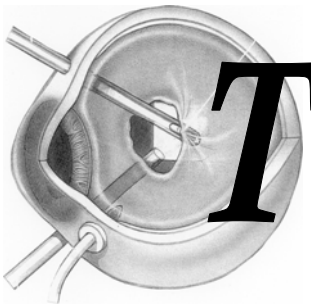
Volume V, Number 1

Spring 2004



The Light Pipe

The newsletter of Georgia Retina, P.C.

New Use for an Old Drug

During vitrectomy surgery we are often called upon to peel membranes that are almost completely invisible, and whose presence almost has to be imagined. For example, in cases of PVR (proliferative vitreoretinopathy) there are fine sheets of scar tissue which bind the retina into fixed folds, contracting it and wrinkling it. These membranes must be completely removed in order to allow retinal reattachment. In recent years retinal surgeons have begun to peel the internal limiting membrane (ILM) to help relieve traction in selected cases of macular holes. The ILM is an otherwise completely transparent structure, which is colorless and very difficult to even see under a microscope. We have used ICG (Indocyanine Green) dye to aid in visualization of the internal limiting membrane (ILM) during vitrectomy surgery. There have been concerns raised (although not proven) regarding potential toxicity of ICG dye to the RPE. ICG dye has also been shown to be retained in the retina for as long as a year after surgery.

As an alternative method, we have recently begun to use Kenalog (triamcinolone acetonide) injected into the vitreous cavity. As you know this is a white powdery suspension. The white particles seem to adhere to transparent residual cortical vitreous, PVR membranes as well as the ILM. When we inject this into the eye it looks like snow, and after the excess is vacuumed off the surface it facilitates visualization of these fine structures. Several Japanese reports have shown the method to also be useful in cases of proliferative diabetic retinopathy. An anterior chamber cell/flare meter suggested that there was also significantly less breakdown of the blood/ocular barrier in cases where the triamcinolone was used. A report from Italy also showed no adverse effects. Our initial experience with this technique has been positive. Our hope is that this method will allow more complete and possibly safer removal of epiretinal proliferation, the invisible posterior hyaloid, and ILM.

Toxoplasmosis: What Are Today's Treatment Options?

Toxoplasmosis is the most common cause of posterior segment inflammation worldwide. The protozoan parasite Toxoplasma gondii is the organism responsible for this necrotizing retinochoroiditis. A sudden unilateral decreased vision arising from a unifocal area of inflammation adjacent to a pigmented scar is virtually always of toxoplasmic origin.

Even though no controlled studies have been designed to prove the efficacy of treating toxoplasmosis retinochoroiditis, most practitioners still implement treatment when the lesion is extremely large or the lesion is threatening the macula or optic nerve. To date, no treatments offer a cure, and all treatment regimens have their particular side effects. Remember, the infection is usually self-limited, so without treatment it will resolve spontaneously, although recovery will probably be slower and it may leave a larger scar in its wake.

For almost 50 years, therapy has consisted of pyrimethamine (Daraprim™), sulfadiazine and folinic acid,

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Dislocated IOLS's

Occasionally lens implants become dislocated into the vitreous during insertion or shortly thereafter, and require additional surgery. For the cataract surgeon this is always a distressing experience and requires that one deal delicately with patients, whose expectations have been raised to think that cataract surgery is a quick and easy procedure. The exercise of restraint in making any immediate attempt to retrieve the lens from the vitreous will serve the patient best, as there is a significant risk of creating a retinal break or retinal detachment if it is removed without a fairly complete vitrectomy.

We will summarize our approach to this problem. In general, this is not an emergency in the sense that re-operation must be performed immediately. Surprisingly, an IOL in the vitreous cavity does not usually traumatize the retina or result in retinal tears or detachment. In fact, there have been cases where an anterior chamber lens have been implanted without ever removing a dislocated lens, so that patients have lived with two lenses in an eye.

