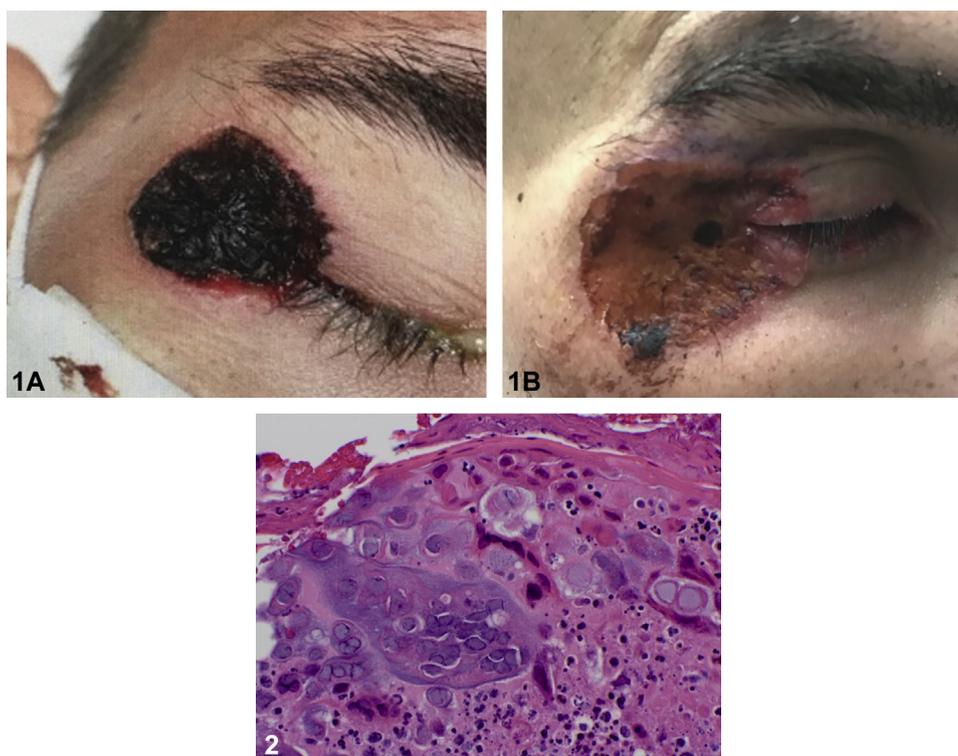


## A rapidly-growing, heme-crusted lesion



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A 19-year-old male with uncontrolled HIV presented with an erythematous, heme-crusted lesion lateral to his right eye, which is shown before (Fig 1, A) and after (Fig 1, B) cleaning with cotton-tipped applicators. The patient stated that the lesion had started as a small spot 3 weeks before and had been rapidly growing since then. He denied purulent discharge, pain, or vision changes from the lesion. He also denied the existence of other painful, itchy, or bleeding ulcers.

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A shave biopsy of the lesion was performed after cleaning (Fig 2).

**Question 1: What is the most likely diagnosis?**

- A. Coxsackievirus infection
- B. Herpes simplex virus (HSV) infection
- C. AIDS-related Kaposi sarcoma
- D. Cutaneous aspergillosis
- E. Cytomegalovirus infection

**Answers:**

**A.** Coxsackievirus infection — Incorrect. Atypical coxsackievirus infections caused by Coxsackievirus A6 may present as vesicular lesions, which undergo crusting and ulceration in areas other than the hands, feet, and mouth. However, the histology of these lesions would likely reveal a neutrophilic infiltrate with intraepidermal vesiculation and specific involvement of the stratum spinosum and stratum granulosum without multinucleation.<sup>1</sup>

**B.** HSV infection — Correct. The presence of multinucleated keratinocytes exhibiting ballooning degeneration and steel gray nuclei (Fig 2) is characteristic of an HSV infection.

