



ASSOCIATION OF VITREO-RETINA SPECIALISTS OF SRI LANKA

15th COLOMBO RETINA MEETING

ASSOCIATION OF VITREO RETINA SPECIALISTS OF SRI LANKA

Innovate and Educate to Advance Sri Lankan Retina Care

ABSTRACTS OF FREE PAPERS

4th - 6th June 2026
Hotel Cinnamon Grand, Colombo,
Sri Lanka.

www.retinasrilanka.org

LIST OF FREE PAPERS

- CRM FP01** **Artificial Intelligence (AI) Guided monitoring of Retinal Layers in Optical Coherence Tomography (OCT) in Clinical Practice.**
JM Owin Vindula, DMMDDB Dhanapala, UHCA Madushanka, Manul Gunarathne, DSSP Yapa, Danilka Akarawita, Yehan Sajana
- CRM FP02** **Comprehensive Digital Transformation of an Ophthalmology Unit: Impact on Workflow, Efficiency, and Patient Care**
Shehani Bandara, Amali Samarathunga, Lasitha Athapaththu, Nethmi Nettikumara, Rasheeka Ranasinghe, Dr. Chamara Kumarage
- CRM FP03** **Intravitreal Dexamethasone in Macular Edema – An Observational Case Series**
K Niruththan
- CRM FP04** **Fibrovascular stage predicts visual outcomes following vitrectomy for PDR: A prospective cohort study**
DMMDDB Dhanapala, Robert Casson, MP Piyasena, PFSC Fonseka, G Gunawardena, UHCA Madushanka, KAMC Gunaratne, JMO Vindula, DSSP Yapa, Jagjit Gilhotra, U Senarath
- CRM FP05** **Rethinking Ocular Toxoplasmosis Treatment: Intravitreal Clindamycin in Sri Lankan Practice**
KC Batuwangala, P Sriharanathan
- CRM FP06** **Occupational exposure to Formalin and associated health effects among Operation theatre staff**
Nethmi Nettikumara, AP Samarathunga, ADLS Athapaththu, HMSD Bandara, RAR Ranasinghe, KLG Senali, CJ Kumarage
- CRM FP07** **Retinal Red Herrings: Inflammation in Vascular Clothing**
K Niruththan, N Nanayakkara, MI Jayasundara, D Gunasekara

ABSTRACTS OF FREE PAPERS

CRM FP01

Artificial Intelligence (AI) Guided monitoring of Retinal Layers in Optical Coherence Tomography (OCT) in Clinical Practice

JM Owin Vindula, DMMDDB Dhanapala, UHCA Madushanka, Manul Gunarathne, DSSP Yapa, Danilka Akarawita, Yehan Sajana

Introduction / Purpose: OCT produces high-resolution, cross-sectional images of the retina. Basic Pathologies we see in retinal diseases are alteration of perfusion, leakage from blood vessels and neurodegeneration. AI algorithms, particularly address these challenges by: Automated Segmentation, Fluid Detection and Disease Progression Tracking.

Methods: OCT images captured using the CIRRUS 6000 OCT System were used to analyze six important retinal layers (NFL, INL, ONL, ELM, IS/OS, and RPE). A hybrid CNN-BiLSTM model was proposed, combining CNN-based feature extraction with BiLSTM-based sequential learning to predict retinal layer boundaries accurately. The model was trained using Huber loss, Gaussian cross-entropy, and monotonicity constraints, and evaluated using MAE and pixel-level accuracy.

Results: Experimental results showed that the CNN+BiLSTM (64×2) configuration achieved the best performance with an MAE of 0.9878 and approximately 95% accuracy, while maintaining low computational complexity with fewer than 1 million parameters.

Conclusion: The integration of AI into clinical practice has revolutionized the monitoring of retinal layers via OCT. By automating the segmentation and analysis of complex ocular structures, AI systems provide clinicians with high-precision tools for managing degenerative diseases.

CRM FP02

Comprehensive Digital Transformation of an Ophthalmology Unit: Impact on Workflow, Efficiency, and Patient Care

Shehani Bandara, Amali samarathunga, Lasitha Athapaththu, Nethmi Nettikumara, Rasheeka Ranasinghe, Chamara Kumara

Background: The loss of patient records following the Dittwa floods in Sri Lanka highlighted the vulnerability of paper-based systems in ophthalmic care. This disruption prompted the development and implementation of our own comprehensive digital solution within the ophthalmology unit at WKM. The system was designed by us to integrate patient demographics, clinical history, diagnostic investigations (including OCT and biometry), and electronic diagnosis cards into a unified, secure platform, ensuring continuity of care and data protection.

