The Ciliophora

Members of this class are all relatively large in size.

1-They are covered by short hair like organelles called cilia, which give the organism its motility.

2-They have 2 nuclei, one somatic (kidney) (large one), and one germinal (smaller one).

3-Reproduction is by binary fission and conjugation. Conjugation occurs when nuclear material is exchanged between parasites.

4-The only ciliate that is pathogenic to human is *Balantidium coli*.

*Balantidium coli*

- Is the largest and probably least common protozoan pathogenic of humans.

- It inhabits the large intestine (ileo-caecal region).
- It has both trophozoite (large size) and cyst (smaller) and have characteristic cilia, in the anterior end of the trophozoite there is a cytostome (mouth), posteriorly there is an execratory opening which represent the cytopyle (anus).

- It reproduced by binary fission and conjugation

- There are 2 nuclei, macro and micronucleus, and 2 contractile vacuoles and food vacuoles.

- Infection is usually transmitted by the cyst (infective stage).

**Epidemiology**

- The parasite founds in northern and southern hemisphers.

- Prevelance is usually less than 1%.

- *B. coli* founds in pigs and monkeys. Swine appear to be the most important animal reservoir for human disease.

**Pathogenesis**

- The trophozoite is able to invade the distal ileal and colonic mucosa and produce intense mucosal inflammation and ulceration.

- The invading stage is trophozoite.

- The invasion is facilitated by the mechanical effect and hyaluronidase enzyme produced by the parasite.

- It cause non specific ulcer (round, oval or irregular in shape) and larger than flask shape ulcer, due to the larg size of the parasite.
- In *E. histolytica* the troph. is found in the lumen and invade by mechanical action and cytolytic enzyme and cause flask shape ulcer.

**Balantidium coli ulcer:**

1- Large.

2- Superficial (deep in fulminating cases).

3- Non-specific (round or oval).

4- Multiple ulcers.

**Clinical significance**

-The illness produced by *Balantidium coli* closely resemble amoebic colitis.

-The clinical presentation occurs in 3 forms :-

1- The asymptomatic carrier state, most commonly seen in persons in institutional care and accounting for up to 80% of all infections.

2- Acute colitis

3- Chronic colitis

-The acute form appeares as diarrhea with blood, nausea, abdominal discomfort and marked weight loss.

-A few cases of balanitidial appendicitis have been reported.
Lab Diagnosis

1-The large motile trophozoite is the predominant form of parasite excreted in feces (Direct microscopy).

2-Trophozoite may also be obtained from material from the margins of ulcers seen in rectum at proctosigmoidoscopy, when stool examination is negative in suspected case.

3- *B. coli* can be cultured in vitro.

Treatment

1-The commonly used treatments is tetracycline 500 mg/four times daily for 10 days.

2-Iodoquinol 650 mg/three times daily for 20 days usually effective.

3-Metronidazole has been reported to be useful.
cytophyge
Troph. of B. Coli

B. Coli cyst