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## News in Review

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#### Beware Floppy Iris During Phaco

Of the 16 million Americans aged 60 and older who have cataracts each year, a good many of them also have another common condition of aging: benign prostatic hypertrophy. More than 4 million times a year, elderly American men ask a doctor for help with BPH.

Recently two California ophthalmologists discovered that the BPH drug Floma (tamsulosin) causes iris complications during phacoemulsification. (Interestingly, Flomax is prescribed for some women with urinary retention.)

The pair's peer-reviewed paper on what they call intraoperative floppy iris syndrome (IFIS) is being rushed into print this spring.<sup>1</sup> And a January summary of their findings in a trade magazine sent cataract surgeons to online chat groups for advice on how to identify and deal with the condition.

Fortunately, authors David F. Chang, MD, of Los Altos, and John R. Campbell, MD, of San Rafael, had answers:

- Ask patients before cataract surgery if they're taking Flomax, and discontinue the drug for one to two weeks before surgery. This can lessen the iris's floppiness, though not eliminate it, the authors found. Any prior history of Flomax use is important because IFIS cases can still occur in those who discontinued the drug as long as one to two years before cataract surgery.
- Inquire about Flomax if the pupil dilates poorly at the time of surgery. "At that point, you still have time to modify your surgical plan," said Dr. Chang.
- Common techniques such as mechanical pupil stretching or partial thickness sphincterotomies won't work for IFIS, according to Dr. Chang. "The pupil will not expand and will still prolapse and progressively constrict during surgery."
- Disposable iris retractors or pupil expansion rings are the best way to maintain a larger pupil. Iris retractors should be placed in a diamond configuration, as described by Oetting and Omphroy in 2002.<sup>2</sup>

Drs. Chang and Campbell cautioned that iris prolapse by itself isn't enough to denote IFIS. The syndrome is defined by a combination of three consistent characteristics: a floppy iris that billows in response to normal intraocular fluid currents, a strong propensity to iris prolapse and progressive miosis intraoperatively. "There are other causes of iris prolapse or of intraoperative miosis," said Dr. Chang. "However, it is this triad of features that indicates that you are dealing with IFIS due to Flomax."

Dr. Chang said he sees no need for urologists to stop prescribing Flomax for their patients with BPH at this time. "Iris retractors or other pupil expansion devices will assure a large pupil size throughout surgery in IFIS eyes," he said. "Surgeons typically don't use these devices for most small pupil cases because they are more expensive, time-consuming and harder to insert after the capsulorhexis has been created." Other ophthalmologists have suggested using Healon 5 with low aspiration parameters.

"By knowing in advance when IFIS will occur, surgeons will be able to alter their usual method of small pupil management," he said. "As long as ophthalmologists know how to anticipate and manage IFIS, there is no reason why Flomax patients shouldn't have excellent results from cataract surgery."

Dr. Chang is planning a multisurgeon prospective follow-up study to assess this prediction.

1 Chang, D. and J. Campbell. *J Cataract Refract Surg* 2005; issue undetermined at *EyeNet's*

press time.

2 *J Cataract Refract Surg* 2002;28(4):596–598.

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### What Causes IFIS?

Flomax is the most uroselective of the alpha<sub>1</sub>-adrenergic receptor antagonists, which improve urine flow by relaxing smooth muscle in the prostate and bladder neck. For this reason, the drug long has been preferred because it decreases the risk of orthostatic hypotension in elderly men, said Dr. Chang.

There are three known alpha<sub>1</sub> receptor subtypes: A, B and D. Of the drugs in this class, including Hytrin (terazosin HCl) and Cardura (doxazosin mesylate), only Flomax is highly selective for the alpha<sub>1A</sub> subtype, which predominates in the prostate. The literature shows that alpha<sub>1A</sub> is also the main receptor subtype that mediates contraction of the iris dilator muscle in rabbits, said Dr. Chang. He and Dr. Campbell hypothesize that Flomax not only blocks the iris dilator muscle but also causes a semipermanent loss of muscle tone. This results in floppiness of the iris stroma that leads to billowing, prolapse and progressive miosis during cataract surgery. Some degree of dilator muscle atrophy would explain why IFIS still occurs in some patients who have been off Flomax for as long as two years.

### Glaucoma Update

#### **Ocular Changes Occur in Some Menstruating Women**

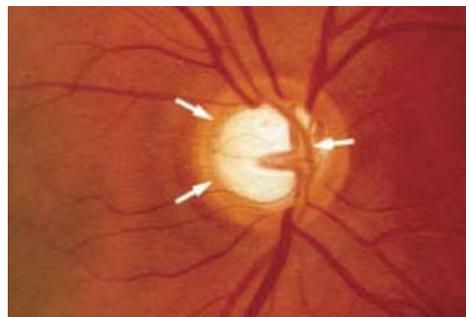
The menstrual cycle appears to correlate with measurable changes in the optic nerve head and poorer performance on the most sensitive type of visual field test, suggesting a need for clinicians to consider this in interpreting such changes in their younger patients, according to a pair of studies by Turkish researchers.

