

Review

The best of the best: a review of select retina case reports published in 2015

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Abstract

This review article highlights 4 case reports published in 2015 that provided substantive contributions to the field of retina. The first describes postoperative hemorrhagic occlusive retinal vasculitis, a newly described and visually devastating complication of cataract surgery. The second discusses ocriplasmin as a novel treatment for foveal schisis in patients with X-linked retinoschisis. The third describes a case of retinal toxicity from sertraline, a common psychiatric drug often sold as name brand Zoloft (Pfizer Inc, New York, NY). The last article shares 10-year results from a blind patient who received the Argus I retinal prosthesis.

The study of vitreoretinal disease is both complex and fascinating. Case reports and case series are a means by which clinicians can share clinical experiences in managing retinal disease. By sharing our clinical experiences from individual patients, we begin the process of describing new diseases, new medications, and new surgical techniques. To obtain a list of published reports, we performed a MEDLINE search for case reports with the keyword *retina*. In 2015 there were 195 publications meeting these criteria. We selected 4 articles that highlight interesting developments in the field of retina.

Postoperative hemorrhagic occlusive retinal vasculitis

Hemorrhagic occlusive retinal vasculitis (HORV) is a visually devastating entity that occurs rarely after cataract surgery. First described in 2 patients (4 eyes) by Nicholson et al in 2014,¹ HORV presents as a severe hemorrhagic vasculitis several days to several weeks postoperatively. Fluorescein angiography can reveal dramatic peripheral nonperfusion from occlusive vasculitis. For most patients with HORV the visual prognosis is poor.

Witkin et al² reported a series of 11 eyes from 6 patients with HORV from multiple clinical sites; this small case series represents the largest one to date of this rare condition. The patients all underwent uncomplicated cataract surgery with use of intracameral vancomycin and had good vision on the first postoperative day. From 1 to 14 days after surgery, patients presented with painless vision loss from HORV. All patients within this series received aggressive systemic and topical steroids. Seven eyes developed neovascular glaucoma, 4 eyes required

vitrectomy surgery, and all eyes needed treatment for retinal ischemia with either panretinal photocoagulation or intravitreal anti-vascular epithelial growth factor medication, or both. Of the 11 eyes in the series, 8 (73%) were left with visual acuity of 20/200 or worse; 4 of 11 eyes (36%) had no light perception.

The authors hypothesize that the pathophysiology of HORV may be related to a possible immune reaction to intracameral vancomycin. They suggest avoiding intracameral vancomycin in an effort to prevent HORV or delaying cataract surgery in the fellow eye at least 2–3 weeks if surgeons use intracameral vancomycin. The American Society of Retinal Specialists' Research and Safety in Therapeutics Committee is collecting suspected cases of HORV to better understand this devastating condition (<http://www.asrs.org/forms/4/asrs-adverse-event-report-form>).

Use of ocriplasmin for foveal schisis in X-linked retinoschisis

X-linked retinoschisis (XLRS) is a macular disorder affecting young males. Defects in cellular adhesion pro-

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teins results in early retinoschisis formation, both within the macula and periphery. As foveal schisis progresses, the macula can degenerate and affect visual acuity. Currently treatment for foveal schisis from XLRS is limited to use of topical dorzolamide and surgery with pars plana vitrectomy with internal limiting membrane peeling and gas tamponade.

Patel and Morse³ present the case of a 27-year-old man with a history of XLRS and significant foveal schisis, causing 20/150 vision in both eyes. The authors attempted topical dorzolamide treatment without success. The authors reviewed evidence suggesting the development of a posterior vitreous detachment (PVD) correlated with improvement in macular thickness. Thus, they elected to use 125 µg of intravitreal ocriplasmin to induce a PVD and relieve vitreomacular adhesion. On follow-up, they reported a significant reduction in central macular thickness, from 731 µm to 185 µm, 1 week after injection. This was not associated with any visual improvement, presumably due to functional damage to the macula from chronic foveal schisis. Interestingly, 1 month after injection there was a recurrence of the foveal schisis with a central macular thickness of 612 µm. This case report supports the hypothesis that vitreomacular traction may play some role in foveal schisis in patients with XLRS, and opens up a new avenue of research with pharmacologic vitreolysis.

