

Tikrit University

College of Nursing

Basic Nursing Sciences



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Microbiology

Balantidium coli

By: lecturer

Dr. Huda Dhamin Abd Al-jabar

Phylum: Ciliophora

Balantidium coli

Taxonomical classification of Balantidium coli

Kingdom: Eukaryota

Subkingdom: Protozoa

Phylum: Ciliophora

Class: Litostomatea

Order: Vestibuliferida

Family: Balantiididae

Genus: Balantidium

Species: coli

Causes: Balantidiasis, balantidial dysentery

Affects man and Pigs are reservoir hosts.

- **Habitat** : large intestine esp. the caecum. Lives in the lumen, mucosa and submucosa of the large intestine.

- **Infective stage** : the cyst.

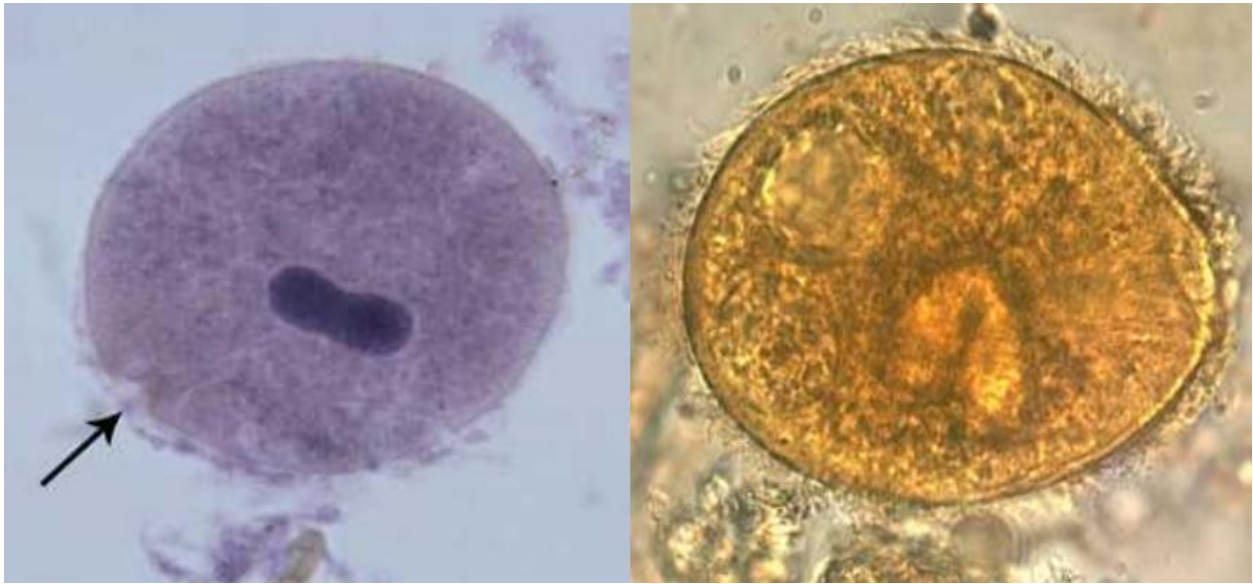
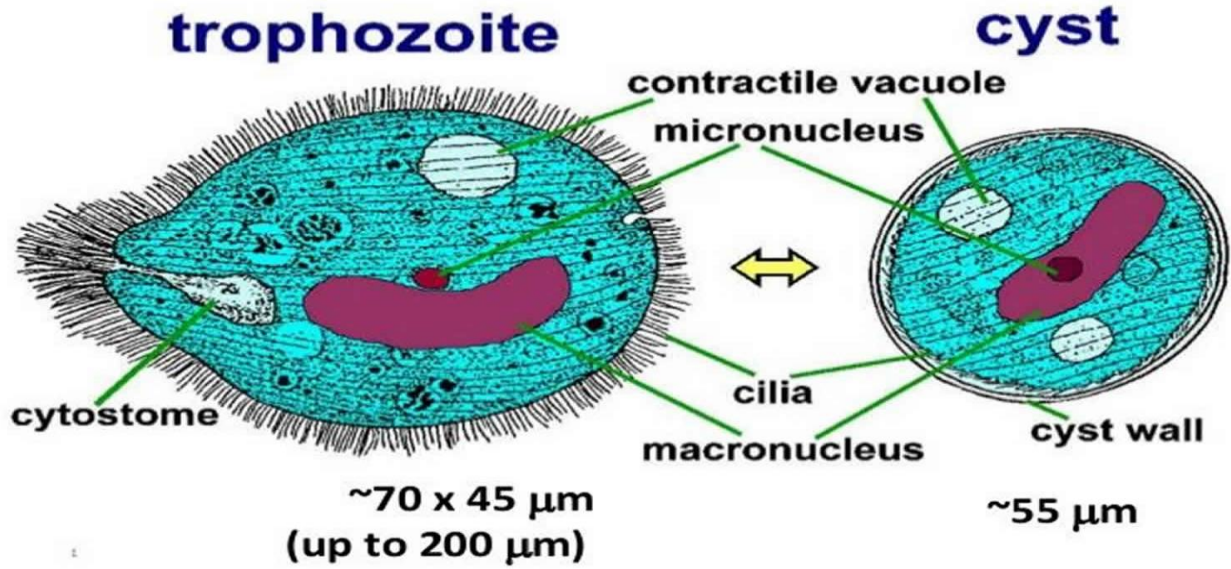
- Trophozoites invade and multiply in the intestinal wall

Mode of infection : ingestion of cyst in contaminated food or water.

