Managing the Blind, Painful Eye

A straightforward approach to this challenge.

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Many patients with unseeing eyes and unsalvageable vision ultimately experience mild to severe pain for a variety of reasons, yet the management of this condition varies widely. The negative impact of blind, painful eyes on patients' quality of life cannot be underestimated. This article briefly discusses the options for treatment and proposes a straightforward approach.

ETIOLOGIES OF PAIN AND VISION LOSS

Common causes of ocular pain include corneal decompensation and bullae, epithelial defects, uveitis, high IOP, and ocular ischemia. Neovascular glaucoma, angle-closure glaucoma, ocular trauma, and bullous keratopathy are often present. In many cases, the cornea becomes opaque.

WORKUP

A thorough clinical history and physical examination are essential to establishing the etiology and duration of vision loss and to determining a management strategy. Proper diagnosis entails fluorescein staining of the cornea, tonometry, and biomicroscopic examination for cell, flare, iris neovascularization, and intraocular tumors. B-scan ultrasonography may be the best modality of imaging available for eyes with opaque corneas. A computed tomography scan and magnetic resonance imaging are viable alternatives when B-scan ultrasound is unavailable.[1]

MEDICAL THERAPY

A good starting point in the treatment of a blind, painful eye secondary to elevated IOP is topical ocular antihypertensive medication, including prostaglandin analogues, carbonic anhydrase inhibitors, α-agonists, and β-blockers dosed at their standard frequency. Miotics are generally ineffective and may increase ocular irritation. That said, prostaglandin analogues are also prone to aggravating ocular inflammation.

In eyes with opaque or thick, scarred corneas, obtaining accurate tonometry measurements is challenging. The intraocular penetration of topical glaucoma medication may be inadequate as well. In our experience, aggressive IOP management is often unsuccessful. Many patients referred to us are administering three or four topical glaucoma drops daily but are achieving a minimal, if any, decrease in IOP; they only experience the systemic and local adverse effects associated with these drugs. Consequently, we generally recommend treatment with no more than two classes of aqueous-suppressant glaucoma medications in this subset of patients.

When the ocular pain is caused by uveitis or ocular ischemia, topical antiinflammatory drugs such as prednisolone acetate 1% dosed one to four times daily are excellent adjunctive medical therapy. Difluprednate is an excellent, but often more expensive, alternative to prednisolone. We also recommend using the cycloplegic agent atropine 1% twice daily to stabilize the blood-aqueous barrier and to provide additional pain relief from ciliary spasm.

In eyes with corneal decompensation, topical antibiotic steroid drops or ointments may be necessary to prevent ocular infection. Topical saline solutions or ointments may be considered in this clinical setting as well.

Our approach is to use as few topical medications as possible to achieve ocular comfort and quiet eyes. This strategy limits adverse events due to the medication and patients' out-of-pocket costs, and we find that it ultimately enhances their adherence to prescribed therapy.

RETROBULBAR INJECTION AND CORNEAL ANTERIOR STROMAL PUNCTURE

When medical therapy does not resolve the pain, we sometimes consider retrobulbar injections of either alcohol or chlorpromazine. With this potentially repeatable technique, 1 to 4 mL of lidocaine hydrochloride 2% (with or without epinephrine 1:100,000) is administered into the retrobulbar space. Classically, holding the same needle in place, either 1 mL of ethyl alcohol 50% to

