

AMERICAN JOURNAL OF OPHTHALMOLOGY®

VOLUME 149

ARE YOU COMPLIANT WITH ADDRESSING GLAUCOMA ADHERENCE?

Mansberger

**WHEN SHOULD ANTI-VASCULAR ENDOTHELIAL GROWTH FACTOR TREATMENT BE STOPPED
IN AGE-RELATED MACULAR DEGENERATION?**

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**FROM THE LABORATORY TO THE CLINIC: MOLECULAR GENETIC TESTING IN PEDIATRIC
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HIGH-RESOLUTION RETINAL IMAGING SYSTEMS**

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THE VITREOUS GEL: MORE THAN MEETS THE EYE

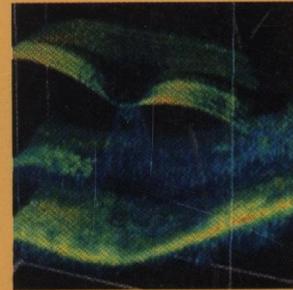
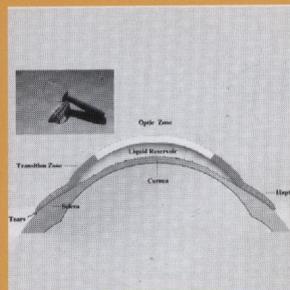
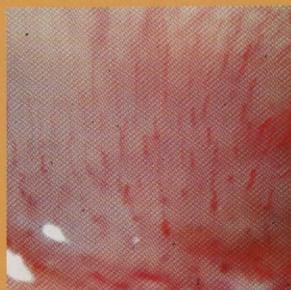
Holekamp

**AIRSOFT GUN-RELATED OCULAR INJURIES: NOVEL FINDINGS, BALLISTICS INVESTIGATION,
AND HISTOPATHOLOGIC STUDY**

Kratz, Levy, Cheles, and Co-Authors

MANAGEMENT OF IRIS MELANOMAS WITH ¹²⁵IODINE PLAQUE RADIOTHERAPY

Fernandes, Krema, Fulda, and Co-Authors



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PERSPECTIVES

- 10 **From the laboratory to the clinic: molecular genetic testing in pediatric ophthalmology.** *Arlene V. Drack, Scott R. Lambert, and Edwin M. Stone*

Many pediatric eye disorders have a genetic basis. In the past, these disorders were diagnosed solely by clinical testing. Molecular genetic testing now is a powerful adjunct to clinical diagnosis and has the added benefit of contributing to research and allowing more accurate genetic counseling for patients and their families. Ordering and interpreting molecular genetic tests is complex, and often benefits from collaboration with geneticists and genetic counselors. Useful genetic testing starts with excellent clinical diagnosis, making pediatric ophthalmologists vital to the process of molecular testing.

- 18 **Spectral-domain optical coherence tomography: a comparison of modern high-resolution retinal imaging systems.** *Daniel F. Kiernan, William F. Mieler, and Seenu M. Hariprasad*

Advances in spectral-domain optical coherence tomography (OCT) have revealed new details of ocular anatomic

and pathologic data. Several different devices are commercially available that provide increased resolution and a greater volume of data compared with time-domain OCT. Although interdevice variation of segmentation algorithms and scan software may preclude direct data comparison, there is little doubt that this exceptional new technology will benefit many clinical and research-based facets of ophthalmology.

- 32 **The vitreous gel: more than meets the eye.** *Nancy M. Holekamp*

An intact gel vitreous is central to a healthy human eye. The vitreous gel recently was found to have the important function of oxygen regulation within the eye. As the gel undergoes age-related liquefaction, this function is impaired. The resultant elevated intraocular oxygen tension likely proves beneficial for vascular endothelial growth factor-mediated retinal diseases. However, it may lead to oxidative stress within the eye and may contribute to diseases such as nuclear cataract and open-angle glaucoma.

