RETINA ROUNDUP

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1. Transcorneal Vitrectomy In Eyes With Regressed Retinoblastoma

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Purpose:

Current treatments for retinoblastoma facilitate globe salvage but can result in vitreoretinal disorders that may require surgery. There is controversy on surgical approaches in eyes with retinoblastoma. Here, we describe a transcorneal vitrectomy approach that avoids the use of chemotherapy or cryotherapy.

Methods:

Retrospective chart review was performed on five consecutive patients with regressed retinoblastoma for >12 months (Group D/ct2b) at Children's Hospital Los Angeles who had vitrectomy between November 2022 and December 2023.

Results:

5patients underwent eight vitrectomies for various indications including intraocular lens fibrosis, vitreous hemorrhage, cataract, retinal detachment, and silicone oil removal. Mean age at first vitrectomy was 6.2 years (range: 2–9 years); mean time from last retinoblastoma treatment was 50.4 months (range: 20–82 months). Radially oriented corneal incisions were made with the 23-G or 25-G trocar system, and the Versa HD LenZ (Oculus) was used with the RESIGHT (Zeiss) for top-down visualization. Neither chemotherapy nor cryotherapy was used. Wounds were sutured parallel to the limbus with 10-0 polyglactin 910 suture (Vicryl, Ethicon), and a final water rinse was performed to lyse any potential retinoblastoma cells. Surgical objectives were achieved, vision remained stable, and no retinoblastoma spread was noted with a mean follow-up of 7.6 months (range: 3–12 months).

Conclusion:

This vitrectomy technique for eyes with regressed retinoblastoma permits top-down viewing with the Versa HD LenZ. Radial placement of corneal wounds avoids suturing through the uveal tract, and a postsurgical water rinse lyses any retinoblastoma cells. This approach may obviate the need for chemotherapeutics or cryotherapy.

2. SUB RETINAL PIGMENT EPITHELIUM HYPOREFLECTIVE SPACES PRECEDING LARGE DRUSEN COLLAPSE

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Purpose:

To describe and study hyporeflective subretinal pigment epithelium (RPE) spaces in large drusen and drusenoid pigment epithelial detachment before collapse.

Method:

Retrospective longitudinal study enrolled patients with large and very large drusen caused by intermediate age-related macular degeneration. The following optical coherence tomography parameters were assessed: drusen size (maximum width and height), optical coherence tomography biomarkers of RPE atrophy, presence of intraretinal and subretinal fluid, acquired vitelliform lesion, and sub-RPE regions of hyporeflectivity within the pigment epithelial detachment compartment.

Results:

Of the 50 eyes from 41 patients (mean age 77.1 ± 9 years, 78% women) with large and very large drusen, 16 eyes progressed to collapse. Eyes with sub-RPE hyporeflective spaces (n = 8 eyes, 50%) were associated with greater drusen width and height than those without sub-RPE hyporeflective spaces. At the

collapse visit, eyes with sub-RPE hyporeflective spaces displayed poorer visual acuity and greater incomplete RPE and outer retinal atrophy and complete RPE and outer retinal atrophy length than eyes without sub-RPE hyporeflective spaces ($P = 0.004$ and $P = 0.04$, respectively).

Conclusion:

Sub-RPE hyporeflective spaces are a novel optical coherence tomography finding of large and very large drusen that collapse to atrophy. Progressive RPE dysfunction and failure may lead to reduced drusenoid material formation and progressive degenerative hydration of the large drusen before collapse, but this awaits confirmation with histopathological analysis.

3. PNEUMATIC RETINOPEXY FOR GIANT RETINAL TEAR ASSOCIATED RETINAL DETACHMENT: A Retrospective Cohort Study

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Retina ():10.1097/IAE.0000000000004344, November 20, 2024. | *DOI:* 10.1097/IAE.0000000000004344

Purpose:

To report the technique and long-term outcomes of patients with giant retinal tear associated retinal detachment (GRT-RD) treated with pneumatic retinopexy (PnR).

Methods:

Retrospective cohort study. All patients presenting with GRT-RD with tears in the superior ten-clock hours who underwent primary PnR were included in this study.

Results:

31 patients were included in the study. 61.2% (19/31) achieved PARR with PnR at 3 months and 58.0% (18/31) at the final follow-up. Patients included in this study had a median follow-up of 24 months (interquartile range 46.5). The absence of retinal tears elsewhere at baseline was associated with a final PARR of 80% (16/20) (p= 0.007). Thirteen eyes required PPV after a failed PnR. Two eyes required the intraoperative use of perfluorocarbon liquids (PFCL). No eyes required silicone oil (SO). Visual acuity improved significantly from baseline to the last follow-up. Final anatomic reattachment rate was 100% (31/31).

Conclusion:

For selected cases of GRT-RDs affecting the superior ten-clock hours, PnR could be a possible treatment option when patients consent to extra visits and the surgeon has substantial expertise. When lacking this extensive experience and comfort with PnR, PPV remains the treatment that is most likely to result in a primary anatomic reattachment. While this study provides guidance on PnR technique for GRT-RDs, it is essential to note that the reported PARR may be contingent on the expertise of the surgeon/center, and the authors recommend that those new to PnR first gain substantial experience in cases meeting clinical trial criteria.