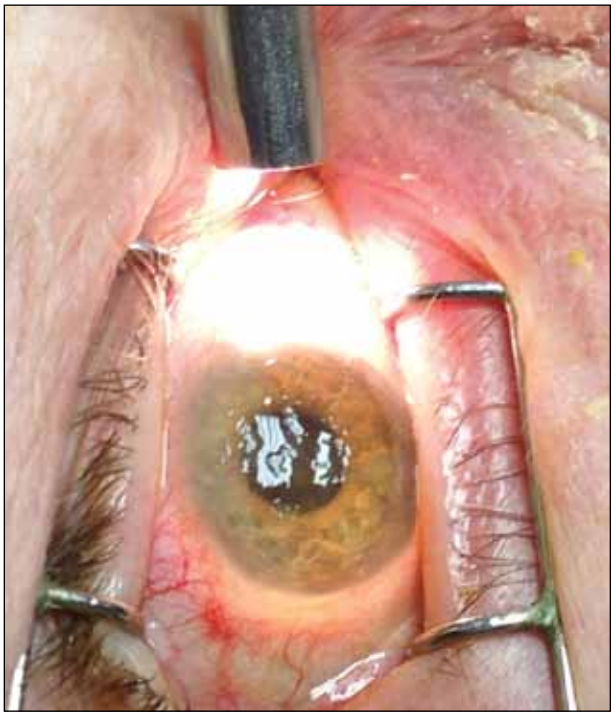

Figure. The surgeon uses transillumination to identify the ciliary processes.

100% or chlorpromazine 25 mg/mL is then injected into the same retrobulbar space using a 1- to 3-mL syringe. Retrobulbar alcohol injections generally control pain for 3 to 6 months. Retrobulbar chlorpromazine has been reported to control pain for a year or more.[2] Because the effect is temporary and because the treatment is associated with swelling of the eyelid, restrictive strabismus, and postoperative ptosis, however, we recommend this option only on rare occasions.

In eyes with corneal decompensation and poor visual potential, corneal anterior stromal puncture using a 27-gauge needle in the area of corneal bullae may effectively control ocular pain. Similarly to the traditional management of recurrent corneal erosions, we perform corneal anterior stromal puncture at the slit lamp as an in-office procedure. Patients receive topical antibiotics and a soft bandage contact lens postoperatively and use them until adequate corneal scarring and pain control are achieved. Tarsorrhaphy or Gunderson conjunctival flaps should be considered in eyes with neurotrophic corneal ulcers.

CYCLOPHOTOCOAGULATION

When blind, painful eyes are refractory to the medical treatments already discussed, we consider diode cyclophotocoagulation (CPC). Traditionally, due to the potential risks of phthisis bulbi and sympathetic ophthalmia, CPC has been reserved for eyes with uncontrolled IOP and minimal visual potential.

CPC allows clinicians to avoid incisional surgery and may be performed in the office setting with local anesthesia. With a transscleral approach, a G-probe treats the ciliary processes approximately 1.2 mm posterior to the limbus. We ablate 270° to 300° of the ciliary body. In an effort to minimize the risk of damaging the long posterior ciliary arteries and causing further anterior segment ischemia, we avoid treating the 3- and 9-o'clock positions. Transillumination techniques help surgeons to identify the ciliary processes and ensure more precise and effective laser treatment (Figure). Diode CPC may be repeated if the decrease in IOP is insufficient or temporary.

In eyes with no light perception, we typically avoid CPC due to the rare but real risk of sympathetic ophthalmia in the fellow eye.[3]

INCISIONAL SURGERY

Ultimately, patients with blind, painful eyes may choose evisceration or enucleation. Many oculoplastic surgeons prefer the former for cosmetic reasons. Enucleation is recommended when an intraocular tumor is suspected and a definitive histopathologic diagnosis is required.[4]

In clinical practice, we discuss evisceration/enucleation options early on with patients who have blind, painful eyes. Although we almost always begin with medical or laser treatment out of deference to patients' emotional and psychological well-being, we have found that evisceration or enucleation is actually the best

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Have you found that evisceration and enucleation are often the best options for patients with a blind, painful eye?

☐ Yes
☐ No

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option for many of them. In fact, some of our most satisfied and happy patients are those who have regained a normal appearance from well-performed evisceration and who no longer suffer from chronic pain.

We generally do not recommend incisional filtration or tube shunt surgery in these cases for obvious reasons.

CONCLUSION

Managing the blind, painful eye can be challenging for physicians. We recommend a step-by-step treatment strategy that minimizes the use of topical medication. We generally start with a topical antiinflammatory drug and, potentially, a limited number of glaucoma medications. Corneal anterior stromal puncture is an effective means of controlling pain in eyes with corneal decompensation, whereas diode CPC is an excellent option for eyes with elevated IOP and poor visual potential. We recommend evisceration or enucleation when the blind, painful eye is unattractive or responds poorly to medical or laser therapeutic modalities. We do not recommend retrobulbar injections or incisional glaucoma surgery to the vast majority of these patients. ■

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