

ANALYSIS OF THE LEADING CAUSES OF BLINDNESS IN MUMBAI

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Introduction: To understand and evaluate the leading causes of blindness in the Mumbai district, which is essential for eye care professionals to promote and prevent blindness in the urban area with an awareness and education method to the public at large. **Methods:** The cross-sectional study was analysed from 4 April 2019 to 5 May 2019 in Mumbai. The data was collected from 6 various blind organisations in the Mumbai region. A total of 265 adults were interviewed by asking 15 questions covering six blind organisations. The data were segregated into gender, age, onset of blindness, systemic illness, family history, education level, mode of education, causes of blindness, district issuing blindness certificate, and vocational and rehabilitation courses. The visually impaired were made aware of the causes and type of questions that needed to answer by visiting each organisation. After the completion of the study, the feedback was taken. The data were then segregated into various groups. **Results:** A total of 265 subjects were part of the study. Female participants were 73(27.54%), and males were 192 (72.45%). The highest age group were 24-34 years (112- 42.26%), followed by 19-24 years (64- 24.15%). An onset of blindness was more at birth time 123 subjects (46.41%) than below 35 years (1-0.377%) was least found. Total blindness was 254 (95.84%), which was highest and low vision was 11 (4.15%). The major cause of blindness was Retinitis pigmentation – 63 (23.77%) followed by Optic Atrophy – 56 (21.13%). A total of 29 districts from Maharashtra issued a blindness certificate where rural districts contributed more than urban. **Conclusions:** Blindness is a significant public health issue. Thirty-six million people are blind in the world, and India contributes the second largest population of the visually impaired in the Asian region. Genetic counselling, family history, consanguinity of marriage and eye-blinding disorders health awareness plays a very important role in curbing the ratio of blindness around the Mumbai districts. Eye health education and awareness sessions in rural districts play a vital role, which is much needed to control the blindness populations in western India.

VISUAL CHALLENGES FACED BY LOW VISION CHILDREN DURING COVID-19

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Introduction: Visual impairment at a very early stage of life has serious consequences on a child's development. The COVID-19 pandemic and lockdown restrictions resulted in interrupted schooling affecting the development of most children. The aim of this study was to explore the challenges faced by visually impaired children who were given visual aids prior to the pandemic. The study also analysed the continuance strategies in adapting the 'new normal' by visually impaired children and their parents as schools resumed.

Methods: This was a qualitative exploratory study. Personal interviews were conducted following an interview guide. School-going children who were given low vision devices prior to lockdown and their parents were telephonically interviewed in the local vernacular language. Interviews were audio recorded, transcribed and translated into English. Inductive thematic analysis was performed to draw the conclusions.

Results: Data saturation was observed after conducting interviews with 21 visually impaired children and their parents. Out of 21 participants, 12 children never used the device, six used it less frequently, and three used it continuously. The lockdown restrictions and learn-from-home strategies proved better for these children, as reported by 15 children who continued their classes in online mode. Mental support and personal attention of family members and the use of mobile phones helped them to continue their studies during lockdown, resulting in little improvement in academic performance. Post lockdown, 17 children reported cooperation from school teachers and fellow students in terms of alterations of seating arrangement, audio inputs and personal attention helping them to cope with the 'new normal' in schools.

Conclusions: Personal attention, care, and support from parents proved to be the most important factor in low vision care in dealing with difficult situations like lockdown. Motivating and educating the caretakers to connect with low vision children must be emphasised during rehabilitation sessions. Technology-enabled academic solutions need to be integrated with newer pedagogy to enhance the learning and development of visually impaired children.

EFFECTIVENESS OF M-CHART IN MEASURING METAMORPHOPSIA IN MACULOPATHY

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Introduction: Metamorphopsia is the symptom of visual function disturbances in different macular disorders, sometimes preceding the clinical appearance of maculopathy. Micropsia and macropsia are two major types of metamorphopsia. M-chart consists of 19 dotted lines with dot intervals ranging from 0.2° to 2.0° of visual angle. The length of the dotted line is 20°, and the fixation point is located at the midway of the dotted line. Auxiliary targets are present at each side of the fixation point to assist in fixation.

Methods: This study focuses on the comparison of the sensitivity and specificity of the M-chart with the Amsler grid. Independent variables that are taken into consideration in this study are age and gender. Similarly, the dependent variables are visual acuity, M-chart score, and Amsler grid result. The presence of maculopathy was confirmed with SD-OCT (Heidelberg Engineering Germany, version 1.3). In all cases of confirmed maculopathies, measurement of metamorphopsia was done using the Amsler grid and M-chart test. Age and sex-matched controls were taken, and their complete ophthalmological examinations were performed, including the Amsler grid test and the M-chart test.

Results: The mean vertical and horizontal metamorphopsia scores with M-chart in the group of eyes with maculopathy were $0.46^\circ \pm 0.45^\circ$ and $0.49^\circ \pm 0.40^\circ$, respectively. Metamorphopsia was detected in 76.7% (n=33) of eyes with maculopathy using M-chart. Amsler grid was abnormal in 55.8% (24) of the eyes with maculopathy, and it was normal in 96.2% (n=25) of the eyes without maculopathy. Vertical M-score was abnormal in 69.8% (n=30) of the eyes with maculopathy and normal in all controls. Horizontal metamorphopsia was abnormal in 65.1% (28) of the eyes with maculopathy and normal in all controls.