The group, from the department of obstetrics and gynecology at Akdeniz University in Antalya, Turkey, detailed the changes they measured as estrogen declines and progesterone rises in the menstrual cycle's luteal phase.<sup>1, 2</sup>

In the first study, they used a scanning laser ophthalmoscope to examine the optic nerves of 38 healthy young women in the follicular, ovulatory and luteal phases of their menstrual cycles.

They found the disc area did not change during the cycle, but the neuroretinal rim area decreased significantly in the luteal phase. In the same phase, the linear cup-to-disc ratio, cup-to-disc area ratio and cup area all increased significantly.

The second study used standard achromatic perimetry (SAP) and short-wavelength automated perimetry (SWAP) to test 59 young women during the follicular and luteal phases of their menstrual cycles.



**Caption:** During the luteal phase of the menstrual cycle, women may show increased optic disc cupping and poorer results on the most sensitive type of visual field test.

SWAP revealed a significantly decreased mean sensitivity value in the women during the luteal phase ( $P < 0.05$ ), but no statistically significant change with SAP.

Brian A. Francis, MD, assistant professor of ophthalmology at the University of Southern California, concluded, "Clinicians should be aware of a patient's hormonal status (both endogenous and exogenous) when evaluating them for glaucoma diagnosis and progression."

1 Akar, M. E. et al. *Acta Ophthalmol Scand* 2004;82(6):741–745.

2 Akar, Y. et al. *Ophthalmologica* 2005;219(1):30–35.

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## Eye and Body

### Retinopathy May Signal Heart Trouble

Retinopathy in a patient might signify systemic microcirculatory problems that could lead to congestive heart failure (CHF), especially if the patient doesn't have diabetes or hypertension, the Atherosclerosis Risk in Communities (ARIC) study has concluded.<sup>1</sup>

Over seven years, CHF was three times as likely to occur in these healthy-seeming patients than in their peers without retinopathy lesions.

Even in patients who did have cardiovascular risk factors such as diabetes, hypertension and smoking, the presence of retinal lesions doubled their adjusted relative risk for CHF, the ARIC study found. The impact was especially important in diabetics.

ARIC is a population-based, prospective cohort study that followed patients for seven years during the 1990s. Retinal photographs of 11,617 subjects were graded and correlated with medical and death records.

The results add congestive heart failure to the list of larger cardiovascular system problems at which a retinal examination can hint. The list includes: coronary heart disease and the inflammation and endothelial dysfunction that lead to plaque formation in blood vessels.

The authors re-emphasize referring patients for cardiovascular follow-up. Retinal exams might be able to improve risk prediction for CHF, they write. "In particular, patients with diabetes and signs of retinopathy may benefit from further assessment of CHF risk, such as echocardiography to detect asymptomatic left ventricular dysfunction, if clinically indicated."

1 Wong, T. Y. et al. *JAMA* 2005;293:63–69.

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### Retina Report: Triamcinolone Trials Test New Drug Delivery Route

Enrollment is under way for two clinical trials that will evaluate the safety and efficacy of an increasingly popular treatment for macular edema that ophthalmologists have been delivering off-label. The NEI-funded trials will test a new formulation of the steroid intravitreal triamcinolone acetonide (Kenalog) designed for injection into the eye.

Intravitreal delivery as a route of administration for such posterior segment diseases as retinal vein occlusion, diabetic retinopathy and AMD is "something that is relatively new and very exciting," said Ingrid U. Scott, MD, MPH, associate professor of ophthalmology at Bascom Palmer.

Optical coherence tomography makes it possible to document such anatomic abnormalities as intraretinal cystic changes and vitreomacular traction in patients with macular edema, said Dr. Scott. Now two randomized trials will put the efficacy of the new treatments to the test.

One trial, the **S**tandard Care vs. **C**orticosteroid for **R**etinal Vein Occlusion (SCORE) study, is

enrolling patients with macular edema associated with central and branch retinal vein occlusion. The other, conducted under the auspices of the Diabetic Retinopathy Clinical Research Network (DRCRnet), is enrolling patients with diabetic macular edema.

Both trials test the same drug and the same route of administration for the same condition. But because the etiologies are different, the outcomes are likely to be different, said Dr. Scott, who is co-chairwoman of SCORE and a steering committee member for both studies.

"Vein occlusion is a more acute event, whereas diabetic retinopathy is a manifestation of a chronic disease," she explained. "In addition, branch and central retinal vein occlusions differ in natural history and response to laser treatment for macular edema. Thus, the number of injections administered, the efficacy of and the risk and severity of adverse events associated with intravitreal triamcinolone may differ depending upon the etiology of macular edema."

Potential injection-related risks include endophthalmitis, retinal detachment, vitreous hemorrhage and lens injury. Drug-related risks include elevated IOP and cataract formation or progression.

Dr. Scott urges ophthalmologists to refer appropriate patients to one of the studies, because "only prospective, randomized, controlled clinical trials can tell us whether intravitreal triamcinolone is safer and more effective than standard care."

SCORE patient eligibility criteria and a list of clinical investigators are available at <http://spitfire.emmes.com/study/score/>, or call 301-251-1161.

DRCRnet study information may be found at [www.drcr.net](http://www.drcr.net).

—Miriam Karmel

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*News compiled by Linda Roach.*

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