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Management of Degenerative Retinoschisis–Associated Retinal Detachment

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Purpose: To review a population of degenerative retinoschisis (RS) patients, with attention to those with schisis cavity breaks and with retinal detachment complicating retinoschisis (RDRS), to identify management considerations and incidence for this rare clinical entity.

Design: Retrospective chart review of patients with RS and schisis cavity breaks over a 15-year period in a tertiary, multiple-physician vitreoretinal practice.

Subjects: A total of 587 cases of RS were confirmed on chart review, with 59 meeting inclusion criteria.

Methods: Included charts required documented RS with schisis cavity breaks, a minimum of 3 months of follow-up, detailed fundus drawings and notes, and filed operative reports if surgical interventions were performed. Charts were excluded if the patient had undergone any previous history of laser, cryotherapy, or intraocular surgery (except for cataract surgery).

Main Outcome Measures: Incidence of RS with schisis cavity breaks and RDRS, time to development of symptomatic RDRS, clinical characteristics predisposing development of progressive RDRS.

Results: Sixty-seven cases (11.4%) presented with schisis cavity breaks, but only 59 met inclusion. Initially, 35 of the 59 included cases (59%) were observed with stability in 54.3% at a mean follow-up of 40.2 months. Only 10 of the initially observed 35 eyes (28.6%) exhibited new-onset symptoms of retinal detachment, with a mean time to progression of 20.6 months. Posterior progression involving the major arcades or macula occurred in 86.7% of symptomatic eyes, as compared with 11.4% of asymptomatic eyes ($P < 0.0001$). Of the 15 eyes with symptomatic RDRS, 14 eyes underwent vitreoretinal surgery for RDRS, with a single-procedure success rate of 86%.

Conclusions: RDRS requiring vitreoretinal surgical repair is a rare, symptomatic, and progressive condition occurring in 2.4% of 587 cases of RS over a 15-year period in a large, tertiary referral, vitreoretinal-only practice. In cases with RS and outer wall breaks, 54.3% were nonprogressive at 3 years of follow-up, but 28.6% progressed to symptomatic RDRS at a mean of 20.6 months. Surgery is not recommended in asymptomatic individuals except in rare situations based on clinical judgement regarding the observed behavior of the RS. The presence of symptoms should warrant treatment.

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Posterior Segment Intraocular Foreign Bodies: A 10-Year Review

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Purpose: To describe the characteristics of open-globe injuries with posterior segment intraocular foreign bodies (IOFBs).

Design: Retrospective chart review study.

Participants: Patients treated for posterior segment IOFB injuries.

Methods: Retrospective analysis of all patients with posterior segment IOFBs from 2003 to 2014 was conducted. Data including demographics, mechanism of injury, type of IOFB, method of diagnosis, presenting examination, medical and surgical treatment, visual outcomes, and complications were recorded.

Main Outcome Measures: Visual acuity (VA); anatomically successful retinal reattachment; need for additional surgery; frequency of post-traumatic complications, such as sympathetic ophthalmia (SO), endophthalmitis, and enucleations; and accuracy of Ocular Trauma Score (OTS).

Results: Thirty-one patients (28 male; mean age, 36.6 years; 42% Hispanic) had posterior segment IOFB injuries, 23 (74%) of which were construction-work related. Twenty-five IOFBs (81%) were metallic. Twenty-four IOFBs (77%) had Zone I entry. Computed tomography (CT) scan detected an IOFB in 21 of 22 eyes in which it was performed, with 1 scan highly suspicious for an IOFB. Average size of the IOFB was 10 mm^3; size or initial VA did not have any correlation with final VA. The OTS had 60% accuracy in predicting final VA (n = 20). The majority of patients had traumatic cataract and vitreous hemorrhage (VH) on presentation (77% and 61%, respectively); 65% had a retinal tear or retinal detachment (RD), and these patients had worse final VA than those with no retinal pathology. Average time from injury to IOFB removal was 3 days because of the delay in presentation to our facility; 27 of 31 patients (87%) had IOFBs removed within 24 hours of presentation with pars plana vitrectomy (PPV) and either gas or silicone oil tamponade. Patients were admitted for an average of 4 days of intravenous antibiotics. The most common complication was recurrent RD in 11 patients (35%), which portended worse final VA. One patient (3%) developed SO. There were no cases of postoperative endophthalmitis or enucleation.

Conclusions: Open-globe injuries with posterior segment IOFBs have a guarded visual prognosis, particularly when associated with RD. Increased awareness of the importance of eye protection can help minimize the occurrence of these injuries.

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Surgical Assistant Use in Vitreoretinal Surgery

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Purpose: To evaluate the use of surgical assistants in vitreoretinal surgery.

Design: Database study.

