Articles

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DAVS viewing system yields increased sense of situational awareness.

Pitcher III, John D., Ophthalmology Times; Nov 2019; vol. 44 (no. 19); p. 12-12

The article offers information on 3-D digitally vitreoretinal surgery (DAVS) which offers an alternative viewing system for ophthalmologists. Topics covered include the advantages it offers to surgeons, such as upgrades in visualization, augmented reality and safety, and the benefits of the integration of optical coherence tomography into surgery, and the potential of DAVS for the education of future ophthalmologists.

AI-enabled tool offers glimpse of glaucoma-related functional loss.

Yousefi, Siamak, Ophthalmology Times; Nov 2019; vol. 44 (no. 19); p. 24-24

The article offers information on the artificial intelligence (AI)-enabled glaucoma radar that is being developed for use in clinical practice and glaucoma research as a personalized staging and monitoring tool for glaucoma assessment. Topics covered include knowledge about glaucoma that the radar provides, how the radar was developed, and how the tool is designed to overcome the limitations of existing algorithms.

Risk Factors for Trauma-Related Eviscerations: Analysis of 821 Cases.

Jiang, Zhaoxin; Yang, Yao; Li, Yujie; Yuan, Miner; Li, Cheng et al. Journal of Ophthalmology; Nov 2019; p. 1-6

Evisceration is the end therapeutic approach for the treatment of severe ocular trauma cases, and it is a tremendous loss for patients. In this study, we explored the changing trends in the number of surgeries performed, demographic data and ocular features, and risks for early evisceration, aiming to provide more data for the additional prevention and management strategies for this catastrophic problem. This was a retrospective study that included patients who underwent ocular evisceration at the Zhongshan Ophthalmic Center between January 2013 and December 2017. A total of 1229 evisceration cases were reviewed, and only trauma-related eviscerations were analyzed. Etiology, demographic data, ocular features, and hospitalization time were evaluated. The total number of trauma-related eviscerations recorded in the past five years was 821 cases. The number of surgeries performed was almost constant each year (164 ± 17 cases); 35% of the patients were less than ten years old at the time of the original ocular injury and 69% of them were male. Endophthalmitis led to significantly early evisceration compared with cases without endophthalmitis (P<0.05). The group with a history of silicone oil tamponade showed a significantly longer surgical interval between trauma and evisceration than did the nonsilicone oil tamponade group (P<0.05). Day-case
hospitalization for evisceration increased from 0% to 32% over the past five years. The results of the present study show that the number of ocular trauma-related eviscerations performed in the past five years was almost unchanged and boys under ten are highly susceptible. This study also demonstrates that endophthalmitis leads to significantly early evisceration, and silicone oil tamponade may postpone ocular atrophy. Based on the study data, day-case surgery is safe for evisceration management.

An Alternative Psychophysical Diagnostic Indicator of the Aging Eye.

Rodriguez, John D.; Wallstrom, Garrick; Narayanan, Divya; Welch, Donna; Abelson, Mark B. Journal of Ophthalmology; Nov 2019 ; p. 1-5

Purpose. Impaired adaptation to changes in lighting levels as well as mesopic visual function is a common complaint in those over the age of 65. The use of photostress is a well-established method to test the adaption rate and the response of the visual cycle. In this study, we test visual function recovery to mesopic luminance stimuli following a long duration photostress in young and elderly subjects. If successful in strongly differentiating aging macular function, these methods may also be useful in the study of pathologies such as age-related macular degeneration. Methods. A group of 12 older normal subjects (mean age 75.1 ± 4.79) and a control group of 5 younger normal subjects (mean age 26.2 ± 4.19) were subjected to macular photostress using the OraLux photostress system. The OraLux system provides a diffuse light source bleaching 84% of cone photopigment while maintaining an exposure safety factor of 200 times less than the maximum safe exposure. After each photostressing session, macular recovery was tracked using a foveal, variable contrast, flickering stimulus of mean luminance in the high mesopic range. Recovery was tracked for 300 seconds. The endpoint was time to recovery to each individual’s baseline sensitivity as determined by two static sensitivity trials prior to photostress. Results. Proportional hazards analysis of recovery time yielded a statistically significant difference between the older group and the young group (HR = 0.181; p=0.0289). The estimated hazard ratio of 0.181 indicates that older subjects return to baseline at less than one-fifth the rate of younger subjects. The hazards ratio remained statistically significant after adjusting for visual acuity (HR = 0.093; p=0.0424). Conclusion. Photostress recovery of flicker sensitivity under mesopic conditions is a strong differentiator of aging macular function. This agrees with subject-reported complaints in reduced luminance conditions after exposure to bright lights such as night driving. The qualitative similarity between the aging retina and changes in early AMD suggests that flicker recovery following photostress may be useful as a surrogate endpoint in AMD clinical trials.

Reports

The following report(s) may be of interest:

Air pollution may be linked to increased glaucoma risk.
NHS Behind the Headlines; 2019.

In this UK study, over 100,000 people completed questionnaires and had eye tests for glaucoma.
The researchers linked this data with pollution levels at their home address in the same year. Around 2% of the sample self-reported being diagnosed with glaucoma. The researchers found a 6% increased chance of self-report in more-polluted areas.

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