**C.** AIDS-related Kaposi sarcoma — Incorrect. While Kaposi sarcoma is commonly associated with HIV, it usually presents as a slowly growing violaceous patch, plaque, or nodule. Additionally, the histology of these lesions exhibits endothelial proliferation.<sup>2</sup>

**D.** Cutaneous aspergillosis — Incorrect. Although cutaneous aspergillosis occurs more often in patients with AIDS and can present with a similar clinical picture, the pathology would reveal septate hyphae with acute angle branching.<sup>3</sup>

**E.** Cytomegalovirus infection — Incorrect. Cytomegalovirus infections are common in immunocompromised patients and can cause histologic changes in infected cells. However, these changes usually consist of enlarged cells containing basophilic intranuclear inclusion bodies surrounded by clear halos, commonly referred to as “owl’s eye inclusion bodies.”

**Question 2: Which of the following is true regarding the first-line treatment for this case?**

- A. The treatment of choice is surgical removal.
- B. One possible side effect of the first-line drug of choice is hyperpigmentation on the palms of the hands and soles of the feet.

**C.** No treatment is required. The lesion will heal in 3-6 weeks.

**D.** The first-line drug of choice requires activation by a viral enzyme.

**E.** The first-line drug of choice inhibits phospholipase A2 and can cause secondary adrenal insufficiency.

**Answers:**

**A.** The treatment of choice is surgical removal — Incorrect. Surgical removal would be the standard of care to treat a basal cell carcinoma. However, because the underlying cause is a viral infection, treatment with antiviral medication is recommended.

**B.** One possible side effect of the first-line drug of choice is hyperpigmentation on the palms of the hands and soles of the feet — Incorrect. This answer refers to the use of emtricitabine, a drug commonly used to treat HIV. While emtricitabine may appropriately be used to treat this patient’s HIV, the first-line treatment should be focused on treating the HSV infection before treating the HIV infection.

**C.** No treatment is required. The lesion will heal in 3-6 weeks — Incorrect. While there is no cure for HSV, antiviral therapy is recommended for HSV infections, especially in patients who are immunocompromised.

**D.** The first-line drug of choice requires activation by a viral enzyme — Correct. Acyclovir, valacyclovir, and famciclovir each require phosphorylation by viral thymidine kinase in order to be activated and can each be used to treat HSV infections. Any one of these three drugs can be considered appropriate first-line treatment for this patient.

**E.** The first-line drug of choice inhibits phospholipase A2 and can cause secondary adrenal insufficiency — Incorrect. This answer is describing prednisone, a drug commonly used to increase quality of life for shingles infections. Prednisone may also be used to treat HSV encephalitis, but because there are no signs of HSV encephalitis, prednisone is not indicated in this case.

**Question 3: Which of the following is the most common complication of the infective agent responsible for this lesion?**

- A. Hearing loss
- B. Herpes simplex encephalitis

- C. Keratitis
- D. Aseptic meningitis
- E. Bacterial superinfection

**Answers:**

- A.** Hearing loss — Incorrect. Hearing loss is a rare complication of HSV infections and can occur when the virus damages the cochlea or the nerves involved in hearing.<sup>4</sup> However, hearing loss is not the most common complication of those listed.
- B.** Herpes simplex encephalitis — Incorrect. Herpes simplex encephalitis is rare, hemorrhagic encephalitis, which often affects the temporal lobes. While it is a very serious complication, it is not the most common of those listed.
- C.** Keratitis — Incorrect. HSV can spread to infect the cornea and cause scarring. HSV keratitis is a major cause of blindness worldwide, but it is less common than the correct answer for this question.
- D.** Aseptic meningitis — Incorrect. Aseptic meningitis is a rare complication of HSV and usually self-limiting; however, it can cause more severe disease in immunocompromised patients.
- E.** Bacterial superinfection — Correct. A bacterial superinfection occurs when there is a bacterial

infection on top of a pre-existing infection. Of all the complications listed, bacterial superinfection is the most common complication of an HSV infection.<sup>5</sup>

**Abbreviation used:**

HSV: herpes simplex virus

**Conflicts of interest**

None disclosed.

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