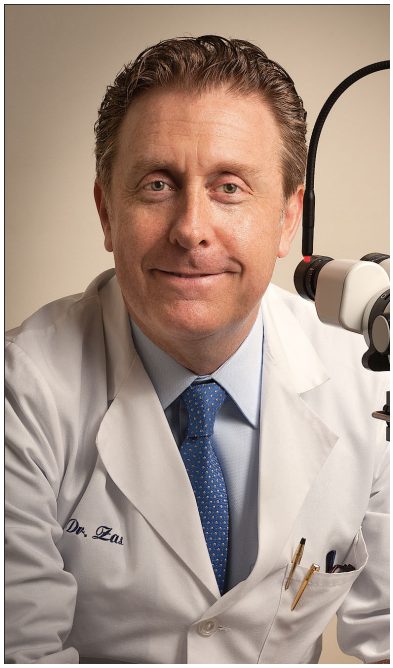
7/28/2023

A 24-Month Follow-Up of Refractory Macular Holes Treated With an Autologous Transplantation of Internal Limiting Membrane Versus Retina Expansion Technique

A 24 month follow-up of refractory macular holes treated with an autologous transplantation of internal limiting membrane versus retina expansion technique.



- Marcelo Zas, MD PhD

Objective:
Can we compare the functional and anatomic outcomes at 24 months of eyes with a primary macular hole that failed to close after a prior surgery and were treated with either an autologous transplantation of internal limiting membrane (AT-ILM) or the retina expansion (RE) technique ?

Purpose:
To compare the functional and anatomic outcomes at 24 months of eyes with a primary macular hole that failed to close after a prior surgery and were treated with either an autologous transplantation of internal limiting membrane (AT-ILM) or the retina expansion (RE) technique.

Methods:
This retrospective, non randomized, comparative pilot study included 28 patients with a primary MH that did not close after a primary surgery. These patients underwent a second vitrectomy with either the AT-ILM or the RE techniques. All patients were seen at the vitreoretinal service of the Instituto de Alta Complejidad Oftalmos, Buenos Aires, Argentina, from December 2016 to December 2017. The study was approved by the local IRB. Written informed consent was obtained from all the patients. This study adhered to the tenets of the Declaration of Helsinki.

All patients with a MH that underwent surgical repair were included in the study if they met the following criteria: (1) prior surgical failure to repair a primary MH; (2) MH with a size of ≥ 500 μm; (3) No other possible causes for visual loss.

The size and basal diameter of the MH were measured using the caliper function in the Spectralis OCT (Heidelberg Engineering, Heidelberg, Germany) software. The basal hole diameter of the MH was measured as the linear length of foveal detachment. MH size was based on the horizontal linear width measured at the narrowest point of the hole as described by the International Vitreomacular Traction Study Group [4].

Patients were excluded if they had a history of diabetic retinopathy, or if they exhibited high myopia (spherical equivalence ≥ 6 D or axial length ≥ 26.5 mm) or retinal detachment associated with MH or epiretinal membranes.

Results:
Patients in the AT-ILM group experienced a statistically significantly improved post-operative BCVA (median 49.50 letters, range 20-66 letters) over the pre-operative BCVA (median 39 letters, range 18-52 letters) (p-value = 0.006 Wilcoxon paired sample test). In contrast, patients in the RE group did not achieve a statistically significant improvement (p-value = 0.328, Wilcoxon paired sample test). The median pre-operative BCVA was 35 letters (range 18-52 letters), whereas the median post-operative BCVA was 39 letters (range 16-66 letters). At 24 months of follow-up, 85.7% of patients in the AT-ILM group achieved closure

compared to 57.1% in the RE group (p-value = 0.209, Fisher's exact test).

Conclusion:
This study demonstrates similar closure rates for both groups however better visual outcomes were obtained with the AT-ILM.

IRB APPROVAL

7/28/2023

International Symposium

Topographic Progression of Geographic Atrophy and Visual Acuity in Korean Patients With Non-exudative AMD

- Seung-Young Yu, MD
- Junwoo Lee
- Jong Beom Park
- Sejun Park, MD
- Kiyoung Kim, MD, PhD
- Eung suk Kim, MD, PhD

Objective:
The relationship between the area change of geographic atrophy and visual acuity was analyzed topographically.

