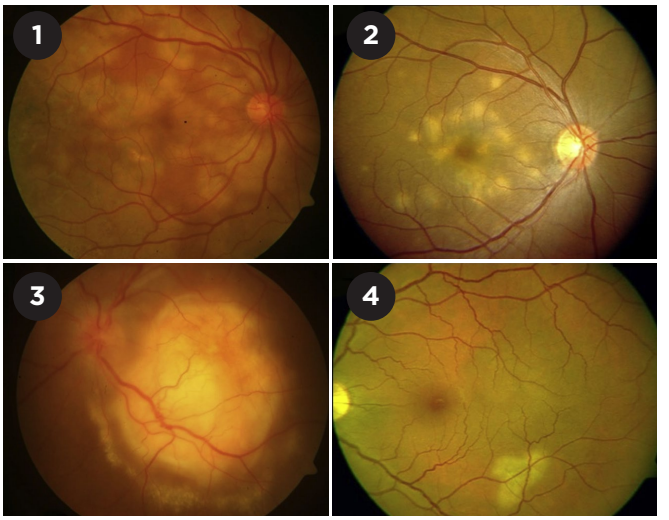
UVEITIS

Consensus on Managing Tubercular Uveitis



TUBERCULAR CHOROIDITIS. *The spectrum of choroidal involvement ranges from (1) tubercular serpiginous-like choroiditis to (2) tubercular multifocal choroiditis, (3) tuberculoma, and (4) tubercular unifocal choroiditis.*

ANTITUBERCULAR THERAPY (ATT) has been shown to be effective in reducing recurrences of tubercular uveitis in nearly 86% of patients.[1] Yet some physicians remain reluctant to initiate treatment.

"Ocular tuberculosis remains a challenge all over the world, as the diagnosis is largely presumptive due to lack of positive histopathologic confirmation," said Vishali Gupta, MD, at the Advanced Eye Centre in Chandigarh, India. "In several countries, ophthalmologists have to refer these patients to infectious disease experts or physicians who refuse to start ATT for lack of confirmed diagnosis. This can lead to multiple recurrences [of disease], resulting in increased ocular morbidity and visual loss," said Dr. Gupta.

Enter consensus guidelines on initiating ATT. To limit confusion, a team of international experts from the Collaborative Ocular Tuberculosis Study (COTS) has issued consensus guidelines on initiating ATT in several clinical scenarios.[2] The guidelines suggest that clinicians take the following steps:

- First, ascertain whether the clinical presentation in the eye is suggestive of TB.
- Second, consider whether the patient lives in a TB-endemic region (defined as having an incidence of more than 100 cases per 100,000 persons). Consensus was more robust for endemic regions.

"It is also important to rule out other possible etiologies in the differential diagnosis, as TB can mimic several other varieties of uveitis," both infectious and noninfectious, Dr. Gupta said.

- Once ocular TB is suspected, order an immunologic test—a tuberculin skin test and/or an interferon-gamma release assay.
- In the three subtypes of tubercular choroiditis—tubercular serpiginous-like choroiditis, tuberculoma, and tubercular focal or multifocal choroiditis—any positive immunologic test plus radiologic signs of active or healed pulmonary tuberculosis justifies initiation of ATT.
- In endemic regions, a positive result from a single immunologic test is sufficient to initiate treatment of tubercular serpiginous-like choroiditis or tuberculoma, even without radiologic features suggestive of tuberculosis.

When to use adjunctive therapy for inflammation. There is strong agreement to start oral corticosteroids with, or soon after, initiation of ATT in patients who have tubercular serpiginous-like choroiditis or tuberculoma (with no associated systemic infectious disease). But opinion is mixed regarding the timing of initiating oral corticosteroids in patients with tubercular multifocal or unifocal choroiditis.

And a caveat. Beware of potential drug interactions when combining ATT with various immunosuppressive drugs. When in doubt, consult the patient's internist.

Impact on practice. Dr. Gupta now has more confidence in making decisions about initiating ATT, particularly in borderline situations. "Earlier, I was not sure whether or not I should start ATT. But after this consensus, I have started treating these patients, even though only one test is positive," she said. "The guidelines have made a difference in my practice patterns."

—Miriam Karmel

1 Agrawal R et al. *JAMA Ophthalmol.* 2017;135 (12):1318-1327.
2 Agrawal R et al. *Ophthalmology.* Published online Jan. 10, 2020.

Relevant financial disclosures—Dr. Gupta: None.

COMPREHENSIVE

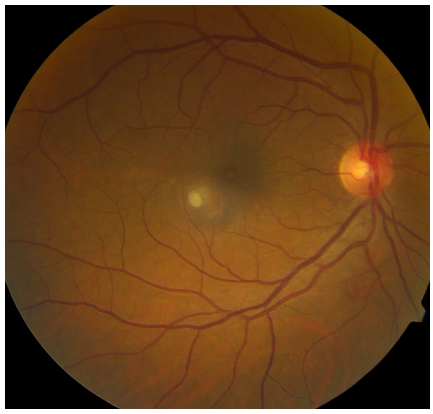
Endophthalmitis: Which Sampling Method Is Best?