ORIGINAL ARTICLES

- 37 **Airsoft gun-related ocular injuries: novel findings, ballistics investigation, and histopathologic study.** *Assaf Kratz, Jaime Levy, Dorina Cheles, Zach Ashkenazy, Erez Tsumi, and Tova Lifshitz*

Airsoft gun use is widespread, but literature reports of airsoft ocular injuries are limited. This is the most comprehensive study concerning airsoft gun ocular injuries, involving the largest reported series along with high-speed stills and video images and histopathologic examinations. A novel, unique pattern of "donut" corneal epithelium erosion was demonstrated.

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- **45 Ocular surface reconstruction with autologous nasal mucosa in cicatricial ocular surface disease.** *Jae Hoon Kim, Yeoun Sook Chun, Seok Hyun Lee, Seog Kyun Mun, Haeng Sun Jung, Su Hyon Lee, Youngsook Son, and Jae Chan Kim*

Novel findings of characteristics of nasal mucosa, including well-developed parallel vasculature to the surface, enriched goblet cells, and plenty of stem cells, were confirmed by immunohistochemical staining. Transplantation of autologous nasal mucosa showed rapid healing, abundant mucin secretion at mucosal graft sites, and stabilization of the ocular surface in cicatricial ocular surface diseases.

PERSPECTIVES

- **54 Clinical benefits of the Boston ocular surface prosthesis.** *William B. Stason, Moaven Razavi, Deborah S. Jacobs, Donald S. Shepard, Jose A. Suaya, Lynnette Johns, and Perry Rosenthal*

The Boston Ocular Surface Prosthesis improved best-corrected visual acuity (Snellen) by a mean of -0.54 and -0.22 logarithm of the minimum angle of resolution units, respectively, in 80 consecutive patients with severe corneal ectasia or ocular surface disease and improved mean Visual Functioning Questionnaire (VFQ-25) visual functioning scores from 57.0 to 77.8 ($P < .0001$). Improvements in total VFQ-25 scores were similar in the 2 clinical groups, whereas vision-related subscores improved more in patients with ectasia and ocular pain, and psychological functioning improved more in patients with ocular surface disease.

- **62 Ocular surface squamous neoplasia after corneal graft.** *Aparna Ramasubramanian, Carol L. Shields, Neelema Sinha, and Jerry A. Shields*

Ocular surface squamous neoplasia can occur in patients after placement of a corneal graft and might be misinterpreted as graft failure. This malignancy shows favorable response to

topical chemotherapy, but surgical excision and photodynamic therapy are other options. Long-term monitoring for graft stability and tumor recurrence is advised.

- **66 Treatment with voriconazole in 3 eyes with resistant Acanthamoeba keratitis.** *Stacy Bang, Erica Edell, Allen O. Eghrari, and John D. Gottsch*

New therapies are required to overcome cases of Acanthamoeba keratitis (AK) increasingly resistant to first-line treatment. The authors report the treatment of AK with voriconazole in 3 eyes from 2 patients that remained culture-positive for Acanthamoeba despite ongoing treatment with chlorhexidine and hexamidine. Topical (1%) and intrastromal (25 $\mu\text{g/mL}$) voriconazole were administered. Voriconazole may be a promising adjuvant agent in treating AK.

- **70 Management of iris melanomas with ^{125}I iodine plaque radiotherapy.** *Bruno F. Fernandes, Hatem Krema, Emiliano Fulda, Charles J. Pavlin, David G. Payne, Hugh D. McGowan, and Ernest Rand Simpson*

Fourteen cases of iris melanoma were treated by ^{125}I iodine plaque radiotherapy and followed for an average of 26.6 ± 19.5 months. All tumors responded to treatment and no recurrences were seen. Cataract was the most common complication, seen in 75% of patients who had a clear lens before the procedure. No cases of neovascular glaucoma were detected. At last visit, all patients were alive and free of metastasis.

- **77 Evaluation of sub-Tenon triamcinolone acetonide injections in the treatment of scleritis.** *Keegan S. Johnson and David S. Chu*

This retrospective, interventional case series describes the use of sub-Tenon triamcinolone acetonide injections in the treatment of nonnecrotizing scleritis. Both subjective improvement and reduction in objective inflammation as demonstrated on slit-lamp biomicroscopy were achieved in 10 (90%) of 11 patients.