**Concurrent infections of Trichomoniasis and nongonococcal cervicitis in a menopausal woman: A case report**

Ni Luh Putri Ratih Vibriyanti Karna

**ABSTRACT**

**Background:** Trichomoniasis is a rare, sexually transmitted infection. Trichomoniasis can often coincide with other pathogens that cause genital infections. Menopausal women remain at risk of developing this disease due to physiological and anatomical changes in the female genital organs.

**Case:** A woman, age 61 years, experienced vaginal discharge from one month with itching in the genital area. The last menstruation period was 7 years ago. The patient had sexual intercourse once a month ago with her boyfriend; it was the first sexual contact since 7 years ago, without using a condom.

**Result:** Pelvic examination revealed vaginal wall erythema, yellowish discharge on the fornix posterior, and cervical, watery consistency. Leukocytes 20-25 per field view and *Trichomonas vaginalis* was found on laboratory examination. pH examination on the vagina was 8. The patient was diagnosed with Trichomoniasis, and nongonococcal cervicitis was given metronidazole $2 \times 500$ mg, azithromycin 1000 mg single dose for therapy. After therapy with metronidazole, there is an increase in pH that occurred a week after therapy, which amounted to 10 and decreased one week later to 8. An increase in leukocytes also accompanied an increased pH in cases, so that co-infection with other germs should be considered.

**Conclusion:** Examination of wet vaginal preparations revealed *Trichomonas vaginalis* that are alive and moving. In follow-up observations, there was an increase in vaginal pH and increased leukocytes in the vaginal gram. Specific causative bacteria were not found, and thus, the patient was diagnosed with a non-specific genital infection on further observation.

**Keywords:** Trichomoniasis, menopause, vaginitis

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**INTRODUCTION**

Trichomoniasis vaginalis is a sexually transmitted infection caused by a protozoan parasite called *Trichomonas vaginalis* (*T. vaginalis*). Transmission happens mainly through sexual contact.

*Trichomonas vaginalis* infection is estimated to affect more than 200 million women worldwide. It is generally found with high prevalence in sexually active women. The prevalence in men is difficult to estimate because it is commonly asymptomatic. *T. vaginalis* infection can be a sign of high-risk sexual behavior.

Menopause is the absence of a menstrual period for 12 months due to inactive ovarian follicle cells. The menopausal transition period is counted from the last menstrual period followed by 12 months period of amenorrhea (no menstruation). A decrease in estrogen levels at menopause results in cervical atrophy. The cervix which undergoes atrophy provides protection against trichomonas infections.

Trichomoniasis is reported in a woman who has experienced menopause. This case was discussed to increase our understanding of Trichomoniasis as well as to find out that sexually transmitted infections do not only occur at reproductive age with high-intensity sexual intercourse but can also happen at menopausal age with sexual activity.

**CASE**

A 61 years old Javanese woman complained of having itchiness in the genital area for 1 month prior to the clinic visit. It was felt around the genital orifice and extended to the vagina. Vaginal discharge since one month before going to the clinic, along with the onset of itching in her genital. Leucorrhoea was yellowish, stick to the patient’s underwear, and smelled foul. The patient had never treated this condition. Other complaints, such as bleeding after intercourse and lower abdominal pain, were denied. The patient had not experienced menstruation for approximately 7 years ago. The patient’s husband died 7 years ago. The patient had sexual intercourse one month ago with her boyfriend without using protection. She had been having sexual intercourse with her boyfriend for approximately 2 years. In every intercourse, the patient felt that her vagina was dry and then became scratched after intercourse.

General physical examination was within normal limits. Venerealogical status: no abnormality
was found at the right and left labia majora and minora (Figure 1). Vaginal introitus appeared erythematous, and no vaginal discharge was present (Figure 1). Speculum examination revealed vaginal erythema (Figure 2). The vaginal discharge looked greenish yellow at the fornix, with a thin consistency, small amount, no foam, and no smell. The cervix appeared erythematous, and there was a thick clear discharge on the cervical orifice. No strawberry cervix appearance was found.

