



## A Case of Chronic Bacterial Prostatitis Due to *Gardnerella vaginalis*

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### Abstract

Chronic prostatitis is the most commonly encountered urological diagnosis in men younger than 50 years, with a significant negative impact on quality of life. *Gardnerella vaginalis* is the causative agent of bacterial vaginosis in females, but this bacterium is also considered as a rare cause of genitourinary infections, like prostatitis, in men having sexual activity. The literature regarding chronic prostatitis due to *Gardnerella vaginalis* is limited. We present a rare case of a 44-year-old man with symptoms of chronic prostatitis and a “two-glass” test positive for *Gardnerella vaginalis*, who was successfully treated with antibiotic therapy (clindamycin).

**Keywords:** Chronic Prostatitis; Bacterial Prostatitis; *Gardnerella vaginalis*; Genitourinary Infections; Sexually Transmitted Bacterium

### Introduction

Chronic prostatitis represents the most commonly encountered urological diagnosis in men younger than 50 years and the third most commonly diagnosed male urological condition [1]. This condition greatly affects the quality of life of men to a degree comparable to other chronic health conditions, like ischemic heart disease and diabetes mellitus [1].

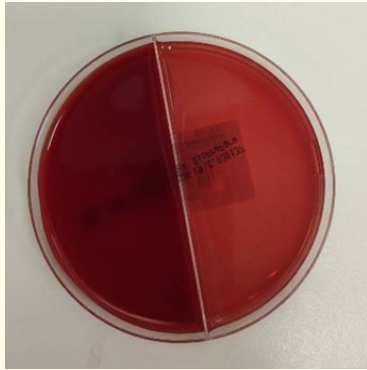
*Gardnerella vaginalis* is a bacterium found naturally in the normal vaginal flora [2]. If there is an excess of growth, it is the primary bacterium responsible for bacterial vaginosis in women [3]. *Gardnerella vaginalis* is known as a bacterium that can be sexually transmitted [4]. Rarely it can cause genitourinary infections in males, as cases of balanoposthitis, urethritis, prostatitis and cystitis have been reported, but men are typically considered as asymptomatic carriers of the bacterium [4,5]. However, it is still uncertain how frequently this microorganism acts as a pathogen of the genitourinary tract in males [3,6]. Especially for chronic prostatitis associated with *Gardnerella vaginalis*, there is scarce information in the literature regarding this pathological entity. In order to augment the existing literature on this topic, we present a case report of chronic prostatitis caused by *Gardnerella vaginalis*.

### Case Presentation

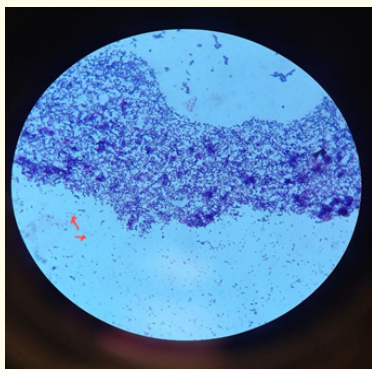
A 44-year-old male presented to our department in February 2024 with symptoms of dysuria and urinary frequency, with a duration of three months. The onset of symptoms was in November 2023. The patient also reported that he had noticed an unusual odor in his semen during the past two months. He denied any episodes of hematuria or urethral discharge. The patient reported no past medical history or chronic medication. He denied any prior episodes of prostatitis in the past, prior urological surgeries or prior use of urinary catheters. He is unmarried and his last unprotected sexual intercourse with a woman was in September 2023, approximately two months before the onset of symptoms. Unfortunately, it is unknown whether the sexual partner had any symptoms of vaginitis prior to the intercourse or if she developed any urological symptoms after the coitus.

The patient's physical examination was normal. His urinalysis was negative for hematuria or pyuria and his urinary culture showed no growth of pathogens. A semen culture was performed and showed minimal growth of *Gardnerella vaginalis* in the sample. For the verification of the results a “two-glass” test was performed and revealed an evident growth of the microorganism. The patient

was treated with clindamycin 300 mg oral tablets four times daily and the duration of treatment was one month. The treatment was successful and there was complete resolution of symptoms after one month. The semen culture following treatment showed no growth of microorganisms. On a follow-up examination of the patient in May 2024, he was free of symptoms and he hadn't experienced any urological issues since the treatment of prostatitis.