The lens implant tends to settle into the inferior vitreous base and become entangled in the vitreous. One cannot simply pull it out. When we perform pars plana vitrectomy, the connections of the vitreous to the lens are evident from the jiggling movements of the lens as a result of the vitreous cutter pulling on it. It is necessary to perform a complete pars plana vitrectomy and to extricate the lens from its vitreous entanglements. Once the lens falls free onto the posterior pole it can be extracted or repositioned. Sometimes, when the lens is freed from the vitreous base, it then becomes stuck in the posterior cortical vitreous. If no posterior vitreous detachment has occurred, the next step is to create a PVD. Once the lens is free, it can be grasped with intraocular forceps and either removed or repositioned. If there is not an adequate rim of capsular support, the lens must be removed and exchanged for an AC IOL. The lens must first be brought up into the anterior chamber through the pupil. This is a tricky maneuver that often requires two pairs of intraocular forceps, as well as a transition from a posterior viewing system such as the BIOM or a contact lens, to the coaxial illumination of the microscope, which allows an anterior viewing. Once in the anterior chamber the lens may be either repositioned or brought out through a limbal or clear corneal incision.

In cases where there is a shelf of adequate anterior capsular support, a Sinskey hook or similar manipulator is inserted through a limbal paracentesis, the lens rotated to a desirable orientation. The haptics are then compressed against the optic one at a time, and released into the sulcus. In cases such as this, no suturing is necessary. Of course a posterior chamber lens may be fixed in the sulcus with a number of suturing methods. These are somewhat more tedious and may not be particularly advantageous over exchange for an anterior chamber IOL.

Of course, patients who undergo a second procedure within a short time of their primary procedure are at increased risk of developing CME (cystoid macular

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Atul Sharma, M.D.

Georgia Retina

Welcomes

Atul Sharma, M.D.
and
Sean Koh, M.D.

Summer 2004

Sean Koh, M.D.

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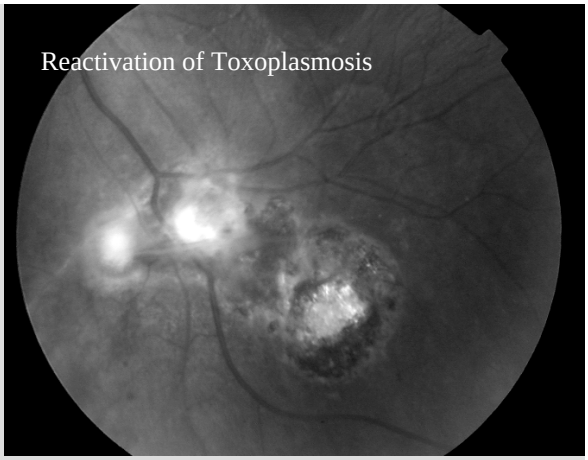

Reactivation of Toxoplasmosis

and prednisone ("triple-therapy"). The antibiotics combat the infection, and prednisone decreases the inflammation. It has always been thought that steroids should not be used in the absence of antibiotic coverage, due to risk of uncontrolled necrotic destruction.

The problems with the most popular triple-therapy regimen are two-fold: the side effects of the drugs, and difficulty procuring the drugs. The side effects can be life-threatening. Pyrimethamine can cause bone marrow depression, so folinic acid is added to the regimen to blunt that effect, but a periodic blood count is prudent. Sulfadiazine, like other sulfonamides, can cause hypersensitivity reactions (skin rash, fever, bone marrow depression, and malaise), or even Stevens-Johnson syndrome. Sulfadiazine is difficult to find and has to be specially ordered or compounded.

With that in mind, alternative drug regimens have been explored. Clindamycin combined with prednisone has been utilized for over 20 years. We commonly use it ourselves as primary treatment, but strongly warn patients to be on the lookout for diarrhea or blood in the stools. This could herald the onset of potentially life-threatening pseudomembranous colitis. When clindamycin is combined with the conventional triple-therapy, this is nicknamed "quadruple-therapy".

Bactrim™ has been suggested as a single agent therapy, but the report advocating its use was compromised by the small size of the study. Only 4 of 16 patients were actually given Bactrim™ as a sole agent, and it was acknowledged that these four patients had minimal disease. Therefore, its use as a sole agent remains unproven, although in combination with other agents such as clindamycin it may be a useful adjunct.

The substitution of azithromycin (Z-Pak™) for sulfadiazine has proved to be a promising approach. Initially azithromycin was hoped to cure toxoplasmosis since it inhibits tachyzoite replication. Unfortunately azithromycin did not achieve that goal, but in comparing older style triple therapy to this modified triple-therapy, patients seem to tolerate the regimen with less frequent and less severe side effects. Unfortunately, cost must enter into the decision making, since a four-week course of azithromycin (250 mg per day) costs $272.99 (CVS Pharmacy) and some patients require four additional weeks of therapy.

