Is This Turf Burn?

Charles B. Chen, MD  West Virginia University Department of Pediatrics
Chickajajur S. Vijay, MD  West Virginia University Department of Pediatrics

Abstract

A 16-year-old male was admitted to the hospital for a facial rash that progressively worsened over the course of a week and was refractory to antibiotics. He was subsequently diagnosed with herpes gladiatorum, a condition that most commonly affects the face and upper trunk. This condition is most prevalent in athletes that engage in contact sports. We hereby report a case of a patient who presented with herpes gladiatorum as well as the subsequent hospital course and treatment.

Introduction

Herpes gladiatorum is a dermatologic condition caused by herpes simplex virus (HSV-1) that affects primarily athletes involved in contact sports, most notably wrestling. Like other HSV-1 infections, this condition usually presents with lesions on the face or upper parts of the body. Given the skin-to-skin contact in a sport like wrestling, the likelihood of transmission is very high.\(^1,2\) As in other herpes infections, it can be either a primary or recurrent infection. Though many individuals experience only a single episode, recurrent infections also occur frequently, affecting the quality of life and increasing the risk of complications. Additionally, this condition is oftentimes misdiagnosed by clinicians, as the lesions can be confused with those found in other bacterial, viral, or fungal infections.

Case Presentation

A 16-year-old male presented to the hospital with a worsening rash on his forehead. He initially noticed the lesion following a mat burn that he had suffered one week previously. The rash progressively worsened over the course of that week, and he reported drainage of pus with associated burning and itching. He initially went to an outside facility where he was treated with Clindamycin with no improvement in symptoms. He later presented to another facility where a wound culture was collected and grew Methicillin Sensitive Staphylococcus Aureus. Given his worsening rash despite being on antibiotics, he was transferred to our facility for further management.

He also reported a 3-day history of rhinorrhea and sore throat, which had resolved by the time of admission. He denied any fevers. He also denied any visual symptoms. His review of systems was otherwise negative. His past medical history was significant for one episode of impetigo the previous year. He denied any history of eczema or MRSA infection.

On physical examination, the patient was a healthy appearing male who was afebrile and his vital signs were stable. He had erythematous, eroded lesions throughout his forehead, surrounded by numerous vesicular lesions (Figure 1). He had no lymphadenopathy, and his oropharynx was non-erythematous and without any lesions. His visual acuity was normal, and he did not have any eye involvement on examination. The rest of his examination was also unremarkable.

Complete blood count, basic metabolic panel, and liver function tests were drawn and were all within normal limits. Varicella zoster virus (VZV) and herpes simplex virus (HSV) swabs of the forehead were sent. HSV PCR was positive and VZV PCR was negative. Additionally, the clinical presentation was consistent with a herpetic lesion. In consultation with dermatology, the diagnosis of herpes gladiatorum was established. Ophthalmology was consulted to evaluate for any ocular involvement, however none was noted.

He was started on intravenous acyclovir 10 mg/kg every 8 hours until the lesions stabilized, then transitioned to oral valacyclovir 1 g daily. He continued to take Clindamycin 300 mg every 6 hours for secondary bacterial coverage. He responded well to the medications and was discharged home to complete the rest of a 14-day course of valacyclovir and Clindamycin.

Figure 1: Erythematous, eroded lesions on the forehead with numerous vesicles.
At his hospital follow-up one week later, he had some faint crusting and hypopigmented macules on his forehead, but his rash had completely resolved. During the following wrestling season, he completed a four month course of suppressive dose valacyclovir and had no further recurrences.

**Discussion**

Herpes gladiatorum can be a source of major concern for wrestlers, as having the lesions can preclude the athlete from competition. Mass outbreaks of herpes gladiatorum have been documented on multiple occasions at wrestling camps. It is thought that the “locked-up” position during wrestling is the biggest culprit, as head-to-head contact is usually implicated in transmission. Changes in competition rules as well as the complexity of wrestling over the past forty years have led to an increased amount of time in the “locked-up” position during wrestling matches, which have served to put more athletes at risk for herpes gladiatorum. Additionally, certain abrasive clothing have also been shown to increase the chances of developing herpes gladiatorum.