FOR PRESUMED INFECTIOUS ENdophthalmitis, needle vitreous tap and mechanical vitreous biopsy with pars plana vitrectomy (PPV) were more likely to yield culture growth than was an aqueous tap, according to a study from Duke University Eye Center in Durham, North Carolina.[1]

Positive microbial cultures were found in 29% (17/59) of aqueous samples—versus 47% (26/55) of needle vitreous tap samples and 59% (19/32) of samples obtained from mechanical vitreous biopsy with PPV.

Following in the steps of the EVS. This retrospective study of chart data from nine years of endophthalmitis cases at Duke was intended to augment the results of the Endophthalmitis Vitrectomy Study (EVS), said coauthors Henry L. Feng, MD, and Cason B. Robbins, BS. Twenty-five years ago, the EVS gave ophthalmologists an evidence-based road map for identifying and treating endophthalmitis after cataract surgery.[2] However, the landmark trial did not provide guidance for cases with other etiologies, the Duke researchers pointed out.

Need for clarity. "We're seeing endophthalmitis after [intravitreal] injections, glaucoma procedures, corneal procedures, and trauma—and the list goes on," said Dr. Feng. "And we just don't have a lot of evidence-based guidance on what to do for endophthalmitis in those cases because the EVS included



ETIOLOGIES. *Only 26% of the cases of endophthalmitis occurred following cataract surgery.*

CATARACT

Why Screen Multifocal IOL Patients With OCT?

TO OPTIMIZE VISUAL OUTCOMES WITH MULTIFOCAL IOLs, it is wise to rule out macular pathologies before cataract surgery. However, previous research has shown that the standard preoperative dilated fundus exam can miss retinal disease in many cases.[1]

A new analysis suggests that ophthalmologists could fill this information gap by imaging the retinas of multifocal IOL candidates with optical coherence tomography (OCT) preoperatively—and that it could be cost-effective to do so.[1]

"OCTs are able to detect subtle macular pathologies in 9% to 30% of normal-appearing retinas. Preoperative detection of macular pathologies can help guide IOL selection and improve patient outcomes," said coauthor Ella H. Leung, MD, at Baylor College of Medicine in Houston.

Study specifics. For this analysis, the researchers used a theoretical case of a 67-year-old man who was screened with OCT before undergoing cataract surgery and receiving a multifocal lens. His vision improved from 20/60 preoperatively to 20/20 postoperatively. His out-of-pocket cost for the IOL was $2,500.

Although the OCT increased the costs of the preop evaluation, it theoretically detected 11% more of macular pathologies before surgery than did a dilated fundus exam alone, the authors said. This resulted in "decreased overall costs, slightly improved visual gains, and slightly improved" quality-adjusted life years (QALYs) over time.[1]

Putting it into practice. Coauthor Allister Gibbons, MD, at Bascom Palmer Eye Institute in Miami, said he orders OCTs for all his patients who are considering paying the extra cost of a premium IOL implant. "Personally, I have been requesting a macular OCT for all my presbyopia-correcting IOL candidates, as I have a low threshold to exclude patients from this category of lenses."

Dr. Gibbons added, "I recall hearing from Dr. David Brown that a premium IOL requires a premium macula. For those surgeons who currently do not perform screening OCTs in their multifocal IOL candidates, this study may add to their decision-making process."

Dr. Leung noted that Medicare currently does not routinely pay for screening OCTs performed before cataract surgery without a qualifying diagnosis. "If the screening OCT is not reimbursed, then the physician's practice covers the expense. However, the actual cost of an OCT depends on several factors, including whether the practice already owns the OCT machine," she said.

Coauthor Douglas D. Koch, MD, at Baylor, said the study confirmed the value of OCTs, even without reimbursement for the imaging. "This has not changed but rather reinforced my practice of preoperatively screening multifocal IOL candidates with a macular OCT," Dr. Koch said. "I feel that it is in the patient's best interest to do so, and I willingly absorb this cost." *—Linda Roach*

1 Leung EH et al. *Ophthalmology*. Published online Jan. 31, 2020.

Relevant financial disclosures—Drs. Gibbons and Leung: None. Dr. Koch: Alcon: C; Carl Zeiss Meditec: C; Johnson & Johnson Surgical Vision: C.

only postcataract surgery and postsecondary IOL patients who developed endophthalmitis."

Additional findings. In addition to evaluating microbiological yield, the researchers assessed etiologies and clinical practice patterns for endophthalmitis treated at Duke from Jan. 1, 2009, to Jan. 1, 2018.