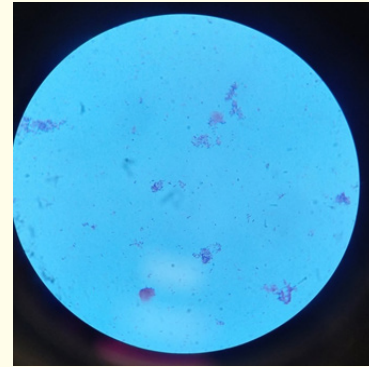
**Figure 1:** Agar plate of the urinary culture showing no growth of pathogens.



**Figure 2:** Semen culture. The arrows indicate growth of *Gardnerella vaginalis*.

## Discussion

Chronic prostatitis has a major impact on men's lives, reducing their quality of life [1]. Chronic bacterial prostatitis is defined as the evidence of prostatic infection lasting at least three months, caused by the same microorganism, and accompanied with chronic or recurrent urogenital symptoms [7]. The symptoms of chronic bacterial prostatitis include dysuria, frequent urination, urinary urgency, burning sensation during micturition, pain and burning



**Figure 3:** "Two-glass" test. The test revealed growth of *Gardnerella vaginalis*.

feeling during ejaculation, haemospermia, pelvic and suprapubic pain, pain in the lower back, impotence and premature ejaculation [8]. The diagnosis is determined by positive bacterial cultures of samples which usually are expressed prostatic fluid (EPS), post-prostatic massage urine, and semen [8]. The traditional diagnostic approach for chronic bacterial prostatitis is the Meares-Stamey "four-glass approach" [7]. This diagnostic test is quite burdensome to conduct and so a "two-glass approach", which is similarly efficient, may be utilized [9]. Oral antimicrobial therapy with long doses of antimicrobial agents that can adequately reach the prostatic tissue is the most appropriate treatment for chronic bacterial prostatitis [7,8].

*Gardnerella vaginalis* is a predominant anaerobic coccobacillus with a thin cell wall that is gram-positive [2]. However, it is considered a gram-variable bacterium as its appearance can switch between gram-positive and gram-negative due to the changeable visibility of its cell wall [2]. It is found in the urethra of the majority of male partners of female patients with bacterial vaginosis, supporting the concept that it is a sexually transmitted bacterium [3,6]. *Gardnerella vaginalis* can be found in the genitourinary tract of 7.2%-11.4% of asymptomatic men [4]. Especially, carriage of this microorganism in the seminal fluids has been reported in 38% of healthy men [10]. The role of *Gardnerella vaginalis* as a pathogen of the genitourinary system in males is uncertain and has been considered as clinically insignificant [3,10]. It is believed that the environment of the male genitourinary tract is hostile to the bacterium, because of the high concentrations of zinc in the prostatic fluid, the prostatic lining with columnar or cuboidal epithelial cells that may resist adherence of the bacterium and the possible bactericidal effect of urine [10].

Nevertheless, cases of balanoposthitis, urethritis, prostatitis and cystitis due to *Gardnerella vaginalis* have been documented in the literature [4,5,11]. It is believed that this bacterium can become symptomatic under increased microbial concentrations [3]. In a case of bacterial prostatitis due to *Gardnerella vaginalis* in the literature the reported symptoms were dysuria and frequency of urination [11]. In other patients with *Gardnerella* associated infections the symptoms can also include a "fishy odor" urethral discharge and hematuria [4]. According to recent studies, the treatment of a genitourinary infection caused by *Gardnerella vaginalis* is effective with the use of metronidazole or tinidazole, although clindamycin, as used in our case, has also been reported [3,11].

In our case the patient presented with three months of dysuria and urinary frequency. Additionally, he noticed a weird odor in his semen one month after the onset of symptoms, which may be relevant to the characteristic "fishy" odor of urethral discharge associated with *Gardnerella* infections. Before treatment, the patient complained of daily urinary symptoms that significantly affected his quality of life. Therefore, although chronic prostatitis due to *Gardnerella vaginalis* is uncommon, it is crucial for urologists to recognize and manage this condition appropriately.

## Conclusion

Chronic prostatitis caused by *Gardnerella vaginalis* can adversely impact men's well-being, despite its rare occurrence. Urologists should acknowledge the existence of this rare condition and provide appropriate treatment. The use of clindamycin as first line antibiotic therapy can be a valuable option in treating *Gardnerella vaginalis* chronic prostatitis.

## Conflict of Interest

The authors declare no conflict of interest.

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