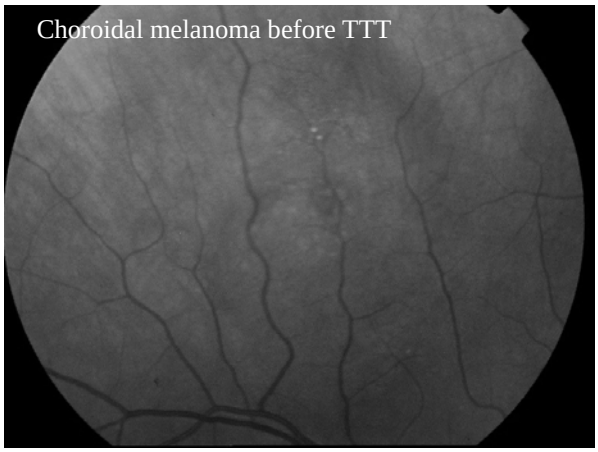
Atovaquone (Mepron™), an agent that has activity against the encysted stage (bradyzoite) of Toxoplasma, also looked promising as a potential cure. While it also failed to meet these expectations when used in clinical studies, a non-randomized open label study of 17 patients showed that this therapy combined with prednisone seemed to be effective. However, applicability of this study is limited because it failed to compare Mepron™ to any of the other regimens directly. Mepron™ is even more outrageously expensive: a three-month course of therapy, which is the recommended duration, is over $6,000.00 (CVS Pharmacy). The cost of the drugs may not be covered by insurance.

At present, triple-therapy, quadruple-therapy, and clindamycin/ Bactrim™ /prednisone treatment all seem to be equally useful. Incorporation or substitution of azithromycin or atovaquone still warrant consideration. At this point we await the development of a safe antiparasitic agent that will cure the condition by eradicating the organism.

Retinal Pearls Symposia
Now in the planning stages
Watch your mailbox for more details!

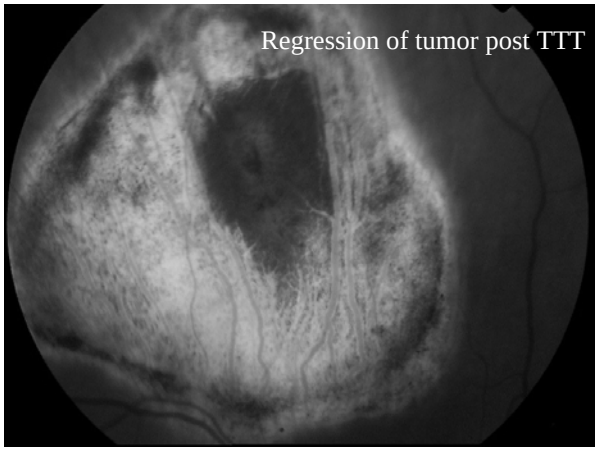
Transpupillary Thermotherapy for Posterior Choroidal Melanoma

The popularity of Transpupillary Thermotherapy (TTT) as a mainstream treatment increased a few years ago when this laser technique began to be used for choroidal neovascularization. It has also has been shown to be effective as both an adjuvant and primary treatment for small pigmented choroidal melanomas.


Choroidal melanoma before TTT

TTT is based on the concept of tissue hyperthermia where tissue is heated to a desired level to destroy dividing cells. Deeper tissue penetration is achieved by slowly heating rather than photocoagulating the tissue. The availability of a slit lamp system capable of delivering hyperthermia to the posterior segment through the pupil creates a non-invasive method of destroying pigmented tumors of the choroid. The traditional treatment of posterior choroidal melanoma is radiation treatment delivered either through external beam radiation or by suturing a radioactive plaque to the globe. The long term effects of radiation can be devastating to the retina and optic nerve. Logically, a less invasive method of treating small tumors while limiting collateral damage to the retina and optic nerve is desirable.

A diode laser in the near infrared wavelength of 810 nm can be used with a slit lamp delivery system to heat lesions in the choroid, particularly if they are posterior to the equator. The endpoint of the treatment is not a deep white coagulation. Rather a visible graying of the retina at the end of a 60 second burn is suggested as the desired endpoint. This is believed to achieve a gradual increase in tissue temperature and may be more effective at achieving deeper tissue penetration and minimal coagulation of superficial layers.