Methods: A pre–post interventional study design was employed to evaluate the impact of digital transformation on workflow efficiency and patient care. Baseline data were collected prior to implementation, followed by post-intervention assessment after full system integration. Key outcome measures included patient throughput, documentation accuracy, retrieval time of clinical records. Data security and patient confidentiality measures were incorporated in accordance with institutional standards.

Results: Implementation of the digital system resulted in a significant improvement in clinical workflow efficiency, with reduced patient waiting times and faster access to medical records. Documentation completeness and accuracy improved substantially, while retrieval of historical patient data became instantaneous. Integration of diagnostic imaging and investigation reports enhanced clinical decision-making. Staff reported increased satisfaction due to streamlined processes, and patient care continuity was notably improved, particularly for follow-up and surgical planning.

Conclusion: The comprehensive digital transformation of the ophthalmology unit demonstrated substantial benefits in workflow optimization, operational efficiency, and quality of patient care. This model highlights the importance of resilient, integrated digital health systems in resource-limited settings, particularly in the face of natural disasters. Wider adoption of similar systems could significantly strengthen healthcare delivery and data security in comparable environments.

CRM FP03

Intravitreal Dexamethasone in Macular Edema – An Observational Case Series

Niruththan K

Introduction: Intravitreal dexamethasone injections have been used in various etiologies of macular edema (ME), though they are not routinely preferred due to their short intravitreal half-life. Instead, dexamethasone intravitreal implants are more commonly utilized. However, there is limited published evidence evaluating the efficacy of repeated intravitreal dexamethasone injections in this context.

Objective: To evaluate the anatomical and functional outcomes of intravitreal dexamethasone injections in diabetic macular edema (DME) and macular edema secondary to retinal vein occlusions (RVO).

Methods: This is an observational case series conducted at the Ophthalmology Unit, Teaching Hospital Badulla, over a 6-month period. Patients with macular edema who showed poor response after at least three doses of intravitreal anti-VEGF therapy (Bevacizumab) for ME due to Diabetes or vein occlusions and demonstrated biomarkers with poor prognosis to anti-VEGF were included. All patients received monthly intravitreal dexamethasone injections. Pre- and post-treatment assessments included optical coherence tomography (OCT) for anatomical outcomes and best corrected visual acuity (BCVA) for functional outcomes.

Results: A total of 22 eyes from 22 patients were included in the study. Outcome analysis is ongoing and will be presented.

Conclusion: To be determined upon completion of data analysis. The study aims to clarify the role of intravitreal dexamethasone injections as a potential alternative or adjunct in refractory macular edema.

CRM FP04

Fibrovascular stage predicts visual outcomes following vitrectomy for PDR:**A prospective cohort study**

DMMDB Dhanapala, Robert Casson, MP Piyasena, PFSC Fonseka, G Gunawardena, UHCA Madushanka, KAMC Gunaratne, JMO Vindula, DSSP Yapa, Jagjit Gilhotra, U Senarath

Purpose: To evaluate the association between fibrovascular stage and visual outcomes following vitrectomy for proliferative diabetic retinopathy (PDR).

Methods: Prospective observational cohort study of consecutive patients undergoing pars plana vitrectomy for vision-threatening diabetic retinopathy at a tertiary referral centre in Sri Lanka. Eyes were categorised into four ordered fibrovascular stages (vascular, fibrovascular thin, fibrovascular thick, fibrous) based on clinical, imaging, and intraoperative findings. The primary outcome was best-corrected visual acuity (BCVA) at 12 months. Non-parametric tests and trend analyses were used to assess associations between stage and outcomes.

Results: A total of 72 eyes were included. Visual acuity improved substantially following surgery, with the proportion of eyes achieving BCVA $\geq 6/12$ increasing from 2.8% at baseline to 15.5% at 12 months, and legal blindness decreasing from 54.9% to 28.2%. Postoperative visual acuity differed significantly across fibrovascular stages (Kruskal–Wallis $p = 0.0078$), with a strong ordered trend toward worse outcomes in more advanced disease (Jonckheere–Terpstra $p = 0.00058$). In regression analysis, increasing stage was associated with worse final visual acuity ($\beta = 0.438$, $p < 0.001$). When grouped clinically, later-stage disease was associated with approximately 0.6 logMAR worse visual acuity compared with earlier-stage disease, independent of baseline vision ($p = 0.0015$). Surgical indication was not significantly associated with visual outcome.

Conclusions: Fibrovascular stage is a strong predictor of visual outcome following vitrectomy for PDR and appears to outperform conventional surgical indications. These findings support a biologically informed approach to surgical decision-making and suggest that earlier intervention may improve visual outcomes.

