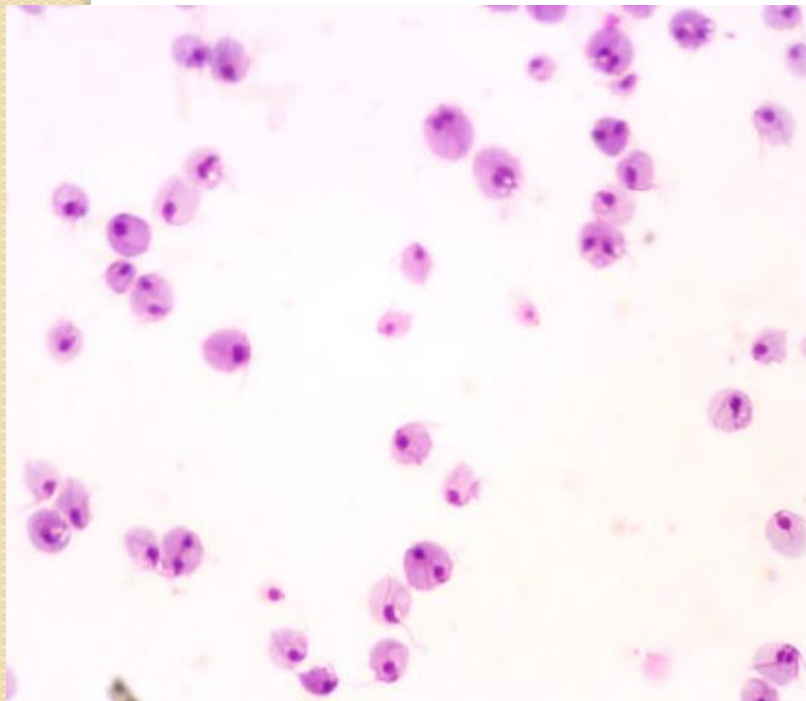
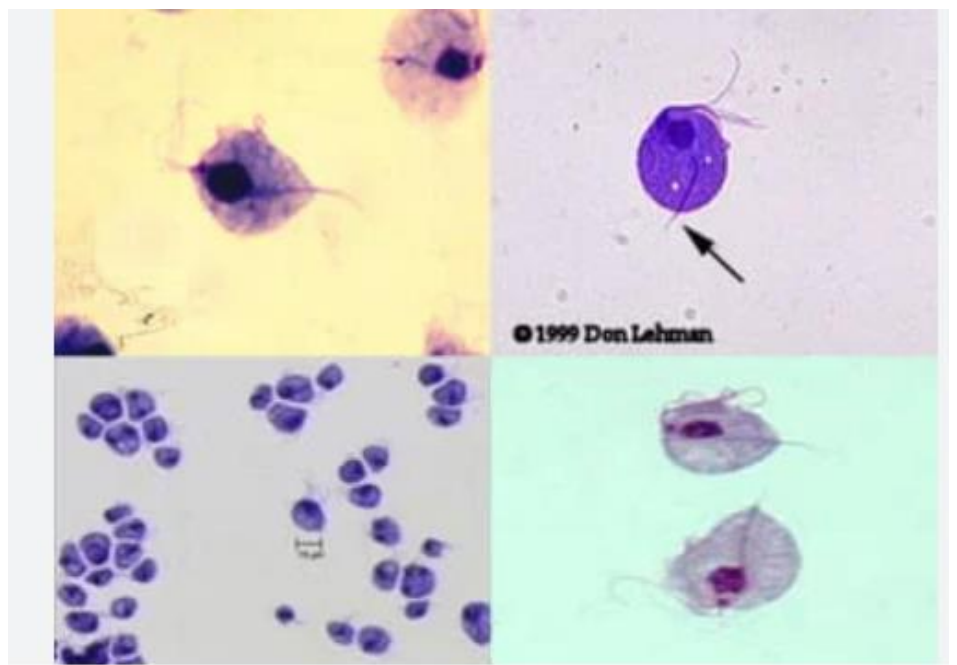
- *Trichomonas vaginalis*

This parasite is pathogenic cause disease called **Trichomoniasis** (**Trichomonad vaginitis, Urithritis**). The normal habitat of the parasite is human vagina, prostate and urinary tract of both males and females. The organisms feed on the mucosal surface of the vagina, ingesting bacteria and leucocytes. It is present only in the trophozoite stage.

- **Trophozoite :-**

It is a pyriform flagellate, the undulating membrane which is half of the body length. This stage has four free anterior flagella of approximately equal-length and fifth one on the margin of undulating membrane. It has large nucleus ovoid in shape with few chromatin granules. The axostyle extends from the anterior to posterior end and there extends as posterior flagellum. There is a parabasal fiber and Costa (chromatic basal rod) of the same length as the undulating membrane.





- **Pathology :-**

The parasite prefers a medium slightly alkaline or somewhat more acid than that of the healthy vagina (PH of healthy vagina is 3.8 – 4.4). During the infection of vagina, the vaginal walls become injected and tender with hemorrhage sometimes. In advanced cases there are granular areas. Patients present signs of vaginal and cervical inflammation, complain of itching and burning and have profuse leukorrheic discharge (a whitish or yellowish discharge of mucus from the vagina)

- **Diagnosis :-** In female, the microscopic examination of sedimented urine, vaginal discharge and vaginal scrapings, while in male, Microscopic examination of urine, prostatic secretions.



THANK
YOU