

> THE PATIENT

13-year-old girl

> SIGNS & SYMPTOMS

- Back, chest, and vaginal pain
- Fever and sore throat
- Vaginal discharge and labial ulcer

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> THE CASE

The mother of a 13-year-old girl brought her daughter to our family medicine clinic for follow-up after being seen in the emergency department (ED) 3 days earlier. The girl had presented to the ED with a one-day history of back, chest, and vaginal pain. She was diagnosed with a urinary tract infection and treated empirically with phenazopyridine and cephalexin pending a urine culture.

During the follow-up appointment, the patient complained of worsening vaginal pain and increased vaginal discharge, but reported resolution of her back and chest pain. She also said that a week earlier, she'd had a fever that reached 104° F and a sore throat. She denied urinary frequency/urgency, sexual activity, or sexual abuse. The result of the urine culture performed in the ED was <10,000 col/mL (normal urogenital flora).

A genitourinary (GU) exam revealed erythematous patches with small amounts of crusting at the inner labia bilaterally. The labia were also swollen and diffusely tender to palpation. The patient had a white/gray discharge, but no vesicles or papules. The physician was unable to place a speculum due to pain.

The differential diagnosis at the time included candidal vaginitis and cellulitis. Since the patient's skin was non-erythematous and she had vaginal discharge, she was treated for presumed severe candidal vaginitis with fluconazole and clotrimazole 1% cream. (The antibiotics were stopped because the patient reported worsening symptoms after they were prescribed in the ED.) The patient was told to return to the ED if she experienced signs and symptoms such as worsening vaginal pain or discharge, fever, or chills. A repeat urine culture was performed and the results came back normal.

■ **Worsening symptoms.** Six days later, the patient returned to the ED with urinary hesitation and persistent dysuria; she was admitted for pain control. She also complained of worsening labial swelling and increased vaginal discharge despite adherence to the fluconazole and clotrimazole cream regimen, which were discontinued on admission to the ED. She continued to deny being sexually active or abused.

A GU exam showed a 1-cm shallow ulcer on the right labium and a copious amount of foul-smelling white discharge. An Ob/Gyn resident and attending physician examined the patient; their differential diagnosis at this point included herpes simplex virus (HSV), Epstein-Barr virus (EBV), gonorrhea/chlamydia, and trauma. The patient was given topical lidocaine for pain control and started on acyclovir for presumed HSV while awaiting the HSV test results. A pelvic ultrasound and laboratory work-up were ordered at this time as well.

THE DIAGNOSIS

The pelvic ultrasound showed that the uterus was a normal size and that there was no gross mass or significant pelvic fluid. The patient's right ovary measured 2.8 × 1.6 cm; the left ovary was not seen.

The patient's laboratory work-up included an unremarkable comprehensive metabolic panel. A complete blood count was within normal limits, except for the patient's monocyte level, which was at 12.9% (reference range: 0%-12%). The patient had a negative urinary human chorionic gonadotropin test, and was negative for HSV, chlamydia, gonorrhea, and trichomoniasis. A rapid plasma reagin test and human immunodeficiency virus antibody (1+2) tests were nonreactive. A wet prep was negative. A mononuclear spot test (monospot), however, was positive.

Results from the monospot testing took several days to return. By the time the results arrived, the patient had been transferred to a local children's hospital for assessment in their pediatric urology department, as she was experiencing urinary hesitation and required catheterization. The diagnosis of infectious mononucleosis presenting with genital ulcer was made. EBV cultures were never obtained, but seemed to be the likely cause of the patient's infectious mononucleosis given her clinical symptoms and lab results.

DISCUSSION

Approximately 95% of adults worldwide are infected with EBV.¹ While the infection is often asymptomatic, some patients will develop infectious mononucleosis.¹ EBV is the most common cause of infectious mononucleosis, mainly affecting teenagers and young adults (especially college students). At least 25% of teenagers and young adults who become infected with EBV will develop infectious mononucleosis.²

■ **Typical symptoms of infectious mononucleosis** include extreme fatigue, fever, sore throat, and head and body aches.² In this case, the patient did have a fever and sore throat one week prior to presentation at our clinic, but she never complained of fatigue.

The association between mononucleosis and genital ulcers is not well known,^{3,4} and the exact method by which EBV causes genital ulcers is unclear.⁵ One review found that only 13 instances of genital ulceration in females attributable to EBV infection had been reported.⁵ When ulceration does occur, the majority of cases have involved young females who presented with only mild symptoms of mononucleosis.^{3,6} EBV has been found to present in the cervix, which suggests direct inoculation.^{3,6}

■ **Our patient** remained catheterized for 2 days while in the children's hospital. Her ulcer started to heal and she was sent home in stable condition. No additional follow-up was required and the ulcer did not recur.

THE TAKEAWAY

Include infectious mononucleosis in the differential for patients presenting with vaginal ulcers—especially those who deny sexual activity. Including testing for EBV and mononucleosis antibodies in the work-up can aid in the diagnosis. Cases such as this one are also a good reminder of the need to question young people while their parents/guardians are not in the exam room to foster an open and honest patient-physician relationship.

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One review found only 13 instances of genital ulceration in females attributable to Epstein-Barr virus. The exact method by which EBV causes the ulcers is unclear.

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