Purpose:
To investigate long-term topographic progression of the geographic atrophy (GA) area and analyze its correlation with visual acuity (VA) in patient with GA secondary to non-neovascular AMD for modeling topographic and temporal progression of GA in Korean patient cohort.

Methods:
Medical record and imaging data of 58 eyes of 34 GA patients with at least 3 years of follow-up using fundus autofluorescence (FAF), were reviewed retrospectively. Region of interests was selected as concentric ring-shaped area of 2mm, 3mm, and 4 mm diameter centered on the fovea (Zone 1, 2, and 3, respectively) and divided into four sub-sections (superior, temporal, inferior, and nasal). The area of GA was measured with semi-automated software. Correlation of GA area enlargement, GA growth rate and changes of best-corrected VA was evaluated.

Results:
The mean GA area enlarged from 4.18 to 15.68 mm^2 and mean BCVA decreased from 0.30 to 0.93 logMAR at 5 years of follow-up. The mean overall GA area growth rate was 0.88 mm^2/year. A growth rate of Zone 2 nasal was higher, while the growth rate of Zone 3 inferior was lower compared to other areas. During yearly follow-up from baseline to 5 years, there was significant differences in GA growth rate of Zone 3 inferior ($P < .005$). The GA area changes of Zone 3 inferior was significantly correlated with BCVA. In a subgroup with GA area £ 0.7 mm^2 at baseline, the mean GA area enlarged with doubling every year to 6.71 mm^2 and the VA decreased from 0.25 to 0.59 logMAR. In subgroup with BCVA decreased under 1.0 logMAR during follow-up, there was a higher growth rate in Zone 2 nasal sector, 2 to 3 years before.

Conclusion:
The overall GA growth rate was 0.88 mm^2/year in the 5-year follow-up of our Korean cohort. For small lesions, other parameters such as area doubling should be considered rather than growth rate. A high GA growth rate in the nasal parafoveal area could be a warning of possible legal blindness within three years.

IRB APPROVAL No - no IRB

7/28/2023

Hydroxychloroquine Toxicity Among Korean patients
Hydroxychloroquine Toxicity Among Korean Patients

- Young Hee Yoon, MD, PhD

Objective:
Characteristics of hydroxychloroquine (HCQ) retinopathy among a Korean population

Purpose:
1) To report on an investigation of this pericentral hydroxychloroquine (HCQ) retinopathy within a Korean population, and 2) on an investigation on its long-term progression.