The diagnosis of herpes gladiatorum is primarily clinical. Patients often develop clusters of fluid-filled blisters on affected parts of their body, most commonly the head, face, and neck. Several studies of outbreaks have shown that more than 70% of cases involve these regions of the body. The number of vesicles and appearance of the rash may vary greatly between individuals. The average length of time between initial exposure to the appearance of vesicles ranges between 4 to 11 days. When the face is involved, the vast majority of patients develop symptoms within the first 8 days. Many individuals develop associated cold-like symptoms including fever, chills, sore throat, and lymphadenopathy as in our patient. Patients may also have prodromal symptoms, including tingling and burning. As the lesions may be difficult to distinguish from other infectious rashes, viral and bacterial swabs of the lesions are often performed. The appearance of the lesion can be confused with other viral and bacterial skin infections including cellulitis, folliculitis, and impetigo. Herpes zoster, warts, and molluscum contagiosum and fungal infections (such as tinea faciei) should also be ruled out. Other etiologies including pyoderma and contact dermatitis must also be included in the differential. Appropriate clinical suspicion is necessary, as many cases may be misdiagnosed.

Like other herpes infections, patients with herpes gladiatorum may experience recurrences as well. After a primary infection, the virus remains dormant in the dorsal root ganglia and may be reactivated by triggers such as stress and infection. Symptoms are usually less severe during a recurrent infection. Additionally, ocular involvement can occur and can lead to serious complications, especially in cases with corneal involvement. Corneal scarring and retinal necrosis can lead to vision loss and blindness. For that reason, any case where ocular involvement is suspected requires a full ophthalmologic evaluation.

Antivirals are the mainstay of treatment for herpes gladiatorum, and commonly used medications include acyclovir and valacyclovir. Without medications, patients usually clear the infection in 10 to 14 days, with recurrent infections taking less time to resolve (7 to 10 days). For primary infections, athletes are recommended to take 1 mg oral valacyclovir twice daily for 10-14 days or oral acyclovir five times daily for 10-14 days. For recurrent infections, a 7-day course of either valacyclovir or acyclovir is recommended. One study showed that a one-week course of valacyclovir 500 mg twice daily reduced the time to clinical clearance of an outbreak from about 8 days to 6 ½ days. Finally, athletes may be put on a prophylactic or suppressive course of antivirals, especially during wrestling season when there is a higher chance of developing an infection. Several studies have also demonstrated a lower incidence of herpes gladiatorum outbreaks in wrestling camps when wrestlers took prophylactic valacyclovir.

For wrestlers, the most important question is often about the timeline to return to competition. Many regulations require that all lesions be crusted or scabbed before the wrestler is eligible to return. Although athletes with open lesions are not allowed to participate, routine skin checks prior to matches are not always mandatory. Even when skin checks are required, misdiagnosis can frequently happen, especially when the trainer is inexperienced in diagnosing such lesions. Some guidelines, especially at the high school level, may be inadequate in protecting athletes from herpetic infections. The two main guidelines in use in amateur wrestling are those of the National Federation of State High School Associations (NFHS) and the National Collegiate Athletic Association (NCAA). The NCAA adopts more strict guidelines, as athletes are required to be examined for lesions by a qualified physician or athletic trainer before competing. The guidelines set by the NCAA require that all lesions be crusted, no new lesions or systemic symptoms
for 72 hours, and treatment with antivirals for 120 hours. In contrast, the NFHS guidelines require oral antivirals for 10-14 days, complete scabbing of all lesions, and no new lesions while on antivirals for at least 48 hours. Although these guidelines set the minimum time to return to wrestling, many athletes continue to take medications even after returning to practice or competition.

**Conclusion**

As herpes gladiatorum can be easily spread at wrestling camps and competitions, prevention is extremely important. Patients are recommended to exercise personal hygiene and to either avoid sharing equipment or thoroughly disinfect equipment prior to use. It is important that patients be withheld from wrestling or other similar activities with frequent skin-to-skin contact until their lesions have fully healed. Additionally, athletes should be encouraged to report any suspicious lesions to their trainers or coach. Routine skin examinations may lead to early detection and diagnosis.

**References**