Title: Neurotrophic Corneal Ulcer with Herpetic Keratouveitis masquerading as Posner-Schlossman Syndrome.

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Abstract: A patient presents with ipsilateral neurotrophic corneal ulcer a few weeks after treatment and improvement of Herpes Keratouveitis masquerading as Posner-Schlossman Syndrome.

Case History

- The patient is a 96 year old white male who presents with worsening symptoms of blurred vision, and redness in his right eye that previously improved with Pred-Forte 1% and timoptic .5% ophthalmic solutions.
- The patient’s ocular history consists of a working diagnosis of Posner Schlossman Syndrome
- Other ocular diagnoses include epiretinal membrane, normal tension glaucoma, pseudophakia and mild dry age related macular degeneration.
- His medical history consists of hypertension, pulmonary embolism, GERD, enlarged prostate, spondylosis, and seborrheic keratosis.
- Patient’s medications include acetaminophen, albuterol, finasteride, fluorouracil, furosemide, lisinopril, metoprolol, tamsulosin, triamcinolone acetonide, and warfarin.

Pertinent Findings

- Best correct vision is 20/400 right eye, 20/50 left eye.
- Right eye is notable for diffuse injection, stromal edema, diffuse keratic precipitates, there is a new midperipheral corneal ulcer, which appears to have heaped up smooth margins, slight peripheral staining. There is some central pooling with fluorescein, and no dendrites or end bulbs with Rose Bengal.
- A gram stain and corneal swab culture was positive for staphylococcus aureus.
- Pupil is round and reactive in the right eye and surgical in the left, equal in size for both.
- New cells with no flare present in the anterior chamber in the right eye.
- Normal iris with no rubeosis in both eyes. Anterior synechia in the left eye.
- Pressures are 22 mmHg in the right eye and 16 mmHg in the left

Differential Diagnosis

- Posner-Schlossman Syndrome was the initial diagnosis for the patient because many of the characteristics were present such as unilateral, elevated pressures with keratic precipitates and an open angle. However, due to the patient’s age, onset of cells in the anterior chamber, and the new onset neurotrophic corneal ulcer, it is more likely that this presentation is Herpes Zoster that masqueraded as Posner-Schlossman Syndrome.
Herpes simplex keratouveitis causes neurotrophic ulcers next to Herpes Zoster, however in this case, the patient’s age would lead one to think of Zoster.

Neuroparalytic keratopathy associated with a trigeminal lesion is another differential, however, the patient had no associated factors, manifestations, or problems with the other branches of the trigeminal nerve. Surgery near the root ganglia of the trigeminal can also cause neuroparalytic keratopathy, but the patient did not have surgery.

Medicamentosa from the steroid drops or pressure lowering drops may have desensitized corneal nerve endings and mechanical rubbing of the cornea could be enough to cause the neurotrophic ulcer as well, however, with the presence of associated keratic precipitates, it’s likely that it’s due to Zoster.

Facial nerve palsy causing exposure keratopathy may be a possible cause of a neurotrophic corneal ulcer, however, the patient did not exhibit typical signs of a seventh nerve palsy.

**Diagnosis and Discussion**

Previous visits showed definitive characteristics of Posner-Schlossman Syndrome: sudden onset, blurred vision, unilateral, initial eye pressure of 42 mmHg, corneal edema, similar colored irides, but no keratic precipitates, no anterior chamber cells or flare, no recurrent attacks, no facial lesions, and no corneal lesions for several visits.

The patient had previously shown signs of improvement with steroid treatment and pressure lowering drops, which led us to believe that it is a case of Posner-Schlossmann Syndrome.

However, with a new onset midperipheral neurotrophic ulcer and worsening keratic precipitates with anterior chamber cells, Herpes Zoster resulted in a change of diagnosis.

Herpes Zoster’s presentation varies widely but according to current epidemiology 38.2 percent of cases have corneal involvement of some kind. Approximately 16 percent present with corneal pseudodendrites and 12.8-31 percent develop neurotrophic ulcers, in particular in patients over the age of 60.

**Treatment, Management**

Treatment of a neurotrophic corneal ulcer, depending on its size and extent of corneal erosion, initially begins with heavy artificial tears and a bandage contact lens. Tarsography may be indicated in cases where a bandage lens is not viable. If the ulcer is significantly deep, using an amniotic membrane transplant can be considered. Penetrating keratoplasty can be an effective surgical procedure. The Boston Keratoprosthesis Type 1 Study Group results show that the Boston K-pro can be when penetrating keratoplasty is not an option.

When concurrent with herpetic keratouveitis needing topical steroids, a bandage contact lens may prevent efficacy and drug delivery. Keeping with preservative free artificial tears several times a day can be an effective way to treat.

Neurotrophic ulcers typically take many weeks to heal.

For the above patient, heavy preservative free artificial tears six times a day was given along with oral acyclovir 400 mg 5 times a day.
On the follow up visits, vision improved, trace cells were present in the anterior chamber, and keratic precipitates had lessened. A tapering schedule was initiated for the steroid drops and a maintenance dose of 400 mg BID of oral acyclovir was initiated and will be continued indefinitely.

Conclusion

- Herpes Zoster’s typical presentation of vesicular rash, a positive Hutchinson’s sign, unilateral iridocyclitis, keratic precipitates and pseudodendrites are signs that aid in the diagnosis. Zoster can also present without many of these findings making diagnosis elusive in some cases.
- Differential diagnosis can change as a patient’s clinical course changes despite improvement with treatment offered under the auspices of an incorrect diagnosis or masquerading signs.
- Future treatment options of neurotrophic corneal ulcers include eye drops containing RGTA, an analog of heparan sulfate, autologous serum, and nerve growth factor eye drops.

References

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