

LABARATORY DIAGNOSTICS OF TRICHOMONISIS DISEASE

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Abstract

Trichomoniasis of the urinary organs. Urinary tract infection with trichomonas (trichomoniasis) is one of the most common parasitic diseases. According to data, 180-200 mln. when a person suffers from this disease. Usually, the disease is observed in both men and women. According to the classification of diseases of the World Health Organization (Geneva, 1984), trichomoniasis is not included in the list of sexually transmitted diseases, but it is among sexually transmitted diseases such as chlamydia, ureaplasmosis, and gardnerella. The disease is caused by *Trichomonas vaginalis*. *Trichomonas vaginalis* was discovered by A. Donne in 1836[1,2,3]. It was considered safe for the body for almost 100 years. But in 1916, Henne discovered that trichomonas causes purulent colpitis in women.

Keywords

Trichomonas, urogenital, goiter, vagina, stick, gardnerella, ureaplasmosis, chlamydia, microorganisms, T.hominis.

INTRODUCTION

Trichomonads (*Trichomonas*) are the causative agents of trichomoniasis and include three types:

1. Intestinal trichomonad - *Trichomonas hominis*;
2. *Trichomonas vaginalis*;
3. Oral trichomonas - *Trichomonas tenax*.

Intestinal trichomonas is a parasite in the human colon.

Vaginal trichomonas is found in the urinary and genital tracts of women and men. The length is from 5-10 μm (intestinal trichomonad) to 15-30 μm (vaginal trichomonad). There is a spherical nucleus in the front part, and the blepharoplast lies in front of the nucleus. Like all representatives of the class of sticks, the movement organs of trichomonads include sticks. There are 4-5 gills, one of which is turned back along the wavy membrane. There are digestive vacuoles in the cytoplasm[4,5].

Along the body of Trichomonad, there is an axostyle, a longitudinal support core, along the edge of which lies a wavy membrane (veil). Vaginal trichomonad and oral trichomonad have a short undulating membrane.

Trichomonads feed in two ways, that is, by absorbing nutrients with the entire surface of the body (osmotic method) or through the cell mouth - cytostome (by absorption method). But the cytostome of vaginal trichomonas has not been identified so far. Trichomonads reproduce asexually by longitudinal division (mitosis). Cyst formation has not been determined. Intestinal trichomonas does not cause dangerous diseases in humans, but accelerates colitis (constipation). Intestinal trichomonas is transmitted through contaminated food or water.

To diagnose trichomoniasis, the patient's feces are examined under a microscope and vegetative forms are determined. Vaginal trichomonas- is ubiquitous.

They are found in the urinary tract of both men and women. The incidence is 20-40% in women and 15% in men. Vaginal trichomoniasis is transmitted as a result of non-compliance with the rules of personal hygiene and during sexual intercourse. To make a diagnosis, a smear is taken from the patient's urinary and genital tracts and examined under a microscope[6,7,8]. The pathogenic

nature of oral trichomonas has not been determined, but oral and dental diseases (gingivitis, periodontitis, dental caries) are more common in people. Therefore, it is necessary to pay special attention to the methods of detection of oral trichomoniasis in dental hospitals.

Vaginal trichomonad is a single-celled simple organism belonging to the family of Protozoa. It differs from other cells by its reticulated protoplasm, shape, structure, and eccentric location of the nucleus. The lenticular nucleus and the basal body lie in the anterior part of the trichomonad. The body is oval, pear-shaped, amoeba-like, the last end is slightly sharpened, the size is from 8-11 μm to 18-20 μm , sometimes there are giant varieties of 50-60 μm in special food environments[9,10,11]. Starting from the blepharoplast, there is a supporting axis-oxostyle that goes from the beginning to the end of the body and becomes sharp and emerges from the end. In two pairs of cilia and trichomonads, a wavy membrane covering half of the body serves as a movement organ. Several digestive vacuoles are located in the cytoplasm.

Trichomonads feed by pinocytosis and phagocytosis with their whole body typical of simple animals. It multiplies by dividing lengthwise.

MATERIALS AND METHODS.

Techniques of obtaining material and laboratory diagnosis. The detection of trichomonads depends on the correct collection of the material.

For example, careful smearing on time makes it much easier to detect trichomonads. Discharge from women is first taken from the back dome of the vagina, then from the cervix, urethra with the help of a tube-shaped probe or an impassable spoon, and a smear is prepared from it.

