

sistent with the theory of Helmholtz but contrary to the theory of Schachar.

In the article by Mathews, "Scleral Expansion Surgery Does Not Restore Accommodation in Human Presbyopia," (*Ophthalmology* 1999;106:873-7), the author concludes that scleral expansion surgery does not restore accommodation.

Listed below are case summaries of three ophthalmologists, including myself, who have had scleral expansion surgery. All three have experienced an improvement in near vision. Scleral expansion surgery is currently under Food and Drug Administration study. Perhaps the data in both articles need to be reexamined in light of these favorable reports.

Case 1: HR, a 62-year-old ophthalmologist, had the scleral expansion band (SRP) procedure on his right eye on February 19, 2000, in Monterrey, Mexico. HR's preoperative refraction in the right eye was plano. Preoperatively, his near vision was 20/70 at 60 cm and immediately after surgery, 20/25 at 30 cm. The refraction is unchanged postoperatively at plano. He achieved 5 diopters (D) of accommodation in the right eye. The left eye was not operated, because he has  $-1.00$ , so this eye was not a good candidate for SRP.

Case 2: SP, a 63-year-old ophthalmologist, had bilateral hyperopic laser in situ keratomileusis (LASIK) 2000 performed on March 24, 2000. One month after surgery, he was  $+0.50$  in his right eye and  $+0.75$  in his left eye. Six weeks after his LASIK procedure, on May 6, 2000, SP had a bilateral scleral expansion procedure (SRP) in Monterrey, Mexico.

Before SRP, he could see 20/70 at 60 cm; after, he could read 20/30 at 40 cm. He achieved 4 diopters accommodation from the SRP procedure. Functionally, SP sees very well at near in good lighting. In dim light or with fine print, his near vision is slightly blurry. The preoperative to postoperative refraction was unchanged after SRP.

Case 3: LH, a 53-year-old ophthalmologist became the third ophthalmologist to undergo the scleral expansion band (SRP) surgery on May 7, 2000. He had bilateral SRP performed in Monterrey, Mexico. His preoperative refraction was  $+1.25$  in each eye, and near vision was 20/80 at 60 cm.

Postoperatively his distance vision is 20/15 in each eye, and near vision is 20/25 at 30 cm. The amount of accommodation achieved was 5 D in the right eye and 3.5 D in the left eye. His refraction currently is  $+0.75$  in each eye. He has 20/functional vision but not 20/comfortable vision for long-term reading. He is considering the laser thermal keratoplasty (LTK) procedure for improved distance vision by reducing the hyperopia.

F. HAMPTON ROY, MD  
Little Rock, Arkansas

## Author replies

Dear Editor:

Dr. Roy presents three case summaries in which presbyopic patients have experienced improved near visual acuity after scleral expansion surgery. In addition, he notes an improvement in accommodative amplitude in each patient. Unfortunately, he does not specify the method used to measure accommodative amplitude. If subjective push-up tests were used (as proponents of the surgery generally have done), then his point remains unproven. Reasons for a mismatch between subjective push-up data and objectively measured accommodative amplitude are well known and well documented in the literature. The simplest, and perhaps most relevant, reason is that near visual acuity in presbyopic patients is often improved with multifocal intraocular or contact lenses, yet clearly, this is not accommodation. Restating from my 1999 *Ophthalmology* article (*Ophthalmology* 1999;106:873-7), the efficacy and mechanism of this controversial surgery deserve rigorous and unbiased investigation before the technique is performed on the general public. I am not certain why Dr. Roy's three patients see better at near after scleral expansion surgery. I am certain that the three patients that I had the opportunity to measure with my objective optometer had full presbyopia before and after scleral expansion surgery. I invite Dr. Roy and any of his patients to visit me at Texas Tech University (or anyone else with an objective optometer) to directly and accurately measure the postoperative accommodative amplitude. Curiously, I have not been taken up on this often-stated standing offer for more than three years. Finally, if this procedure is eventually shown to improve near visual acuity reliably and safely, I suspect that preoperative and postoperative Hartmann-Shack aberrometry will provide objective data on the real mechanism underlying the surgery. If those performing the surgery were as enthusiastic about doing objective tests as they are about the surgery, answers to these questions would already be available. To date, the only published or reported objective postoperative measures show that scleral expansion surgery does not restore accommodation. Moreover, I do not know of any Hartmann-Shack aberrometry data on these patients.