CRM FP05

Rethinking Ocular Toxoplasmosis Treatment: Intravitreal Clindamycin in Sri Lankan Practice

Batuwangala KC Sriharanathan P

Purpose: To evaluate intravitreal clindamycin as a pragmatic first-line strategy for active ocular toxoplasmosis in a setting where systemic therapy is often limited.

Methods: Two patients presented with acute unilateral visual loss and clinical features of active toxoplasma retinochoroiditis, supported by IgG-positive/IgM-negative serology. Systemic therapy was not feasible due to drug intolerance (Case 2) and renal comorbidity (Case 1). Both received two intravitreal clindamycin injections (1 mg/0.1 ml) at two-week intervals; Case 2 additionally received a posterior sub-Tenon triamcinolone acetate injection with the first dose. Outcomes were assessed using serial fundus photography BCVA and OCT.

Results: Both cases showed rapid regression of active lesions, reduced intraocular inflammation, and restoration of macular architecture on OCT, without injection-related complications. In Case 1, BCVA improved from 1.1 to 0.9 logMAR within 2 weeks and was sustained. In Case 2, BCVA improved from 0.8 to 0.4 logMAR at 2 weeks, further improving to 0.2 logMAR after the second dose.

Conclusion: Intravitreal clindamycin provided effective, well-tolerated control of active toxoplasma retino-choroiditis while circumventing systemic limitations. To our knowledge, this represents the first report of its use in Sri Lanka.

CRM FP06

**Occupational exposure to Formalin and associated health effects
among Operation theatre staff**

Nethmi Nettikumara, Samarathna AP, Athapaththu ADLS, Bandara HMSD, Ranasinghe RAR, Senali KLGD (NO), Kumarage CJ

Background: Formalin (aqueous formaldehyde) is widely used in operating theatres for sterilization and specimen preservation. Despite its effectiveness, formalin exposure poses potential health risks to health-care workers, particularly operating theatre nurses who are frequently exposed to its vapors. These risks include respiratory, ocular, dermatological, and neurological symptoms.

Objective: To assess the level of occupational exposure to formalin and evaluate the associated acute and chronic health effects among operating theatre nurses.

Methods: A descriptive cross-sectional study will be conducted using a structured, self-administered questionnaire among operating theatre nurses. Data collected will include duration of work experience, frequency and level of exposure to formalin vapors, and use of personal protective equipment (PPE). It also evaluates the prevalence of symptoms related to respiratory, ocular, neurological, and dermatological systems, as well as chronic medical conditions and their potential aggravation with exposure

CRM FP07

Retinal Red Herrings: Inflammation in Vascular Clothing

Niruththan K, Nanayakkara N, Jayasundara MI, Gunasekara D

Introduction and objective: Retinal hemorrhages often prompt an initial diagnosis of vascular occlusion, driven by anchoring bias, while inflammatory clues may be overlooked (confirmation bias), leading to premature diagnostic closure. This case series highlights such pitfalls and their clinical consequences.

Methods & Setting: Three cases from the Ophthalmology Unit, Teaching Hospital Badulla, over 3 months.

Case 1: A 65-year-old man treated as branch retinal vein occlusion (BRVO) with anti-VEGF developed vitritis and was referred as possible endophthalmitis. OCT revealed a choroidal granuloma; diagnosis: tuberculous choroidal granuloma with vasculitis. He improved with anti-tuberculous therapy and steroids.

Case 2: A 32-year-old man with acute vision loss (VA 6/60) and CRVO-like features was planned for anti-VEGF elsewhere. Peripheral vascular sheathing suggested vasculitis. History of recurrent oral ulcers led to a diagnosis of Behçet disease. Vision improved to 6/9 with steroids and intravitreal bevacizumab.

Case 3: A 29-year-old man presented with altitudinal field loss, disc edema, and normal blood pressure, initially suspected as NAION. History of oral ulcers and thrombophlebitis led to a diagnosis of Behçet disease which is an uncommon presentation. Vision improved to 6/9 with steroids.

Conclusion: Inflammatory retinal disease can closely mimic vascular occlusions, leading to misdiagnosis through cognitive biases such as anchoring and premature closure. Careful history, peripheral retinal examination, and multimodal imaging are critical to identifying inflammatory etiologies. Recognizing these "red herrings" can significantly alter management and improve visual outcomes.



National Eye Hospital, Colombo, Sri Lanka.
Tel/Fax : 0094 112 69 1338 Email : info@retinasrilanka.org