The differential diagnosis in this patient is trichomonas vaginalis, vulvovaginal candidiasis, gonococcal cervicitis, and bacterial vaginosis. The proposed supporting examinations are gram staining from vaginal and cervical discharge, the examination of wet vaginal preparations, and KOH test.

The examinations revealed a pH of 5 and the presence of *T. Vaginalis* protozoan. This patient was diagnosed with Trichomoniasis and given 500 mg of metronidazole therapy every 12 hours for 7 days, education, and follow-ups after finishing drug therapy.

At the seventh day visit, the patient said that her vaginal discharge and itchiness had significantly reduced. Upon examination, labia majora and labia minora were normal; no discharge was found in the vaginal introitus (Figure 4). Speculum examination showed erythema in the vaginal wall and a little white thick discharge. In the cervical orifice, there was a considerable amount of yellowish-white discharge with thick consistency (Figure 5).

The results of laboratory tests are as follow: pH: 10, amine test (-), KOH test: (-), vaginal wet preparations: 20-30 leukocytes/hpf, candida: (-), trichomonas vaginalis: (-); cervical gram: 5-6 leukocytes/hpf, intracellular and extracellular gram-negative diplococci: (-); vaginal gram: leukocytes: 10-15/hpf, candida: (-), intracellular and negative gram-negative diplococci: (-), coccus bacilli: (+), gram-negative rods: (-), clue cells: (-), cocci bacilli: (+).

The patient was diagnosed with non-specific genital infection. The patient was treated with 1 gram azithromycin, single dose. She was advised not to have sexual intercourse during treatment, check her sexual partners, and return to the clinic for follow-up after one week.

During follow-up on day 14 (December 3rd, 2008), the patient no longer had a vaginal discharge. The itching disappeared, and the vagina was not smelly. The patient claimed that she did not have sexual intercourse during treatment. Upon examination, labia majora and labia minora looked normal, no discharge was found in the vaginal introitus (Figure 6). Speculum examination showed erythema on the vaginal wall and a little thick clear discharge. Cervical orifice appeared erythematous with a little, clear, thick discharge (Figure 7).

The results of laboratory tests are as follow: pH: 8 (Figure 8), vaginal wet preparations: 15-20 leukocytes/hpf, trichomonas vaginalis: (-); Cervical Gram: 3-7 leukocytes/hpf.
CASE REPORT

The patient was diagnosed with non-specific genital infection. The patient was treated with 1 gram azithromycin, single dose. She was advised not to have sexual intercourse during treatment and return to the clinic for follow-up after one week.

DISCUSSION

Women who have infected with *T. vaginalis* experience complaints of vaginal odor, greenish-yellow vaginal discharge, pruritus and erythema of the vulva, and dyspareunia. Infection tends to occur in sexually active men or women. In men, it is usually asymptomatic.\(^1\)\(^3\)

Vaginal complaints of foul smell, itchiness, and greenish-yellow patch in underwear were found in the case. The patient had experienced menopause and was still having sexual intercourse.

The spectrum of clinical symptoms of Trichomoniasis in women varies from asymptomatic to severe vaginitis. The cause of this variation is unknown. Inflammation of the vaginal wall occurs in 20 - 75% of patients. Examination with a speculum showed a yellow or greenish foamy discharge, typical for trichomonas, although the discharge

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Figure 4  Normal labia majora and minora, no discharge was found in vaginal introitus

Figure 5  Cervical erythema, yellowish white discharge

Figure 6  A little white discharge in vaginal introitus

Figure 7  Speculum examination showed erythema of the cervix and clear discharge. Erythema of the vaginal wall

Figure 8  Vaginal pH of 8
can be found in a variety of colors and characteristics. In this case, vaginal erythema was found. The discharge was greenish-yellow on fornix, with watery consistency, a small amount, no foam, and no smell. In this case, the discharge was found in a small amount and did not appear foamy, which was atypical. In the presence of cervical erythema with thick discharge, it is necessary to consider co-infection with other STIs such as gonorrhea and chlamydia infection in this patient.