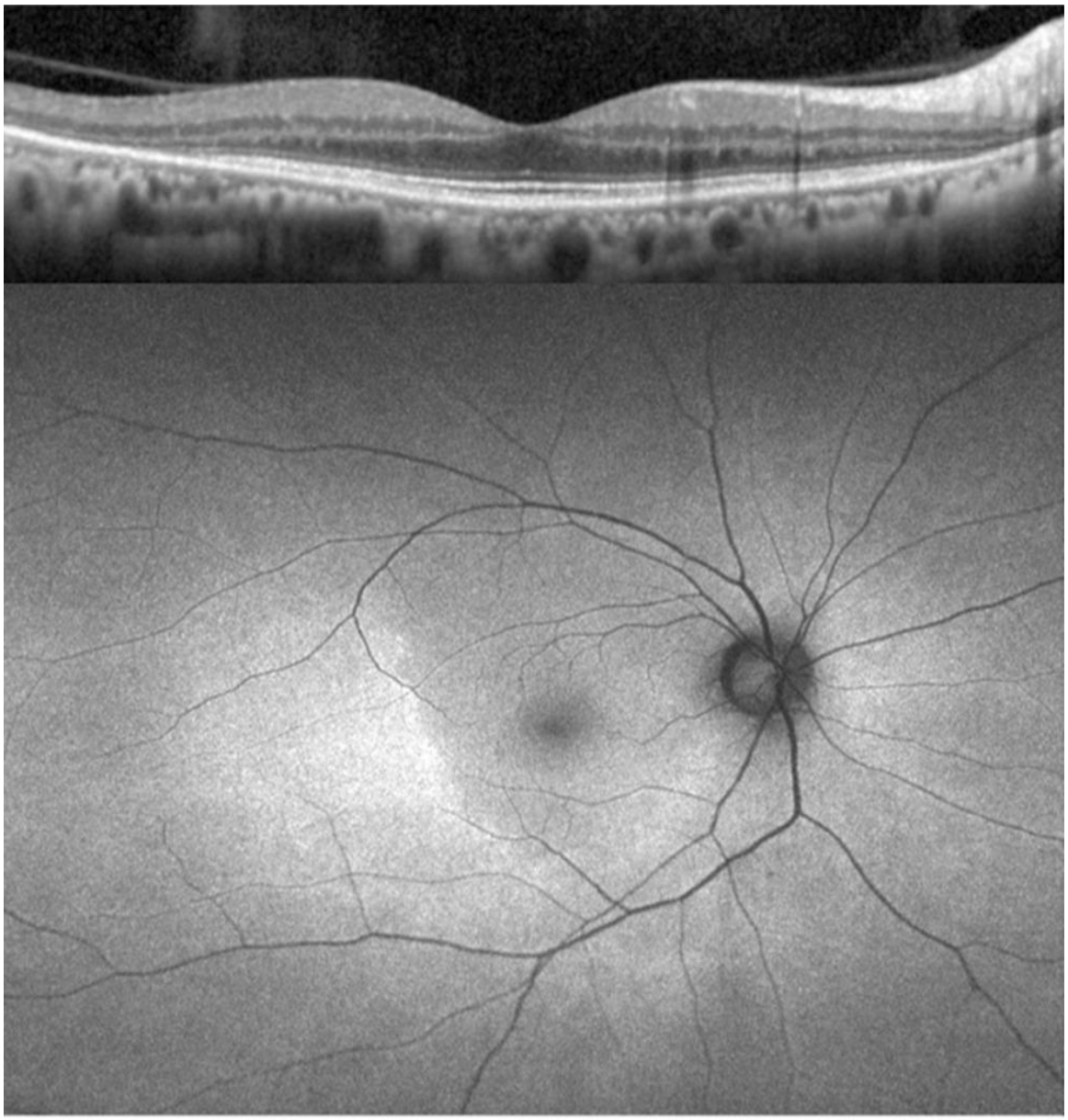
Methods:
Patients were screened for hydroxychloroquine retinopathy using spectral-domain or swept source OCT, fundus autofluorescence (FAF), and Humphrey visual field (VF) tests. Retinopathy progression was evaluated on OCT, or on FAF. Functional progression was evaluated using perimetric parameters over time

Results:
Among initial series of 218 patients referred, 9 (4.1%) were diagnosed with toxicity. Of these, 8 had a predominantly pericentral pattern of retinal change, whereas only 1 had the classic parafoveal distribution of retinal damage. Progression of retinopathy was documented in 3 patients followed more than 12 months while taking HCQ.

