Lab-3
Medical parasitology

Trichomonas

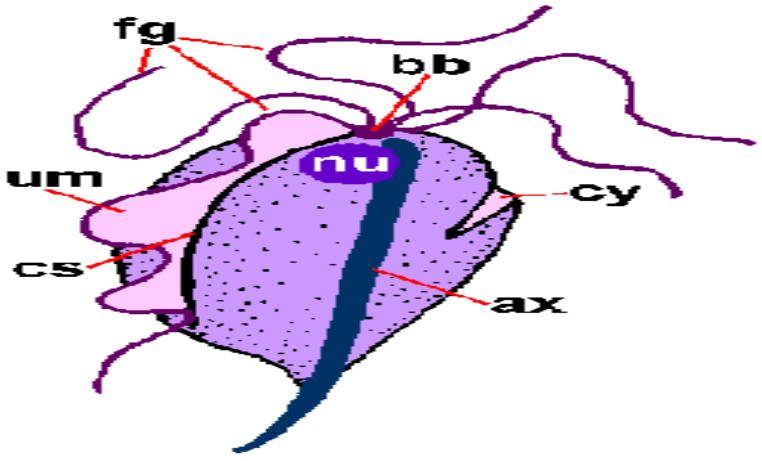
Trophozite is the only stage present in the life cycle, cystic stage absent. There are three species of *Trichomonas* found in humans (*T. vaginalis* ,*T. tenax* ,*T. hominis*).

**Trichomonas vaginalis

Trichomoniasis is a common sexually transmitted disease with a worldwide distribution and pathogenc cause Trichomoniasis . T. vaginalis despite it name, infect both men and women. In **females** it is found in the vagina and urethra. In **males** it is found in the urethra, prostate, seminal vesicles. T. vaginalis has no cystic stage.

Morphology of trophozoite

Trichomonas vaginalis is a pear-shaped trophozoite and Characteristic jerky motility, (7 to 23 µm long) with four anterior flagella and a fifth forming the outer edge of a short **undulating membrane** (1/2 of the body length**) . Costa** , a rigid cord attaches the undulating membrane to the cell membrane and *gives the undulating membrane support*. **Axostyle** runs down the middle of the body & ends in a pointed tail like barb. Round **nucleus** in the anterior Portion.



Fg=flagella bb=basal body Nu=nucleus Ax=axostyle
um=undulating membrane Cy=cytostomal groove Cs=costa

Laboratory Diagnosis

The diagnosis for this organism is commonly based on the examination of (Vaginal and Urethral discharge, Prostatic fluid, urine sediment , Semen) used:
-Wet mount (Easy, useful & economic , T. vaginalis of actively motile organism with jerky motility is diagnostic).
-Acridine orange stain (Rapid & accurate method, Sensitivity same as wet mount).

**Trichomonas hominis

This parasite produces trophozoites only, no cystic stage **.** parasite that lives in large intestine**,** transmitted by fecal-oral route **.** It is thought to be non-pathogenic although it has been associated with diarrhoeic stools. It is the most commonly found flagellate next to *Giardia lamblia* and *Dientamoeba fragilis.*

Morphology of trophozoite

The trophozoite measures from 5-15 µm in length by 7-10 µm in width. The shape is pyriform, Characteristic jerky motility and has an **axostyle** which runs from the nucleus down the centre of the body and extends from the end of the body. **undulating membrane** which extends the entire length of the body and projects from the body like a free flagellum. It has **4 free flagella** and a single **nucleus** at the anterior end.

Laboratory Diagnosis

In a fresh stool, the flagellates move very rapidly in a jerky, non-directional manner. The axostyle and undulating membrane are diagnostic. The flagellates are difficult to stain, however, the axostyle can be seen on a stained preparation and can be easily detected .

**Trichomonas tenax

This parasite produces trophozoites only, no cystic stage **.** *T. tenax* commonly found in the oral cavity of humans, dogs and cats. transmitted by kissing ,salivary droplets and fomites.

Morphology of trophozoite

This parasite Size range 5 to 14 µm long ,Shape Oval to pear ,Characteristic jerky motility .**Nuclei** One, vesicular filled with chromatin granules . **Flagella** Five total, all originating anteriorly : four extends anteriorly .One extends posteriorly .An **undulating membrane** that extends two thirds (2/3) of the body length . A thick **axosty**l runs along the entire body length, curving around the nucleus, and extends posteriorly beyond the body of the organism .a small anterior cytostomal groove is located opposite the undulating membrane.

Laboratory diagnosis

The specimen of choice for diagnosing *Trichomonas tenax* trophozoite is mouth scrapings. Microscopic examination of tonsillar crypts and pyorrheal pockets of patients suffering from *T. tenax* infections often yields the typical trophozoites.

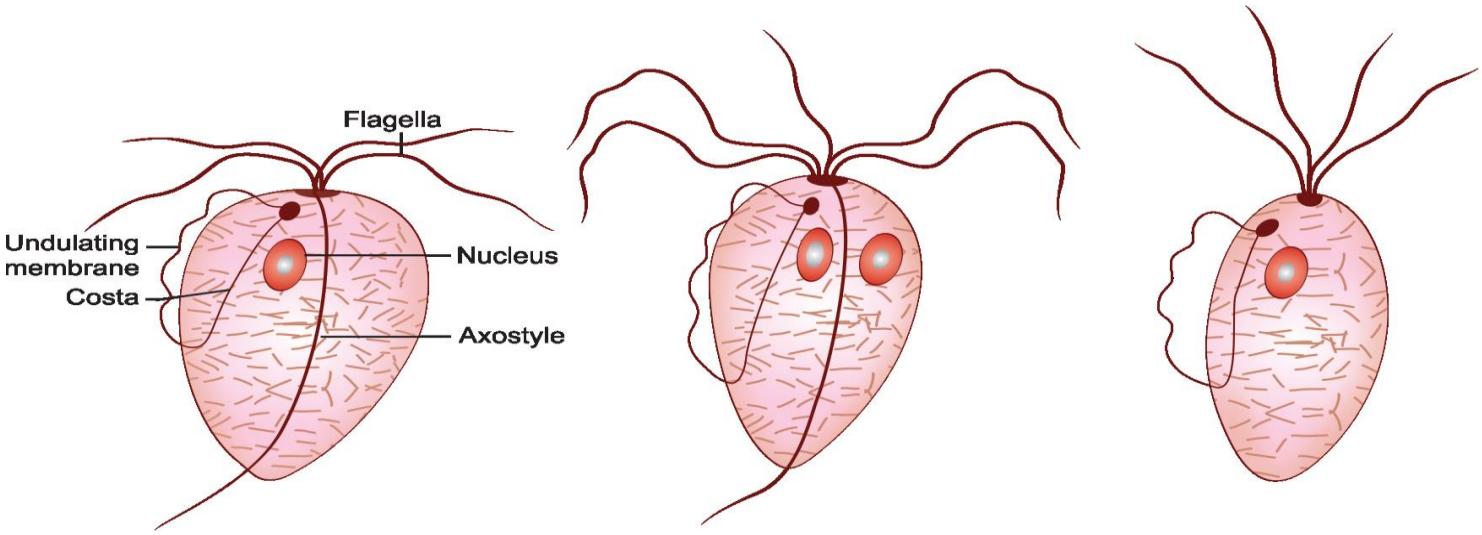


Fig: *Trichomonas* species. **A.** *T. vaginalis*; **B.** *T. hominis*; **C.** *T. tenax*