Flies and food handlers. Heteroinfection

Faeco-oral. Autoinfection.

Balantidium coli



Form nests and necrotic ulcers of the large intestine

Pathogenesis

Trophozoites invade mucosa by: -

-hyaluronidase enzyme.

- boring action of cilia.

- Formation of flask-shaped ulcer.
- Secondary bacterial infection.
- Symptoms of dysentery.

Complications:

- Haemorrhage.

- Perforation.

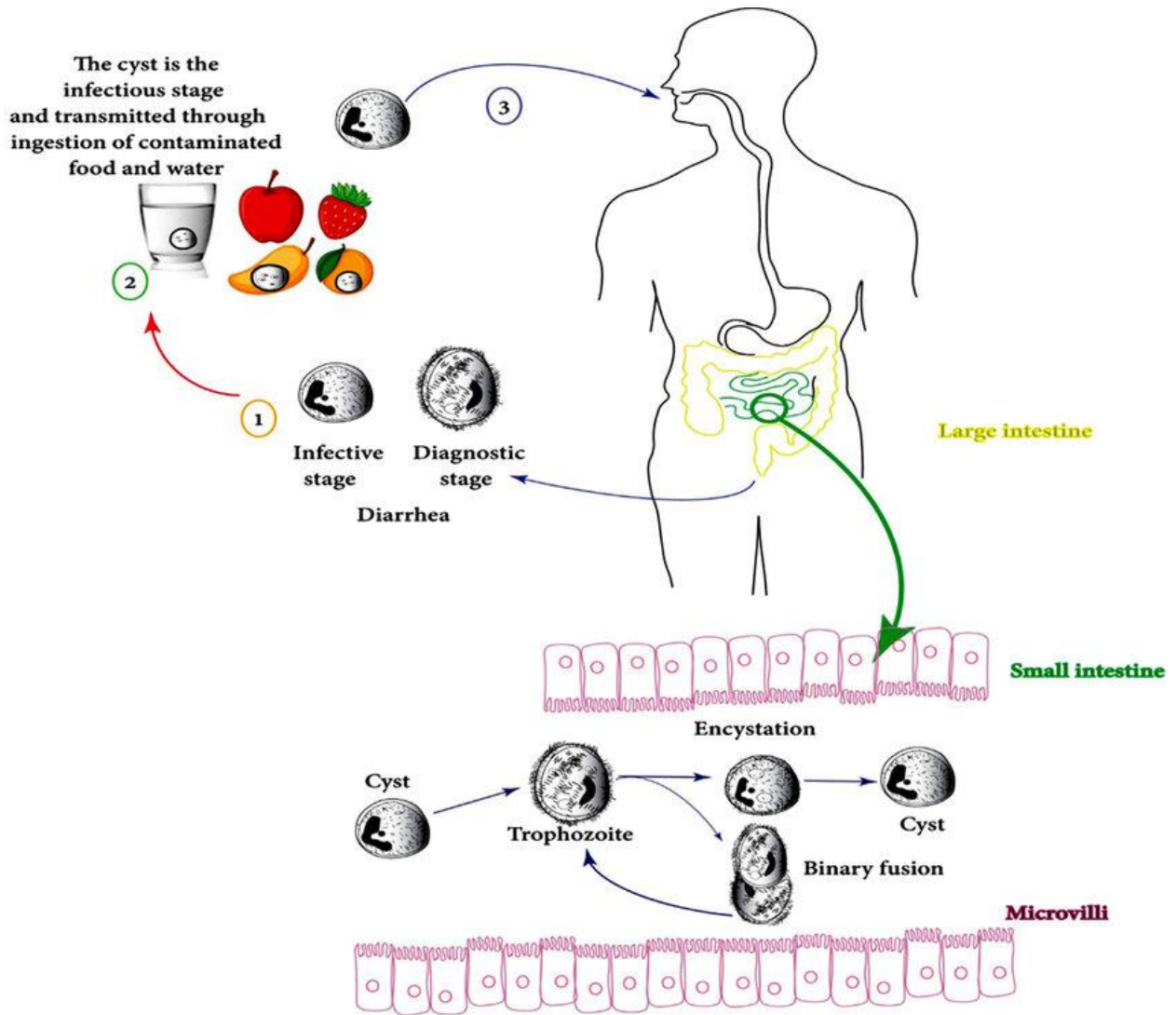
- Peritonitis.

- Appendicitis.

Balantidium coli life cycle:

Life Cycle of *Balantidium coli* The cyst is the infective stage of *Balantidium coli*. Once the cyst is ingested via feces-contaminated food or water, it passes through the host digestive system. The tough cyst wall allows the cysts to resist the acidic environment of the stomach and the basic environment of the small intestine until it reaches the large intestine. There, excystation takes place. Excystation produces a trophozoite from the cyst stage. The motile trophozoite feeds on intestinal bacterial flora and intestinal nutrients. Trophozoites multiply by asexual binary fission or sexual conjugation. The trophozoite may become invasive and penetrate the mucosa of the large intestine. Trophozoites are released with the feces, and encyst

to form new cysts. Encystation takes place in the rectum of the host as feces are dehydrated or soon after the feces have been excreted.



The infective stage is cyst while the diagnostic stage is cyst and trophozoite.

Man is accidental host.

Pigs is the natural host.

Usually only the macronucleus and sometimes cilia and contractile vacuoles are visible in the cyst.

*B. coli also has ability to penetrate the mucosa resulting in ulceration and cause Extra-intestinal disease but rarely.

Diagnosis:

Stool examination several times.

Treatment:

Metronidazole OR Oxytetracycline