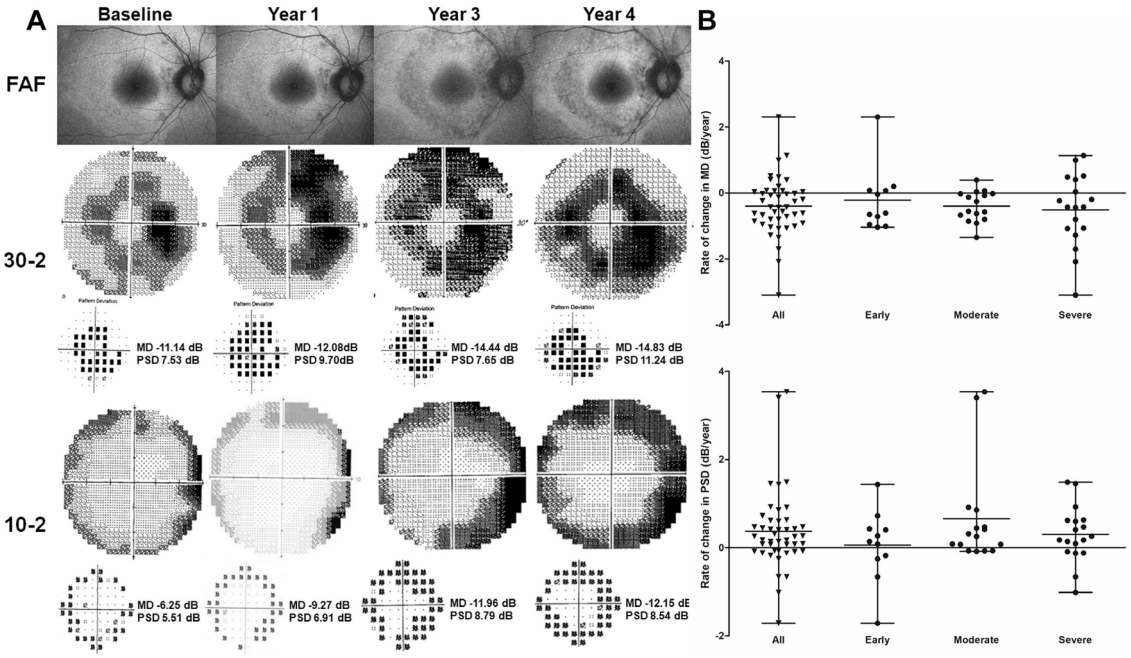
Among 80 eyes with pericentral HCQ toxicity, one third of eyes with early retinopathy showed limited progression or stable condition after drug cessation. In contrast, severe retinopathy eyes showed progressive retinal thinning on OCT or enlargement of abnormal FAF throughout the follow-up period. Functional progression, noted in 58.7% of the pericentral eyes, corresponded with structural progression.

Conclusion:
A pericentral pattern of HCQ retinopathy was predominant among Korean patients, rather than a parafoveal (bull's eye) pattern. Pericentral HCQ retinopathy showed severity-dependent progression. After drug cessation, early pericentral retinopathy usually remained stable, but most severe retinopathy eyes showed centripetal progression threatening the fovea. The need for new screening protocols, including wide-field examinations, such as 24-2 or 30-2 VF protocols, wide-field FAF, or OCT with at least 30 scans, were suggested for detecting HCQ toxicity in Korean and other Asian patients.

IRB APPROVAL Yes



Pericentral HCQ toxicity



Progression of pericentral HCQ toxicity

7/28/2023

Unexplained Visual Loss From Silicone Oil Tamponade
Un-Explained Visual Loss Following Silicone Oil Removal

- Lihteh Wu, MD

Objective:
Our aim is to report the incidence and clinical features of patients that experienced un-explained visual loss following SO removal.

Purpose:
Silicone oil (SO) has long been used as a long term intraocular tamponading agent for complex retinal detachments associated with severe proliferative vitreoretinopathy, giant retinal tears, tractional retinal detachment in proliferative diabetic retinopathy, viral retinitis, and trauma with PVR. SO is generally well tolerated. However complications associated with intraocular SO tamponade such as the development of cataract, glaucoma and keratopathy may occur. Visual loss may occur following SO removal. Causes of this visual loss include retinal re-detachment, optic nerve damage due to glaucoma, hypotony, dense vitreous hemorrhage, expulsive hemorrhage, and corneal abnormalities. Over the past two decades several groups have reported an un-explained visual loss following SO removal.

Methods:
Literature review and comparison to our own series.

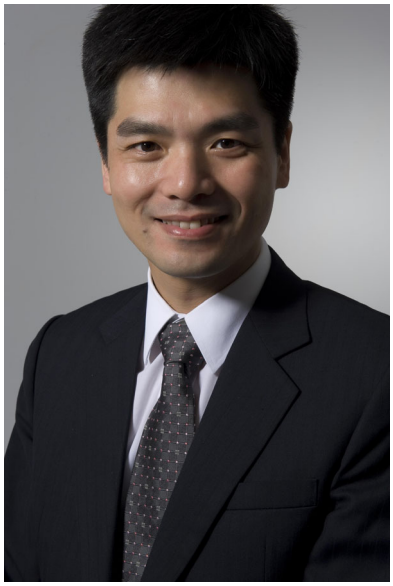
Results:
The incidence has been reported to vary between 2-50% of cases. Risk factors include intraocular pressure and duration of SO tamponade.