Bull's eye maculopathy in a patient taking sertraline

Sertraline is a commonly used psychiatric medication without significant known ocular side effects. Within the United States, sertraline is the third most prescribed psychiatric medication.⁴

Mason and Patel⁵ report a case of a 14-year-old girl with significant vision loss after initiation of sertraline therapy. Their patient was reported to have a normal baseline optometric examination prior to initiation of sertraline 100 mg daily for anxiety. After 6 months of use, the patient began reporting a slow decrease in vision. Presenting to the authors one year after treatment was initiated, the patient was found to have 20/200 vision bilaterally with bull's eye maculopathy in both eyes. Full workup including full-field electroretinography and electrooculography were reported as normal, and genetic testing for Stargardt disease and macular dystrophies were negative. The patient was not taking any other medications, and she had no family history or examination findings consistent with retinal dystrophies. Her sertraline was discontinued, and her vision loss did not progress.

The temporal correlation between initiation of sertraline treatment and the onset of this patient's symptoms, and the lack of any other causative genetic or toxic cause, is suggestive of a drug-associated maculopathy. The authors indicate that this is a controversial finding; only 4 cases of ocular side effects have been reported despite sertraline's widespread use. Of these, only 1 case reported macular toxicity that resulted in macular scarring instead of the bull's eye pattern seen with this patient.⁶ Researchers need to further study this possible connection between sertraline and maculopathy, perhaps by monitoring patients on this drug for subclinical macular findings.

Ten-year follow-up of a blind patient chronically implanted with epiretinal prosthesis Argus I

Diseases that affect the outer retina, such as retinitis pigmentosa, can cause profound vision loss. Previously, vision loss from these diseases was untreatable. With the invention of the Argus I epiretinal prosthesis, patients with retinitis pigmentosa were given a means to regain visual function. Yue et al⁷ present a patient who has had the Argus I in place for 10 years.

The Argus I device stimulates inner retinal structures by means of electrodes placed along the inner retina. These electrodes are fed through a trans-scleral wire feeding to a subdermal electronics pack that receives video data from a camera worn by the patient. The patient perceives phosphenes based on the input video signal. The authors found that after 10 years, they were still able to elicit phosphenes within their patient and, more importantly, that the patient was able to complete visual tasks such as locating a door within a room. They did note an increase in the threshold required to elicit a perceptual phosphene. They hypothesize that slight increases in the distance between the retina and the electrode appreciated by optical coherence tomography over time contributed to this finding. Importantly, there were no findings of retinal damage with device implantation.

The 10-year data provides important information regarding the long-term benefits and safety of retinal prostheses. Knowledge gained from their experiences will better inform the development of next generation devices and allow clinicians to maximize the visual functioning of patients who would otherwise be completely blind.

Summary

- Hemorrhagic occlusive retinal vasculitis should be considered in any patient after cataract surgery with findings of posterior segment hemor-

rhage, vasculitis, inflammation, and ischemia. This surgical complication can lead to severe bilateral vision loss and requires aggressive treatment. HORV may be due to an immune reaction to intracameral vancomycin.

- Release of vitreomacular adhesion with ocriplasmin in patients with foveal schisis from juvenile X-linked retinoschisis may have a role in stabilizing anatomical structure and improving foveal schisis.
- Sertraline might contribute to a rare, but severe, bull's eye maculopathy. Given the drug's widespread use, clinicians should be aware of this finding and monitor patients taking sertraline for this possible side effect.
- Long-term use of the Argus I retinal prosthesis shows some degradation in signal generation but still provides visual function without causing progressive retinal damage.

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