Retina Roundup

February 2022

Dear Friends and Colleagues,

This February 2022 segment of the “New Retina Roundup” contains the compilation of a few interesting articles of the preceding month.

Click on this image to watch the video of New Retina Roundup of February 2022

1. Indian Journal of Ophthalmology. 2021;69(12):3559-3563. doi:10.4103/ijo.IJO_3499_20

EFFECT OF SHORT-TERM MEDITATION TRAINING IN CENTRAL SEROUS CHORIORETINOPATHY

Nongrem G, Surve A, Venkatesh P, et al.

PURPOSE:
Stress and Type A personality are established risk factors for the development of central serous chorioretinopathy (CSC). Meditation is known to have a positive effect on reducing stress levels. This study aimed to assess the effect of short-term meditation training in patients of CSC.

METHODS:
A pilot study was conducted where 40 patients diagnosed with acute and non-resolving CSC were randomly assigned to either of two groups – meditation training and routine care (without meditation). The primary outcome measure was time to resolution of CSC based on optical coherence tomography and fluorescein angiography. Secondary outcome measures were changes in anxiety score (State–Trait Anxiety Inventory [STAI] scores) and blood pressure. The patients were followed up for a minimum period of 4 months.

RESULTS:
Twenty cases were included in each group. The demographic pattern, baseline swept-source optical coherence tomography parameters, and STAI scores were similar in both groups. The time to disease resolution was 9.4 ± 4.22 weeks in the meditation group and 19.5 ± 2.79 weeks in the nonmeditation group ($P < 0.001$). At 4 months, CSC had failed to resolve in 60% of patients with routine care compared with 8% in cases following short-term meditation training. STAI scores showed a reduction in stress levels in the meditation group. Furthermore, statistically significant improvement in systolic and diastolic blood pressures was also observed following meditation training.

CONCLUSION:
Short-term meditation training may be a useful approach in the management of patients with CSC as it tends to reduce stress and prehypertension, and promotes earlier resolution of the condition. However, patient's motivation to complete and pursue the meditation training is a significant barrier.

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2. RETINA. 2022;42(1):27-32. doi:10.1097/IAE.0000000000003259

COMPARATIVE EVALUATION OF OUTCOMES OF DRAINAGE TECHNIQUES IN VITRECTOMY FOR RHEGMATOGENOUS RETINAL DETACHMENT

Kumari N, Surve A, Kumar V, et al.

PURPOSE:
To compare the anatomical and functional outcomes of drainage through posterior retinotomy versus perfluorocarbon liquid (PFCL)–assisted drainage in vitreoretinal surgery for rhegmatogenous retinal detachment and to study intraoperative and postoperative complications.

METHODS:
This was a prospective randomized study of 52 cases who underwent vitreoretinal surgery for rhegmatogenous retinal detachment. Group 1 underwent PFCL-assisted drainage through preexisting break, whereas Group 2 had posterior retinotomy to drain subretinal fluid. Cases were evaluated for retinal reattachment rates, visual outcomes, optical coherence tomography parameters, and postoperative metamorphopsia. The patients were followed up for minimum period of 3 months.

RESULTS:
Two groups were comparable in terms of demographic and preoperative parameters. Both groups had single surgery success rate of 100% by the end of follow-up. Final best-corrected visual acuity in Group 1 was 0.61 ± 0.33 and 0.61 ± 0.32 in Group 2 (P = 0.77). Optical coherence tomography parameters (foveal contour, retinal layers, central macular thickness, and epiretinal membrane formation) were similar between the two groups. Subjective metamorphopsia was present in 30.77% (8 of 26) patients in Group-1 and 69.23% (18 of 26) patients in Group-2 (P = 0.034). One eye had retained subretinal PFCL away from the macula in Group 1.

CONCLUSION:
Anatomical and functional outcomes were similar in vitrectomy using PFCL-assisted drainage versus posterior retinotomy drainage. Postoperative metamorphopsia was lesser in patients who underwent PFCL-assisted drainage through the pre-existing break.

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3. BMC Ophthalmology. 2022;22(1):11. doi:10.1186/s12886-021-02239-0

THE EFFECT OF LONGSTANDING SILICONE OIL ON RETINA CHOROID AND OPTIC NERVE IN EYES WITH RETINAL DETACHMENT: AN OPTICAL COHERENCE TOMOGRAPHY STUDY.

Karaca U, Kucukevcilioglu M, Durukan AH, Akincioglu D.

BACKGROUND:
The study aims to evaluate peripapillary retinal nerve fiber layer thickness (RNFL-T), central macular thickness (MT), choroidal thickness (CT), and thickness of each retinal layer after automatic segmentation in patients who underwent retinal detachment (RD) repair with longstanding silicone oil tamponade.

METHODS:
We enrolled 33 patients who underwent complicated primary rhegmatogenous RD surgery and followed up with a long-term silicone tamponade were included in this retrospective comparative (case–control) study. RNFL-T, CT, and thickness of each retinal layer after automatic segmentation analysis were measured after the longstanding silicone removal surgery.