STEVEN MATHEWS, OD PhD  
Lubbock, Texas

Dear Editor:

Dr. Roy writes that three ophthalmologists have had scleral expansion surgery (SES) and experienced improved near vision. He suggests that in light of this, prior published studies of the accommodative mechanism and objective accommodation measurements in SES patients need to be reexamined.

Accommodation is, by definition, a dynamic, dioptric change in power of the eye. It occurs through altered lens geometry consequent to ciliary muscle contraction. The near-vision push-up test that is unfortunately routinely used in these cases does not necessarily measure accommodation. Improvement of near vision with spectacle lenses or multifocal intraocular lenses, for example, is not accommodation. Dr. Roy has provided no indication that accommo-

ation has been measured objectively, and therefore no indication that accommodation occurs.

We routinely use topical pilocarpine to induce accommodation in human subjects. The accommodative response is measured with a Hartinger Coincidence refractometer requiring no response from the patient. This method and the involuntary accommodative response it produces is well documented.<sup>1</sup> This and the technique used by Mathews<sup>2</sup> are appropriate methods to determine whether accommodation occurs. We have previously invited Dr. Roy and others performing this procedure to visit our laboratories and bring their patients to have these objective tests done or to allow us to bring our techniques to their patients in their offices. These offers have not been accepted, but still stand.

In addition to objective accommodation measurements, preoperative and postoperative wavefront aberration measurements should be performed to assess whether this procedure may, for example, introduce ocular aberrations or multifocality. If Dr. Roy and others performing this procedure are unable to do these measurements, others certainly will if patients are made available.

In summary, improved near vision does not prove the presence of accommodation and says nothing about the accommodative mechanism. Objective, dynamic optometers and objective refractometers have long been available and are reported extensively in the literature. Pilocarpine, which can be used to stimulate accommodation, has been used clinically for a century and a quarter. It is the new claims that need careful evaluation, not the old. The tools are there, but the will to use them is less apparent.

ADRIAN GLASSER, PhD  
*Houston, Texas*  
PAUL L. KAUFMAN, MD  
*Madison, Wisconsin*

#### References

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## Subretinal Fibrosis in Vogt-Koyanagi Harada Syndrome

Dear Editor:

In the report by Dr. Kuo and colleagues,<sup>1</sup> where they observed subretinal fibrosis in a sizable proportion (8%) of patients with Vogt-Koyanagi-Harada (VKH) syndrome, their study included patients examined over a period of 20 years in two tertiary referral centers. We have previously published similar findings.<sup>2</sup> (Cheung MK, Walton RC, Chan CC, et al. *Invest Ophthalmol Vis Sci* 1995;36:S782). In our studies, 40% of the 75 patients with VKH had subretinal fibrosis develop.<sup>2</sup> Our higher reported incidence of subretinal fibrosis may be related to the increased severity and chronicity of disease in our patient population. We also agree with the authors that problems distinguishing between choroidal neovascular membrane and subretinal fibrosis, particularly when it is located in the macula region, make it difficult to clearly explain the pathogenesis of this disease. The peripapillary lesions and lesions nasal to the optic disc are easier to define as subretinal fibrosis, because these locations are not typical for choroidal neovascularization. Finally, although visual acuity can be severely affected when subretinal fibrosis extended into the fovea, we did not find statistically significant decreases in visual acuity as observed by Kuo et al.<sup>1</sup> This could be due to differences in our definition of zone 1 (macular) lesions.

SOMSAK LERTSUMITKUL, FRACO, MPH  
*Liverpool, Australia*  
SCOTT M. WHITCUP, MD  
*Irvine, California*  
CHI-CHAO CHAN, MD  
ROBERT B. NUSSENBLATT, MD  
*Bethesda, Maryland*

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2. Lertsumitkul S, Whitcup SM, Nussenblatt RB, Chan CC. Subretinal fibrosis and choroidal neovascularization in Vogt-Koyanagi-Harada syndrome. *Graefes Arch Clin Exp Ophthalmol* 1999;237:1039–45.

## Erratum

The authors of the article, "Patterns of Open-angle Glaucoma in the Barbados Family Study" (*Ophthalmology* 2001; 108:1015–22) wish to amend the precis that appeared in the Table of Contents: Among 1056 family members of black probands with open-angle glaucoma (OAG), 67 (20%) of the 338 siblings were similarly affected. Besides age and higher intraocular pressure, risk factors for OAG in siblings were myopia and lower diastolic blood pressure—IOP differences.