Conclusion:
Vitreoretinal surgeons should be aware of this potential complication and take measures to lessen it. Patients should be warned of this potential complication.

IRB APPROVAL

7/28/2023

Cognitive Outcomes Following Intravitreal Bevacizumab for Retinopathy of Prematurity: 8 Year Outcomes in a Prospective Cohort
Cognitive Outcomes Following Intravitreal Bevacizumab for Retinopathy of Prematurity: 8 Year Outcomes in a Prospective Cohort



- Wei-Chi Wu, MD, PhD

Objective: To determine if intravitreal bevacizumab (IVB) have long term effects on the cognitive outcomes of retinopathy of prematurity (ROP) patients.

Purpose: IVB in ROP patients will result in systemic VEGF suppression for up to 3 months. VEGF is an important growth factor related to the neurodevelopment. Whether this treatment will have long-term consequences on the neurodevelopment in children with ROP and IVB treatment remains unknown. The data is important in accessing the long-term safety of IVB on ROP patients.
Methods: This was a prospective study, enrolling a total of 277 children enrolled at the mean age of 7.79 years old. Patients were stratified into full-term, premature without ROP, ROP without treatment and ROP with treatment. ROP with treatment patients received either laser ablation or intravitreal bevacizumab (IVB).
Patients' cognitive outcomes were evaluated based on Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V) for once every 1-2 years, Full-Scale Intelligent Quotient (FIQ) was calculated for evaluation of every patient's cognitive outcome. Chi-square test or Fisher's exact test was performed to compare categorical variables. Comparisons between groups using univariable and multivariable were conducted by linear regression analysis.

Results: Full-term patients showed higher FIQ scores and percentile when compared to the three premature groups (all $p<0.05$). The premature without ROP group also showed significantly higher FIQ in both percentile and scores compared to patients with ROP. ($p<0.05$). FIQ scores and percentile did not show significant difference among different treatments for ROP (IVB, laser photocoagulation, or combined of both) (FIQ score $p=0.19$; FIQ percentile $p=0.37$). After adjusting for gestational age (GA), LogMAR best corrected visual acuity (BCVA) was negatively associated with both FIQ scores($p=0.0008$) and percentile ($p=0.0002$).

Conclusion: ROP patients with prior IVB did not show significant worse cognitive outcomes at the mean age of 8 compared to patients who had laser photocoagulation treatment or both. GA and BCVA are factors that correlate with children' cognitive development.

IRB APPROVAL Yes

7/28/2023

Progress in Initiatives for Internationalization by the Japanese Retina and Vitreous Society
Progress in Initiatives for Internationalization by the Japanese Retina and Vitreous Society

- Makoto Inoue, MD

Objective:
Internationalization of academic societies is important for the development of society. We will present our attempts at internationalization from the Japanese Retina and Vitreoretinal Society.

Purpose:
To introduce our efforts toward internationalization from the Japanese Retina and Vitreoretinal Society (JRVS, President: Taiji Sakamoto).

Methods:
We will present our attempts at internationalization from the Japanese Retina and Vitreoretinal Society.

Results:
The Japanese Retina and Vitreoretinal Society (JRVS, President: Taiji Sakamoto) would like to introduce our efforts toward internationalization. First, we have established an international conference called, FUJIRETINA, which will be held for the second time (March 25-26, 2023), and we have had lectures from members of ASRS and Euretina. This year, more than 1,200 participants from 30 countries registered in the FUJIRETINA conference, and 22 international and 33 Japanese speakers served as faculty members. Second, we have been holding a leadership development program every year to encourage young researchers and discuss how to start up clinical research and how to utilize AI. Third, we have conducted a registry study on rhegmatogenous retinal detachment (J-RD Registry) and published 12 papers in the international journals, and have started a new registry study on epiretinal membrane (J-ERM registry). During the COVID-19 pandemic, we reported a multicenter study of increased endophthalmitis after vitrectomy under a face mask (Sakamoto T, BJO 2022).

Conclusion:
We will continue our efforts to internationalize the JRVS in cooperation with many international societies.

IRB APPROVAL