Pacific Vision Institute:

eFocus

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Hyperopic refractive surgery: a different story than myopes

Scott Lee, OD, Director of Clinical Care, Pacific Vision Institute

Hyperopes heal differently than myopes. Myopes typically have good distance vision postop, but it may regress during the first 6 months in some patients, at which point they may be considered for enhancement. Hyperopes, on the other hand, start with mild myopia postop and may require glasses for driving. Many hyperopes, however, are not bothered by their postop myopia – they can see small things up close that they haven't been able to see for a long time. As their eyes heal, they typically regress toward plano and start needing reading glasses if they are presbyopic. Hyperopes stabilize between 6 months and a year. We perform enhancements, if necessary, close to a year postop.

We can correct up to +6.00D hyperopia with up to -5.00D astigmatism. Instead of flattening the cornea, the laser steepens it. This creates a different interaction between the residual stroma and the flap. With myopic treatments, the vision stabilizes after 3 months and 20/20 can be achieved the following day. Hyperopic treatments, however, can take 6 months to stabilize and the vision can take 2-3 months to improve to 20/20. Even though it takes longer for hyperopes to stabilize, they tolerate mild postoperative refractive error more than myopes.

Unlike myopes, hyperopes typically have strong accommodative amplitudes. If the patient ends up a bit near-sighted, a cycloplegic refraction is a MUST to rule out accommodation. If accommodative spasm is detected, vision therapy can help improve the distance vision. The enhancement rate is higher for hyperopic corrections than it is for myopes due to the shape of the ablation.

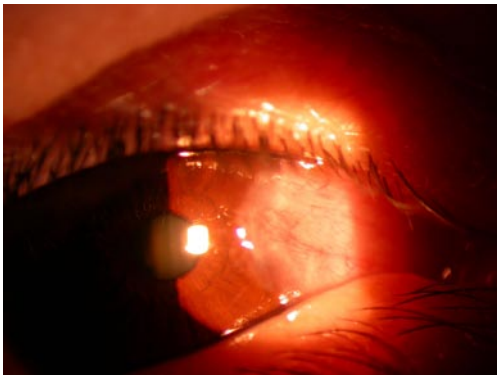
Properly counseling the patients before surgery can lay the groundwork for a better recovery. I explain to the patient that the distance vision will be blurry at first and they should only do what is within their own comfort level. Distance vision tasks should be possible, but more difficult to do. If the patient is having difficulty, a pair of temporary distance glasses can be used as long as they know that the prescription will change a good amount during the first 1-2 months. A slightly undercorrected prescription may last them longer. If the patient is presbyopic, I warn them not to get spoiled by the good near vision in the first months since it will only be temporary. I then add that reading without glasses will ultimately be a bit better than it was before the surgery because we're treating the far-sightedness. It's like reading through their distance prescription.

Hyperopes can be just as happy as the myopes after LASIK as long as they are patient patients.

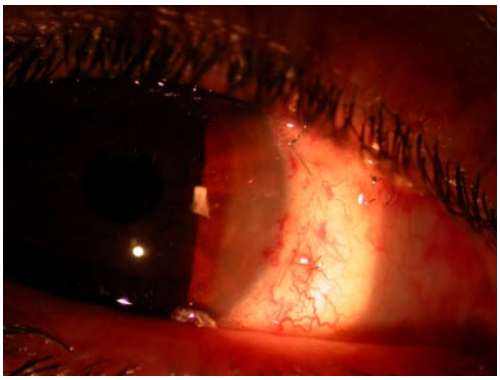
Surgery for Pterygium: indications, results, postop care

Ella G. Faktorovich, M.D., Director Corneal and Refractive Surgery Pacific Vision Institute

Pterygia are rarely asymptomatic. Their appearance bothers patients. They often cause irritation and difficulty with contact lens wear. They may induce astigmatism and frequently become inflamed with the slightest provocation. Patients often seek a definitive solution and, fortunately, we can offer it to them.



Pterygium before excision



Pterygium after excision with conjunctival autograft and limbal stem cell restoration. Few small sutures are still present. They are removed at two weeks postoperatively.