Increased pH is found in women with Trichomoniasis. In vitro, the optimal growth of T. vaginalis occurs at a pH of 4.9 - 7.5. T. vaginalis is associated with decreased vaginal lactobacillus. Lactobacillus is a normal vaginal flora that produces lactic acid. This can increase vaginal pH at menopause. There are several other factors that influence the increase in pH, including antibiotic therapy, the presence of inflammatory reactions due to microorganisms, sexual intercourse, use of the vaginal cleansing solution and menstruation.

The definition of menopause is the absence of a menstrual period for 12 months due to inactive ovarian follicles. The menopause transition period is counted from the last menstrual period followed by 12 months period of amenorrhea (no menstruation). Some authors argue that vaginal pH is an important marker of pathogenic bacteria and menopausal status.

The patient had no menstrual period since 7 years ago. Based on the definition, she can already be categorized as menopausal. To ensure this condition, the examination of hormonal levels can be done. However, the patient refused because of cost issues. According to the literature about menopause, the vaginal pH of the patient can increase but will not exceed 6. Trichomoniasis infection can also increase pH, but some literature suggests that the vaginal pH in Trichomoniasis can increase from 4.9 to 7.5. In this case, there was an increase in pH occurring a week after metronidazole therapy to 10 and decrease one week later to 8. This is not in accordance with the literature because the administration of metronidazole actually increases lactobacillus colonization. Increased pH, in this case, is also accompanied by increased leukocytes; therefore, co-infection with other germs needs to be considered.

Pathogenic microorganisms, including bacteria, protozoa, fungi, and viruses exist within the environment of the vaginal microflora. The vaginal microflora is composed of a mixture of bacteria, including both gram-negative and gram-positive bacteria, and an imbalance in the composition of the microflora causes infections and diseases in the vagina. The vaginal microflora plays an important role in protecting against pathogens and maintaining vaginal health, thus preventing vaginal diseases and their recurrence. These vaginal infections are especially prevalent in postmenopausal women who experience an imbalance in the vaginal microflora caused by decreased or absent estrogen.

Upon follow-ups, complaints such as discharge no longer occurred, the itching disappeared, the vagina was not smelly anymore, and T. vaginalis was no longer found on examination of wet preparations. But on laboratory examination (vaginal gram staining), there was an increase in the number of leukocytes. From the beginning, there were 10-15, and it increased to (+) many at the last observation. This patient was diagnosed with a non-specific genital infection and treated with 1 g azithromycin, a single dose. Decreased estrogen production in postmenopausal women depletes lactobacilli and increases intravaginal pH. A lower pH inhibits uropathogenic growth, preventing vaginal infection.

Prognosis is very good with appropriate treatment. Treatment of sexual partners is crucial to avoid reinfection. The choice of antibiotic depends on local patterns of drug-resistance, as no drug has any significant superiority. The duration of treatment is not clear, but the need for prophylaxis should be re-evaluated after 6–12 months. A cautious approach to drug treatment is advisable in the presence of multiple comorbidities, polypharmacy and declining renal function which are common in the elderly women.

In this case, the prognosis is dubious. There is a non-specific genital infection after metronidazole treatment for 6 days. In addition, the patient’s sexual partner had not come for treatment, so the possibility of reinfection can occur.

**CONCLUSION**

A case of Trichomoniasis has been reported in a menopausal woman. Diagnosis is based on history taking, physical examination, and supporting examination. From history-taking, there was a yellowish-green discharge with an itchy and smelly vagina, which occurred since one month prior to the clinic visit. On physical examination, there was erythema of the vagina and little yellowish-green discharge. Examination of wet vaginal preparations revealed *trichomonas vaginalis* that are alive and moving. In follow-up observations, there was an increase in vaginal pH and increased leukocytes in the vaginal gram. Specific causative bacteria were not found, and thus, the patient was diagnosed with a non-specific genital infection on further observation.
CONFLICT OF INTEREST
There is no competing interest regarding the manuscript.

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AUTHOR CONTRIBUTION
Ni Luh Putu Ratih Vibriyanti Karna is responsible for the study from the conceptual framework.

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