SILK VISION AND SURGICAL CENTER

Herpetic Eye Disease (HED) is one of the leading causes of blindness with an estimated one third of the world's population suffering from recurrent infection. Unfortunately it's also one of the most difficult diseases to diagnose and treat. I often hear from colleagues that it's very confusing to understand the different presentations and treatment algorithms. Although there are many book chapters devoted to HED, my goal is to provide a few tips to help make it both easier to understand HED and to provide patient care.

1. How is HED classified? There are 2 questions to ask yourself: first is this is a *Primary* or *Recurrent* infection and second is this an *active* or *immune* case. *Primary* HED involves new onset active viral replication and usually presents with a unilateral blepharoconjunctivitis, corneal epithelial dendrites or geographic epithelial keratitis. *Recurrent* infection is caused by reactivation of the virus in the latently infected sensory ganglia and can present the same way as *primary* infection.

HED is then further divided as an *active* or *immune* corneal infection. An *active* corneal infection means that the virus is actively replicating usually in the form of epithelial dendrites and very rarely necrotizing stromal keratitis. *Immune* reactions, on the other hand, are episodes of inflammation that occur secondary to the inactive/dead viral antigens in the cornea. Classically this presents as either a disciform keratitis with a central edematous cornea and endothelial keratic precipitates or as interstitial stromal keratitis with increased corneal haze in region of a previous scar. Both of these conditions affect the corneal stroma and the epithelium remains intact.

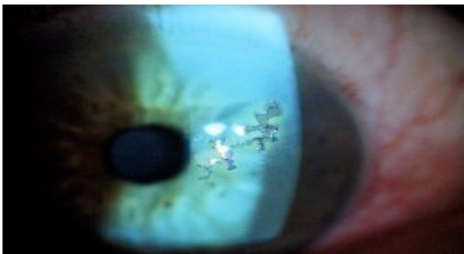

Fig. 1 Corneal Epithelial Dendrites

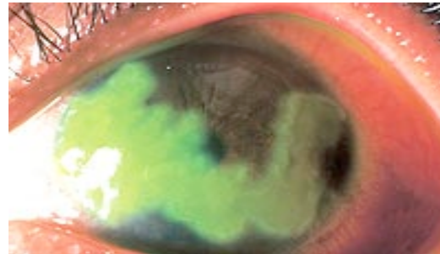

Fig. 2 Geographic Epithelial Keratitis

Fig. 3 Disciform Keratitis

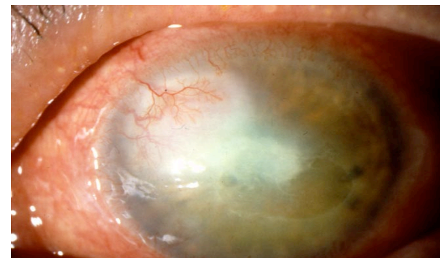

Fig. 4 Interstitial Stromal Keratitis

2. What do you recommend for treatment? Treatment for *active* HSV infections includes either topical Viroptic or oral antivirals such as Acyclovir, Valtrex or Famvir. In our clinic we prefer oral antivirals because they provide better coverage for the periocular region such as the eyelids and cause less corneal toxicity than topical agents. Valtrex and Famvir are the preferred agents as these are pro-drugs of Acyclovir and have better bioavailability.

3. Can you use topical steroids? If so when? Topical steroids can and should be used in the setting of *immune* disease. When using steroids we also have patients on a low dose of oral antivirals (Acyclovir 400 mg bid or Valtrex 500mg qd) to prevent viral replication and the development of *active* disease. If using Viroptic we recommend one drop of Viroptic for every drop of steroid used.

4. What are the long term affects and complications of HED? The common complications of HED infections are decreased corneal sensation and corneal scarring with decreased vision. With decreased sensation the corneal epithelium quickly breaks down usually with a dull gray oval defect just below the visual axis. Once the epithelium breaks down it is easy for potential infections and perforations to occur. We treat these patients aggressively with either frequent use of lubricants, amniotic membrane, or tarsorrhaphy to help the epithelium heal. Once the patient is stable and no longer having HED outbreaks we treat corneal scars by performing either full thickness or lamellar grafts to help improve the vision. Thankfully work is underway to develop a vaccine that will hopefully reduce the severity and frequency of HED infections.

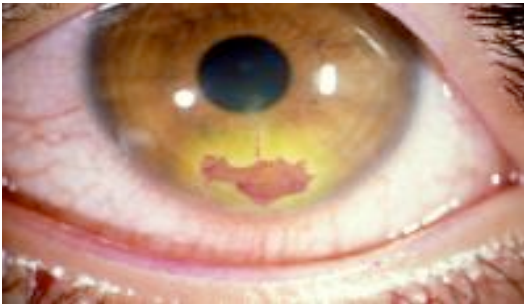

Fig. 5 Neurotrophic Corneal Defect

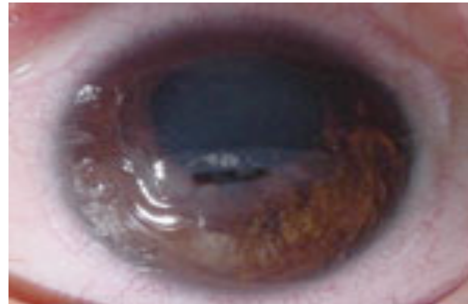

Fig. 6 Corneal Perforation

HED can be a challenge to treat but, like many other illnesses, the key to a good prognosis is early diagnosis and treatment. We hope this newsletter will be helpful to you and your patients and that you enjoy the rest of your summer!

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