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Most primary pterygium surgery is now performed with the conjunctival autograft. It's often done in the same day surgery center with intravenous sedation and local anesthesia. It takes about 45 minutes. The pterygium is removed, the bare sclera area is measured, then a very thin conjunctival autograft is harvested from the superior bulbar conjunctiva of the same eye and is transplanted to cover the bare sclera. I typically include the limbal stem cells with the graft and take care in apposing them to the limbus where the pterygium was removed. I consider pterygium a limbal stem cell disorder. Therefore, to minimize the recurrence, it's important to transplant healthy stem cells (typically from the superior conjunctiva which then repopulates with the adjacent epithelium). I suture the autograft to sclera with up to 10 nylon sutures. The eye is patched overnight.

The patch is removed the next day and the patient starts Vigamox QID (until both cornea and conjunctiva re-epithelialize, typically less than a week) and Pred Forte QID. Patient uses Pred Forte QID for a month, then BID for a month. Sutures are removed at 2 weeks postop at the slit lamp in the office.

Patients can typically go back to work in a few days. Their vision will be blurry for about a week. Their eye will be red for several weeks and then slowly resume normal appearance. Recurrence rate with the autograft is less than 3%. For recurrent pterygium, I use intraoperative Mitomycin C in addition to another conjunctival graft – perhaps from the other eye.

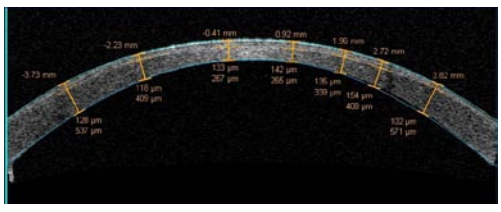
If a patient with pterygium is considering cataract, lens, or corneal refractive surgery, the pterygium typically needs to be removed first because it can induce refractive error (especially astigmatism). Refractive surgery can be performed 3 months after pterygium excision or when the postop refractive error stabilizes.

UV protective eye wear is essential to minimize incidence of recurrence.

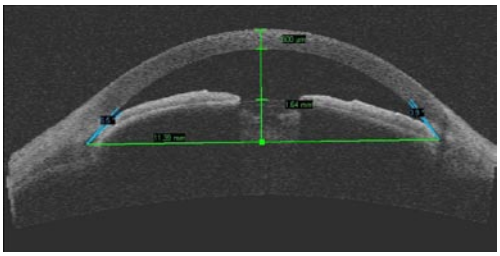
High Resolution Corneal & Anterior Segment CT Scan

Pacific Vision Institute is the first center in Northern California to offer its affiliated doctors a unique diagnostic tool – **Corneal and Anterior Chamber Optical Coherence Tomography** with the most advanced imaging device available, Visante OCT Scan. Anterior segment OCT allows us to image the cornea, the iris, the angle, and the lens with microprecision accuracy. We can determine **accurate corneal thickness** in multiple locations on the cornea simultaneously. We can visualize both the anterior and posterior cornea. We can **rule out early keratoconus**. We can determine precise thickness of the corneal bed after LASIK. We can diagnose iris lesions, **measure angle depth**, and **analyze lens changes with accommodation**. Visante OCT is the most effective adjunct to traditional topography in measuring corneal thickness and shape to rule out keratoconus.

Pacific Vision Institute will begin **hands-on training workshops** for the affiliated doctors in May. Please contact your practice development specialist or the main PVI number (415-922-9500) to reserve your place.



Visante OCT scan of post-LASIK corneal thickness in multiple corneal locations. Both the flap and the residual corneal thickness are identified to determine if the patient can have an enhancement.



Visante OCT image of the anterior segment measuring precise depth of the shallow angle.

2006 calendar of the Upcoming Events for PVI Affiliated Doctors:

05/08/06: Anterior segment OCT workshops begin
07/19/06: PVI Grand Rounds - Cataract and Refractive Surgery
08/02/06: Staff Training
09/20/06: PVI Grand Rounds - Glaucoma
10/18/06: Staff Training
11/15/06: PVI Grand Rounds - Retina

Sight Gags *by Scott Lee, O.D.*

Once again, Medusa needs to find herself a new optometrist.

Note from the Editor-in-Chief: *Thanks for reading and your continued interest in the latest in high technology eye care. We always appreciate your comments and feedback!* drlee@pacificvision.org.