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## CLINICAL VIGNETTE

# Group A Streptococcal Vaginitis

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### *Case Report*

A 25-year-old female with no significant past medical history presented with acute onset vaginal irritation and copious yellow/green discharge three days after intercourse with a new sexual partner. Initial evaluation was “equivocal” for trichomonas versus bacterial vaginosis and gonorrhea and chlamydia tests were negative. She was treated empirically with metronidazole 500mg by mouth twice daily for 7 days. Despite treatment, the patient had persistent and progressive symptoms plus a new development of a red, burning, and pruritic rash in the perianal area. She denied any current sore throat, fever, chills, pelvic pain, lymphadenopathy, weight loss, or night sweats.

On exam, the patient was afebrile and normotensive. Her pharyngeal exam reveals moderately enlarged tonsils without exudates. Genitourinary exam shows no external lesions. Her vaginal walls are erythematous with mild edema. The cervix was markedly erythematous with a strawberry-like appearance without vesicles and copious neon yellow-green mucopurulent discharge originating from the cervix. Bimanual exam was negative for cervical motion tenderness, adnexal masses or tenderness. There is a peri-anal pink rash with satellite lesions, without scaling or vesicles.

Wet preparation shows many polymorphonuclear white blood cells without hyphae, clue cells, or flagellated organisms. Direct gonorrhea and chlamydia tests are negative. Direct bacterial culture of the cervical discharge grew Group A Streptococci.

### *Background*

Vaginal infection with group A streptococci (GAS) is a largely unrecognized cause of vaginitis in adult women and therefore often misdiagnosed as bacterial vaginosis, candidiasis,

or trichomonas. If diagnostic work-up fails to identify the more common causes, or treatment does not provide symptomatic relief, then more rare infectious causes need to be considered.

### *Epidemiology*

In adult women, group A streptococci (GAS) is a rare normal colonizer in the genital tract of asymptomatic individuals. However, when analysis of colonization was performed amongst women with chronic or recurrent vaginal discharge, higher rates of GAS have been shown to exist. In a case-control study by Bruins et al.<sup>1</sup> a comparison was made between the presence of GAS in vaginal specimens obtained from 1,010 patients with chronic or recurrent vaginal discharge compared to 206 controls. While GAS was not isolated from a single control sample, 48 out of 1,010 cases of the symptomatic groups grew GAS as the only isolate (0 vs. 4.8%  $p < 0.003$ ). These data are further supported by a limited series of case reports<sup>2</sup>.

### *Risk Factors*

GAS vulvovaginitis in adults is often associated with 3 main risk factors:

1. Household or personal history of skin or pharyngeal infection due to GAS – This includes recent infection of a child, sexual partner, or the woman herself. Although mostly found in the nasopharynx, GAS can also colonize the perineum, anus, vagina, and normal skin. Perianal GAS shedding may lead to contamination of bed sheets and mattresses, which can then spread to the female partner.
2. Sexual transmission – This occurs most often when oral sex precedes vaginal sex when the method of transmission is

from the throat to the penis and then to the vagina. Alternatively, although not directly proven, direct transmission may occur from receptive oral sex from an asymptomatic oropharyngeal carrier.

3. Lactational and menopausal vaginal atrophy – A few cases have been reported in post-menopausal women or women with lactational amenorrhea for 2+ years with proven vaginal atrophy. It has been suggested that vaginal atrophy resembles the immature, hypo-estrogenic vaginal mucosa of pre-pubescent girls who are at a higher relative risk of GAS vaginitis compared to adult women. Another explanation is relative paucity of lactobacilli in the atrophic vaginal environment, which help to inhibit the growth of pathogenic vaginal bacteria.

### **Symptoms**

Signs and symptoms of women with GAS vulvovaginitis are typically more acute and more severe compared to other causes of vaginitis. Patients often complain of vaginal, vulvar, and/or perineal pain, a symptom usually not seen with other causes of vaginitis. Other distinguishing features include copious vaginal discharge, which can be frankly purulent and non-odorous. In addition, GAS vaginitis is often accompanied by extension of the infection to the perineum, glutei, or medial thighs.

### **Diagnosis**

Diagnosis is based on history, physical exam, wet mount with abundant polymorphonuclear white blood cells, and direct culture positive for GAS overgrowth.

### **Treatment**

There are neither clinical trials nor guidelines on the treatment of GAS vulvovaginitis. However, anecdotal success has been achieved with the following regimens: 1. Penicillin VK 500 milligrams four times daily for 10-14 days; 2. Clindamycin 2% cream per vagina for 7-10 days.

In cases in which vaginal atrophy is a factor, then concurrent treatment with vaginal estrogen

is recommended. In cases of recurrent disease, it is also important to assess and treat the patient's asymptomatic household members for pharyngeal and/or gastrointestinal/anal carriage. Reported treatment for carriers have included levofloxacin 500 milligrams daily for 28 days, moxifloxacin 400 milligrams for 14 days, or penicillin VK 500 milligrams four times daily for 10 days<sup>3</sup>.

### **Case Update**

In the case reported in this paper, the patient was treated empirically with 2000 milligrams of azithromycin for atypical vaginitis while awaiting culture results. This resulted in a rapid resolution of symptoms including the vaginal discharge, pain, and perianal rash. Once final culture results revealed Group A streptococci, she was additionally treated with clindamycin 2% cream per vagina for 7 days. Throat and perianal cultures were also obtained, which were negative for GAS.

Throat and peri-anal cultures were also obtained from the patient's partner, who is also my patient. These were negative for GAS. He was empirically treated with penicillin VK 500 mg four times daily for 10 days in case of gastrointestinal carriage. They were also instructed to wash all bedding in hot water in case of shedding in the bed sheets.

In retrospect, the patient recalls a self-limited illness of sore throat and fever about two weeks prior to the onset of vaginitis symptoms. We concluded that the etiology of the infection was likely self-inoculation from patient's throat, spread to the vaginal and peri-anal area post oral and subsequent vaginal intercourse.

Three months post treatment the patient was symptom free and repeat vaginal cultures were negative.

### **Conclusion**

Although most cases of vaginal discharge in adult women are related to bacterial vaginosis, candidiasis, or trichomonas, it is important that clinicians consider other causes if the diagnosis and treatment of these conditions does not result in resolution of symptoms. Consider GAS vaginitis particularly if the patient presents with purulent, non-odorous discharge and

considerable vulvovaginal pain. Given that many cases involve an asymptomatic carrier of GAS, remember to test and treat all potential household members.

## REFERENCES

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