Regression of tumor post TTT

TTT was originally described as an adjuvant therapy for the treatment of posterior choroidal melanoma. The original papers used TTT in conjunction with radioactive plaque therapy. Latter histological studies showed penetration depths of up to 3.5mm and suggested its use as a primary treatment. Since the publication of these papers, TTT has been used as a primary treatment for select small (<3mm) pigmented choroidal tumors. We routinely use TTT as a primary treatment for tumors less than 3mm in thickness when they are amenable to slit lamp delivery of laser. We always discuss and offer radioactive plaque therapy as a primary treatment, but for

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small well pigmented tumors TTT has been our treatment of choice. Most patients, given the option of an invasive treatment or a simple office procedure, of course will opt for the office procedure.

A report published by Shields et. al. last year provided the longest follow up to date of peripapillary choroidal melanomas treated with TTT as a primary treatment. The 3-year success rate was suggested to be over 90% and no metastatic disease was reported. More recent reports have suggested a large number of local recurrences with TTT. TTT can have deleterious effects on vision. Decreased vision can occur from laser scotomas, branch retinal vein and artery occlusions and epiretinal membranes. The effects can be severe and permanent, particularly if vascular related.

While TTT is an attractive alternative for small tumors because it is convenient and much less invasive, long term follow up data are needed. A higher recurrence rate and the possibility of vision loss may cause the popularity of this procedure as a primary treatment to wane. In summary, TTT can be used as a primary treatment for a very select group of small posterior pigmented choroidal tumors. All patients should at least be offered radioactive plaque therapy since it may be more invasive but also more definitive.

Our Physicians

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and soon to come

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Sean Koh, M.D.

(Continued from page 2)

edema) and corneal edema and do have some risk of retinal detachment. Their recovery is gradual and at times they require several months to reach their full visual potential, but usually, these cases have a good prognosis.

Update on Clinical Trials at Georgia Retina

The Genentech trial of Rhu Fab (MARINA study) is proceeding well and enrollment is now closed. Georgia Retina was the *highest enrolling clinical center in the eastern United States*, with 15 patients enrolled. Of course the trial is double masked and results will not be available until after the trial is completed in two years. We sincerely the contribution that each of you has made by supporting this trial.

The Eye Tech phase III clinical trial of Eye 001 (Macugen), comparing Macugen to PDT has been cancelled by the sponsor. At the present time we are awaiting an update regarding FDA approval of Macugen.

The Immusol study of Vit 100 (chimeric Ribozyme to PCNA as an inhibitor of recurrent PVR – proliferative vitreoretinopathy) has had slow enrollment due to the relatively less common occurrence of PVR. Any patients with retinal detachment and fixed folds in two quadrants (C2 or greater) in the absence of other ocular disease was eligible, but enrollment is now also closed, and patients are being followed.

Coding Alert

For those people who are employing retina thickness analyzers or OCT devices in their office, remember that recording and printing the image is strictly considered the technical component of the study. A formal written interpretation must appear on the chart to meet the professional component. Without a written interpretation on the subject, an insurance company or Medicare/Medicaid may retrospectively reduce your payment by a considerable amount for these services that you provided and require a refund.

Georgia Retina is opening a 6th office. This will be located in Lawrenceville. We anticipate opening in early fall and are looking forward to serving your patients even closer to home.

We participate in the following insurance plans :

Aetna US Healthcare
AHI Healthcare Systems
American Preferred Provider
BCBS of Georgia
Beech Street
Blue Choice PPO, POS and HMO
Caduceus Healthcare
CCN PPO
Champus Tricare
Choice Care
Cigna (PPO & HMO)
Companion Work Place
Corvel
Coventry Healthcare
Evolutions Healthcare System
First Health
Formost
Galaxy Health Network
Georgia First
Georgia Better Healthcare
Healthcare, Inc.
Healthstar
Health Network America
Highway to Health
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Integrated Health Plan
Medicaid - EDS
Medicare - BCBS of Alabama
Medicare Railroad
Medical Resource Network
One Health Plan
Preferred Plan of GA PPO, EPO
Private Healthcare Systems PHCS
Pro American
Pronet PPO
Promina Employee Benefit Plan
(HMO / POS)
Prudential Healthcare HMO, PPO
Prudential Emory & Select Care
Southcare PPO
State Health Benefit Plan
(First Medical Network)
Unicare
United Healthcare
(Metrahealth PPO, EPO, POS)
USA Managed Care Organization

Other plans are pending,
please call to see if we are participating
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