4. Evaluation of Foveal Hypoplasia in Children with a History of Retinopathy of Prematurity

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Retina ():10.1097/IAE.0000000000004362, December 02,2024. | *DOI:* 10.1097/IAE.0000000000004362

Purpose:

To evaluate the foveal development in patients diagnosed with retinopathy of prematurity (ROP) and to evaluate whether foveal development was affected by treatment in ROP patients.

Methods:

This cross-sectional study included patients with a history of ROP. Foveal development was compared between eyes with spontaneous regression and treated eyes. Additionally, gestational age, birth weight, ROP zone and stage, and postmenstrual gestational age at the time of treatment, were evaluated. The final visual acuity was analyzed according to the foveal hypoplasia (FH) severity.

Results:

This study included 166 eyes from 83 patients. Foveal development was significantly different among the treatment and spontaneous regression groups, and FH was more severe in the treatment group. The prevalence of normal foveal development was higher in the spontaneous regression group than in the treatment groups. This suggests that ROP treatment may induce morphological alterations during foveal development. Gestational age, postmenstrual age at the

time of treatment, ROP stage, and ROP zone were correlated with FH severity. IoVisual acuity was not affected by mild FH, and 88.5% of the patients had a visual acuity of LogMAR 0.

Conclusion:

Early stage foveal development is not significantly disrupted in patients with ROP, and patients with ROP show no significant visual disturbance associated with FH. However,eyes treated for ROP either with laser photocoagulation or intravitreal anti-vascular endothelial growth factor demonstrated more severe hypoplasia compared to that with spontaneous regression.

5. COMPARISON OF SURGICAL OUTCOMES OF MACULAR TELANGIECTASIA TYPE 2–ASSOCIATED MACULAR HOLE WITH IDIOPATHIC MACULAR HOLE

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Retina 44(12):p 2076-2085, December 2024. | *DOI:* 10.1097/IAE.0000000000004249

Purpose:

To assess the longitudinal surgical outcomes of macular telangiectasia Type 2 macular hole (MacTel-MH) and compare them with those of idiopathic MH.

Methods:

This retrospective, single-tertiary center study included patients who underwent MH surgery between January 2015 and September 2023. Patients with characteristic optical coherence tomography findings of MacTel in both eyes or those who underwent fluorescence angiography were classified as having MacTel MH. Baseline and postoperative best-corrected visual acuity and optical coherence tomography parameters were reviewed.

Results:

Totally, 27 and 243 eyes with MacTel and idiopathic MH, respectively, were included. Macular hole closure rate was better achieved in idiopathic than in MacTel MH group at two years postoperatively. Temporal recovery of ellipsoid zone and external limiting membrane was more prominent in MacTel than in

idiopathic MH group. Statistically significant visual acuity improvement was seen between three months and two years postoperatively in MacTel MH group.

Conclusion:

To the best of our knowledge, this is the first study to analyze the surgical outcomes of MacTel MH in both anatomical and functional aspects and compare them with patients with idiopathic MH. Postoperative microglia change would have affected the restoration of outer retinal layer of patients; however, further studies are needed for clarification.

6. Intravitreal Infliximab for the Treatment of Proliferative Vitreoretinopathy (FIXER): A Randomized Controlled Phase II Trial

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Objective:

To study the safety and efficacy of intravitreal infliximab administered at the conclusion of pars plana vitrectomy (PPV) in the treatment of proliferative vitreoretinopathy (PVR) associated with rhegmatogenous retinal detachment (RRD).

Design: Randomized controlled phase II clinical trial.

Subjects:

Patients with primary RRD and grade C PVR, according to the updated Retina Society Classification.

Methods:

Sixty-six patients were randomized in a 1:1 ratio to undergo PPV and silicone oil (SO) injection with or without intravitreal injection of 1 mg/0.05 mL of infliximab in the air-filled globe before SO injection at PPV conclusion. Surgeons were masked to treatment allocation until PPV conclusion.

Main Outcome Measures:

The primary outcome measure was anatomic success (defined as complete retinal reattachment without a tamponade at 6 months post SO removal). Secondary outcome measures were final best-corrected visual acuity (BCVA), single-operation success rate (SOSR), rate of recurrent detachment, central

macular thickness (CMT) by macular OCT, macular function by multifocal electroretinogram, and macular vascular density (VD) by OCT angiography.

Results:

Sixty eyes of 60 patients, 30 eyes in each group, completed the study. At baseline, there were no differences regarding age, gender, history of trauma, lens status, duration of RRD, BCVA, intraocular pressure (IOP), intraocular inflammation (IOI), detachment extent in clock hours, number/size of breaks, presence of vitreous hemorrhage, axial length, or grade/extent of PVR between both groups. For the outcome measures, 30 eyes in the infliximab group achieved anatomic success vs. 29 eyes in the control group. The SOSR was higher in the infliximab group (26) vs. the control (23), but this was not statistically significant (P = 0.317). Final logarithm of the minimum angle of resolution BCVA was better in the infliximab group (mean, 0.96; standard deviation [SD], 0.4; Snellen equivalent ≈ 20/180) vs. the control (mean, 1.14; SD, 0.4); Snellen equivalent ≈ 20/280; P = 0.044). There were no differences regarding IOP, IOI, time of SO removal, macular function, CMT, or VD.

Conclusions:

Pars plana vitrectomy with SO tamponade with or without intravitreal infliximab is effective in treating PVR-associated RRD. Infliximab may be associated with modest improvement in final visual outcomes but not anatomic outcomes.