Of 130 consecutive cases (133 eyes), 26% were related to cataract surgery. The three other most common etiologies were endogenous (20%), intravitreal injection (17%), and post-trabeculectomy (15%). All of the isolated bacteria were sensitive to combination therapy with vancomycin and ceftazidime.

In several cases, Duke physicians also performed vitrectomy in patients whose vision at initial presentation was better than those who underwent vitrectomy in the EVS, Dr. Feng said. "At least among the experts at Duke over the last nine years, we can see that vitrectomy is being considered for noncataract cases when the presenting vision is about hand motion at 1 foot. In contrast, the EVS data suggested that vitrectomy was beneficial only for patients with presenting vision of light perception or worse," Dr. Feng added. "This finding may reflect today's safer surgeries with the advent of smaller-gauge instrumentation and other technological advances." —*Linda Roach*

1 Feng HL et al. *Ophthalmol Retina.* Published online March 18, 2020.
2 Endophthalmitis Vitrectomy Study Group. *Arch Ophthalmol.* 1995;113(12):1479-1496.
Relevant financial disclosures—Dr. Feng and Mr. Robbins: None.

RETINA

DRCR.net Five-Year Outcomes for Protocol T

HOW CAN VISUAL GAINS ACHIEVED in a clinical trial be sustained once patients enter the real world of standard clinical care? In an extension of the two-year DRCR.net's Protocol T study, anti-VEGF treatment improved vision over five years in eyes with visual acuity (VA) impairment from diabetic macular edema (DME). But some of the gain at the two-year mark was lost when patients left the trial setting.[1]

A previous DRCR.net study, Protocol I, found that VA was maintained through five years when a structured protocol was followed.[2] "We were hoping that the visual acuity results in Protocol T would parallel the prior study and show stability in vision between two and five years," said Adam R. Glassman, MS, at the Jaeb Center for Health Research in Tampa, Florida.

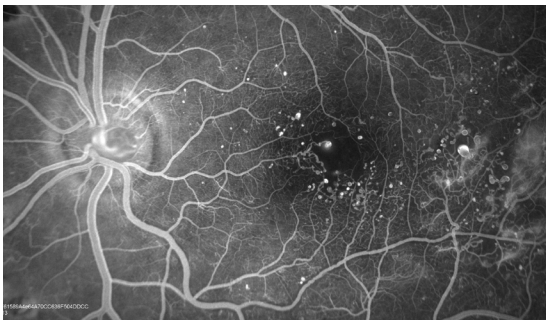
Does that mean that something happens when patients are no longer followed in a rigorously controlled setting? "That's speculation," said Mr. Glassman. "But it's not an unreasonable speculation."

The initial study. For Protocol T, 660 diabetic adults at 88 sites were randomized to receive aflibercept, bevacizumab, or ranibizumab as first-line treatment for visual impairment from center-involved DME. Visits were scheduled every four weeks in year 1 and every four to 16 weeks in year 2, depending on treatment response.

The extension. For the next three years, 317 (68%) of 463 eligible patients received standard care and were evaluated at the five-year mark.

During the three-year extension, 95% had at least one office visit with a retina specialist. The median number of visits for years 3, 4, and 5 were four, three, and four, respectively. (In contrast, the median number of visits was nine in year 2.)

In addition, 68% of patients in the extension study received at least one anti-VEGF treatment, with a median of four injections. The choice of anti-VEGF agent during the first two years did not lead to any statistically significant treatment group differences in VA at five years.



DME. *Fluorescein angiogram shows DME, microaneurysms, and neovascularization in a 39-year-old patient with long-standing diabetes.*

At the five-year mark, 30% gained 7.4 letters from baseline, but mean VA worsened by 4.7 letters from the two-year assessment. All told, nearly half of eyes (47%) were 20/25 or better and 5% were 20/200 or worse at five years.

A surprise finding. Mean central subfield thickness decreased from baseline by 154 μm and remained stable throughout five years despite the fact that average VA worsened during the extension study. "The reasons for this are unclear, but this finding highlights the importance of evaluating both anatomic and functional results in eyes with DME," Mr. Glassman said.

Ongoing challenge. Once a trial has ended, how can visual gains be sustained? "This is a challenging issue, since there are so many variable factors in clinical practice that are controlled in clinical trials," Mr. Glassman said. Future studies might explore barriers to clinical care, he added. In the meantime, he advised teaching patients the importance of regularly scheduled retinal exams, even if they are not experiencing visual symptoms.

—*Miriam Karmel*

1 Glassman AR et al. *Ophthalmology.* Published online March 28, 2020.
2 Elman MJ et al. *Ophthalmology.* 2015;122(2):375-381.
Relevant financial disclosures—Mr. Glassman: None.

MORE ONLINE. For a news brief on automated strabismus screening, see this article online at aao.org/eyenet.

See the financial disclosure key, page 9. **For full disclosures,** including category descriptions, view this News in Review at aao.org/eyenet.