Participants: Data from US Medicare Part B fee-for-service beneficiaries and their providers.

Methods: Medicare Part B National Summary Data Files for calendar years 2000 through 2014 were used to identify the number of services billed by assistant and primary surgeons for vitreoretinal surgeries. The proportion of procedures involving an assistant was determined for each year. Linear regression analysis was performed to identify trends in use.

Main Outcome Measure: Percentage of vitreoretinal procedures using an assistant surgeon.

Results: From 2000 through 2014, 12% of eligible vitreoretinal surgeries (216 637/1 808 377) involved a surgical assistant. In 2000, 14% (13 115/94 742) of vitreoretinal surgeries used a surgical assistant compared with 10% in 2014 (13 360/136 945). In this 15-year period, there was a statistically significant decline in the proportion of vitreoretinal procedures using an assistant ($P < 0.01$).

Conclusions: From 2000 through 2014, surgical assistants were used in 12% of vitreoretinal surgeries. The percentage of cases using an assistant declined from 14% in 2000 to 10% in 2014 ($P < 0.01$), a 29% decline. This decline may be secondary to technological advances in vitrectomy, which confer greater surgeon independence, and a marked decline in scleral buckling procedures.

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Usefulness of Structured Video Indirect Ophthalmoscope–Guided Education in Improving Resident Ophthalmologist Confidence and Ability

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Purpose: To evaluate the usefulness of the video indirect ophthalmoscope (VIO) to improve resident ophthalmologist skill with indirect ophthalmoscopy (IO) and scleral depression (SD).

Design: Prospective, randomized, double-arm interventional study.

Participants: Ten ophthalmology residents were enrolled in an educational program using the Heine Video Omega 2C VIO (Heine USA Ltd, Dover, NH) and served as the study group. Ten other experience-matched ophthalmology residents functioned as the control group.

Methods: At baseline, all study and control residents completed surveys assessing their subjective comfort and skill with IO. Each resident also completed a standardized full IO examination with SD that was recorded using the VIO. Each resident in the study group received 3 monthly 1-hour teaching sessions using the VIO. Surveys and recorded standardized examinations were repeated for all residents after the 3-month period. Both baseline and final examination videos were graded using a standardized grading scale by 3 independent retina faculty members masked to the identities of the residents and timing of the examination.

Main Outcome Measures: Improved visualization of the peripheral retina (ora serrata) as evaluated by masked graders was the primary outcome measure. Improved examination efficiency grade was the secondary outcome measure.

Results: Both the study group and the control group had significant improvement in the ability to examine the peripheral retina and ora serrata compared with baseline ($P = 0.02$ and $P = 0.03$, respectively). The study group also showed significantly improved examination efficiency compared with baseline, which was not noted in the control group ($P = 0.01$ and $P = 0.53$, respectively). The study group self-reported significantly improved confidence in the ability to identify retinal tears, whereas the control group did not ($P = 0.003$ and $P = 0.08$, respectively). Study group participants also reported significantly improved ability to recognize retinal holes ($P = 0.003$), subretinal fluid ($P = 0.02$), and vitreoretinal tufts ($P = 0.02$), whereas the control group did not.

Conclusions: This novel educational study suggests that VIO as part of a structured teaching program may improve resident ophthalmologist confidence and ability with identifying retinal pathologic features using IO with SD.

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Intravitreal Administration of Antiviral Agents in Silicone Oil–Filled Human Eyes

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Purpose: To report our experience with intra-silicone oil (SO) injection of antiviral agents for treatment of viral retinitis and to review the relevant literature.

Design: Two case reports and a literature review.

Participants: Two patients with viral retinitis and SO tamponade.

Methods: Two patients with viral retinitis were treated with intravitreal injections of low-dose ganciclovir (2 mg/0.05 ml), foscarnet (1.2 mg/0.05 ml), or both after retinal detachment repair with SO tamponade, in addition to systemic antiviral therapy from 2014 through 2015. The literature on the use of intraocular antiviral agents in the setting of SO vitreous substitute was reviewed.

Main Outcome Measures: Clinical outcomes after administration of intra-SO antiviral therapy.

Results: A patient with progressive outer retinal necrosis received 5 intra-SO injections of low-dose ganciclovir and foscarnet after surgery over 6 weeks. Another patient with acute retinal necrosis received weekly low-dose foscarnet injections into his SO-filled eye for 8 weeks after surgery. Significant retinitis regression with long-term retinitis control was achieved in both patients throughout follow-up. No articles reporting the administration of soluble antiviral agents into an SO-filled human eye were identified.

Conclusions: Our preliminary findings indicate that administration of low-dose ganciclovir and foscarnet into an SO-filled eye may be used as adjunctive treatment for viral retinitis. Further studies are needed to confirm these results.

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