RESULTS:
The mean silicone oil removal time was 15.1 ± 15.2 (7–70) months. The overall average thickness of the RNFL was 90.7 ± 13.6 µm in the operated eyes and 118.3 ± 35.6 µm in the sound eyes, with a statistically significant difference. The overall average central MT was 186.3 ± 57.7 µm and was significantly lower in the operated eyes than in the sound eyes. Inner retinal layers of the study group showed a significant thinning in the nerve fiber layer, ganglion cell layer, inner plexiform layer, and inner nuclear layer as compared to that of the sound eyes. The subfoveal CT was 213.7 ± 86.6 µm in the study eyes and 217.7 ± 115.5 µm in the control eyes. There was no significant difference between the study eyes and controls.

CONCLUSION:
The effects of silicone oil on the retina remain uncertain; however, morphological results in our study have shown direct or indirect silicone oil–induced toxicity, especially in the inner retinal layers.

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4. Eye. 2022;36(1):57-63. doi:10.1038/s41433-021-01771-z

PARENTAL AGE AND RETINOBLASTOMA—A RETROSPECTIVE STUDY OF DEMOGRAPHIC DATA AND GENETIC ANALYSIS.

Tanwar M, Balaji S, Vanniarajan A, Kim U, Chowdhury G.

OBJECTIVE
To determine the association between the parental age gap and the absolute parental age with the risk of retinoblastoma (RB) development in an offspring.

METHODS
RB individuals diagnosed between March 2013 and December 2019 in a single tertiary eye care centre were included. We recorded the demographic data, parental age and RB1 gene mutation status in the patient's tumour, blood and the parental blood. We categorised RB1 mutation inheritance as sporadic RB with somatic mutations (only present in tumour), heritable RB with de novo (present in patient's blood) and familial (present in patient and parents' blood) germline mutations. The statistical significance was confirmed by Fisher's exact/Chi-square test.

RESULTS
Out of 259 RB patients, 247 were included in our study. Heritable RB with de novo germline mutations was significantly less common (p value: 0.0387; 95% CI: 0.2676–0.9329) and sporadic RB with somatic mutations was more common (p value: 0.0545; 95% CI: 1.025–3.39), if the parental age gap was <10 years. There were increased odds of a heritable RB with de novo germline mutation with an increase in paternal age and this was more intensified when combined with parental age gap of more than ≥10 years. The heritable RB with de novo germline mutations significantly increased as maternal age progressed, only when it was adjusted to ≥10 years parental age gap (p value: 0.0262; 95% CI: 1.26–17.91).

CONCLUSIONS
An increased parental age gap and increased paternal age are independent risk factors for the development of heritable RB with de novo germline mutation.

doi:10.1038/s41433-021-01771-z

5. Ophthalmology. 2022;129(1):67-72. doi:10.1016/j.ophtha.2021.07.020

COMPLICATIONS OF ACUTE POSTERIOR VITREOUS DETACHMENT.

Seider MI, Conell C, Melles RB.

PURPOSE

To evaluate the risk factors for retinal tear (RT) or rhegmatogenous retinal detachment (RRD) associated with acute, symptomatic posterior vitreous detachment (PVD) in a large comprehensive eye care setting.

DESIGN

Retrospective cohort study.

PARTICIPANTS

A total of 8305 adult patients in the Kaiser Permanente Northern California Healthcare System (KPNC) during calendar year 2018 who met inclusion criteria.

METHODS

The KPNC electronic medical record was queried to capture acute, symptomatic PVD events. Each chart was reviewed to confirm diagnoses and capture specific data elements from the patient history and ophthalmic examination.

MAIN OUTCOME MEASURES

Presence of RT or RRD at initial presentation or within 1 year thereafter.

RESULTS

Of 8305 patients who presented with acute PVD symptoms, 448 (5.4%) were diagnosed with RT and 335 (4.0%) were diagnosed with RRD. When considering variables available before examination, blurred vision (odds ratio [OR], 2.7; confidence interval [CI], 2.2–3.3), male sex (OR, 2.1; CI, 1.8–2.5), age < 60 years (OR, 1.8; CI, 1.5–2.1), prior keratorefractive surgery (OR, 1.6; CI, 1.3–2.0), and prior cataract surgery (OR, 1.4; CI, 1.2–1.8) were associated with higher risk of RT or RRD, whereas symptoms of flashes were mildly protective (OR, 0.8; CI, 0.7–0.9). Examination variables associated with a high risk of RT or RRD included vitreous pigment (OR, 57.0; CI, 39.7–81.7), vitreous hemorrhage (OR, 5.9; CI, 4.6–7.5), lattice degeneration (OR, 6.0; CI, 4.7–7.7), and visual acuity worse than 20/40 (OR, 3.0; CI, 2.5–3.7). Late RTs or RRDs occurred in 12.4% of patients who had vitreous hemorrhage, lattice degeneration, or a history of RT or RRD in the fellow eye at initial presentation but only 0.7% of patients without any of these 3 risk factors. Refractive error had an approximately linear relationship with age at presentation of PVD, with myopic patients presenting at a younger age (r = 0.4).

CONCLUSIONS

This study, based in a comprehensive eye care setting, found the rate of RT and RRD associated with acute PVD to be lower than rates previously reported by retina subspecialty practices. Several patient features strongly predicted the presence of initial and late complications of acute PVD.

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