Sometimes, the smear is mixed with a physiological solution heated to 37-38°C in the window, a drug is prepared in the form of a hanging or pressed drop and immediately sent to the laboratory. In this case, the hanging drop should not be allowed to cool and dry, otherwise the trichomonads will stop moving. Before taking material from a woman's urethra (she should not urinate for 3-5 hours), its surroundings are cleaned with a gauze pad soaked in a sterile physiological solution.

Then, a tube-shaped probe soaked in physiological solution is inserted 1.5-2.0 cm into the urethral canal, and after turning it several times, a discharge is obtained. It is better to collect the discharge in a test tube filled with warm physiological solution[22,23]. There are many trichomonads in the preparation made from secretions taken after menstruation in women. When taking material from men, the protruding part of the secretion and the head of the penis are wiped with a tampon soaked in a sterilized warm physiological solution. The discharge is then massaged into the penis and a pressed or drip ointment is prepared from it[12]. Sometimes it is possible to determine the presence of trichomonas by examining the prostatic secretion obtained by massage or 1-2 drops of urine sediment in a live (native) state. The environment in the male urethra is unfavorable for trichomonads to live. For this reason, trichomonads are less and less active in men's urethra[14,24]. This situation requires frequent repetition of the analysis obtained from men.

Microscopic diagnosis of trichomonad is based on the finding of living trichomonads or it is determined whether they are present in the stained preparations, as well as in the diagnostic culture when grown in a special nutrient medium. The method of seeing trichomonads alive. This method can be used in an ordinary medical laboratory[13,14]. For this purpose, the drug in the suspended or pressed form is examined in a simple microscope with a 10x eyepiece, a 40x objective, and a slightly darkened condenser.

If the excrement is brought in a test tube with physiological solution (4:1 ratio of physiological solution and excrement), it is thoroughly shaken and a pressed preparation is prepared from it (the same preparation is prepared from the sediment of urine)[25,26]. Trichomonads in a living preparation can be recognized by their pulsating movement near an immovable object or by

moving against the flow of liquid; usually they are pear-shaped, egg-shaped, rounded, larger than large leukocytes, and smaller than frozen flat epithelial cells. If they take little or no action, this method won't work[15,16,17]. Phase-contrast, fluorescent, and darkened field of view microscopes can also be used to visualize live trichomonads.

The method of painting the smear. Trichomonads are easily stained by Gram, methylene blue, and Romanovsky methods.

RESEARCH RESULTS.

The technique of staining the preparation with Gram and methylene blue is similar to that of the tongue. Romanovsky or Leishman-Romanovsky staining gives the best results for finding trichomonads in a sample taken from men. Although trichomonads are very few in the smear stained by these methods, it can be easily found among other elements.

For staining by the Leishman-Romanovsky method, the smear is air-dried and, without fixation, leishman dye (eosin, methylene blue-1 g, methyl spirit - 100 ml, glycerin - 50 g) is poured. Then the paint is washed in water, and the smear is placed vertically for another 45 minutes in Romanovsky-Gimza paint diluted 1:9, then thoroughly washed and air-dried.

Even in stained smears, trichomonads are often pear-shaped, oval, round or amoeba-shaped. The reticular cytoplasm does not stain uniformly, it is vacuolated, foamy, and the nucleus of Trichomonas stains faster than the cytoplasm. When stained by the Leishman-Romanovsky method, the trichomonad nucleus is pink-violet, and the cytoplasm is pink. This is important in the detection of trichomonads[18,19,20]. The method of staining with methylene blue. In the following years, the demand for this method has increased significantly. We propose a new rapid staining method for *Trichomonas vaginalis*, which has many advantages over other staining methods[21]. The dye is prepared as follows: 0.5 g of methylene blue is dissolved in 100 ml of distilled water, that is, a 0.5% solution is prepared and kept in a thermostat for 5-10 hours. Dried preparations are fixed in flame or 96° alcohol, placed in 0.5% methylene blue for 1 minute (40-50 seconds), then washed with water and air-dried. In the field of view of the microscope, trichomonads are distinguished from the surrounding elements (epithelial cells) by their pink-purple color. Regardless of which method is used, the specialist must prepare the paints according to the above procedure and strictly adhere to the indicated time.

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