Conclusions: A patient's quality of vision cannot be determined solely by visual acuity. For a better understanding of the patient's subjective symptoms, metamorphopsia should be assessed. With the introduction of new treatment modalities like an intravitreal injection for macular oedema and AMD, early detection of macular disease through an M-chart and treatment of the conditions could preserve the remaining vision. Moreover, the application of the M-chart may lead to better care for patients with macular diseases.

VISUAL FIELD DEFECTS IN NEURO-OPHTHALMOLOGICAL DISEASES AT A TERTIARY HOSPITAL IN NEPAL

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Introduction: This retrospective study aims to describe the pattern of visual field defects among patients presenting with neuro-ophthalmological diseases in a tertiary hospital in Kathmandu. **Methods:** Medical records of patients undergoing Goldmann visual fields (GVF) of neuro-ophthalmological illnesses from July 2019 to June 2021 were retrospectively reviewed. Patient demographics, laterality of the disease, clinical diagnosis and pattern of visual field defect were evaluated and entered and analysed using SPSS version 20 using descriptive univariate and bivariate analysis. **Results:** A total of 216 subjects (378 eyes) with a mean age of 34.52 ± 14.80 years were included in the study. The visual field defects were divided into four categories: optic nerve disorders (76.4%, n=165), chiasmal disorders (17.6%, n=38), retrochiasmal disorders (2.8%, n=6) and miscellaneous (3.2%, n=7). Disc oedema/papilledema was the most common diagnosis in optic nerve disorders, with enlarged blind spots (79.1%) and constriction of visual fields (18.3%) as patterns of visual field defects, followed by optic neuritis. Common lesions affecting the chiasma in our study were craniopharyngioma, on whom 50% had the classical temporal field involvement (bitemporal-20%, inferotemporal-20% and superotemporal-10%) and pituitary lesions, where 30% showed constriction of peripheral fields, 57.5% showed temporal field defects (mostly superotemporal) in both eyes. Retrochiasmal lesions were less common, but all showed a bilateral and homonymous pattern of visual field defect. **Conclusions:** Optic nerve disorders were the most common group of conditions undergoing visual fields. Understanding the varied patterns of visual field defects can aid early diagnosis and guide the timely treatment of common neuroophthalmological diseases.

**OPTOMETRIC REHABILITATION APPROACH FOR MANAGING VISUAL -
VESTIBULAR SYMPTOMS**

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The lecture will provide attendees with a rehabilitation approach to managing sensorimotor vision function and its contribution to a patient's presenting vestibular symptoms. Vestibular symptoms may be solely consequent to a vestibular disorder, or they may be secondary to acquired neurological conditions, such as concussion (mild traumatic brain injury), moderate to severe traumatic brain injury, stroke, or encephalopathy, to name a few. The neuroanatomy and symptoms related to visual-vestibular function will be presented, followed by the more common sensorimotor vision deficits, their underlying neurological correlates, and primarily associated vision symptoms. A signal detection theory-based rehabilitation paradigm will then be presented to manage these more common sensorimotor vision deficits contributing to and/or exacerbating a patient's vestibular symptoms.

WHAT MECHANISMS INFLUENCE MYOPIA DEVELOPMENT AND PROGRESSION?

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What causes myopia to develop in some individuals and why does it progress at a rapid rate in a select few? What can we do to control it? For several decades research has pointed to different factors and mechanisms which could lead to myopia.

Factors such as, central defocus caused by lag of accommodation during near work vs. peripheral defocus seen in most myopic eyes, near work vs outdoor activity, use of visual display units have all been shown to play a major role in myopia development and progression. Recent research shows that light could have an influence on myopia development through dopamine regulations and/or vitamin D changes.

Myopia development could also be influenced by other factors such as circadian rhythm and diet. The influence of these factors on myopia development and the mechanisms of action will be discussed. The knowledge of myopia development mechanisms will be used to look at options available for myopia prevention from lifestyle and environmental advice to stop or delay myopia onset to screening/follow-up to predicting myopia development and progression to offer prophylactic treatment.

The current guidelines on myopia management in the light of what we know about the mechanisms at present and how this knowledge is evolving with the body of ongoing research in myopia is important to understand to appreciate how the landscape of myopia management guidelines develop and evolve with further research.

COLOUR VISION AS A DIAGNOSTIC TOOL FOR EYE DISEASES

TJ Waggoner

Waggoner Diagnostics

This presentation will give a brief overview of color vision function and how color vision deficiencies, both genetic and acquired, change our perception of color. We will discuss the difference in how cataracts affect our color vision versus the other three top leading causes of blindness, macular degeneration, glaucoma, and diabetic retinopathy, which are neuro-optometric related, whereas cataracts are not.

We discuss what colour vision tests can be used to help improve patient outcomes regarding the top four leading causes of blindness.

Last, we discuss how to utilize these diagnostic color vision tests to identify and measure the progression of cataracts.

CONTACT LENS MANAGEMENT IN VARIOUS CORNEAL TOPOGRAPHY PATTERNS OF IRREGULAR CORNEA

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Introduction: Published original investigation (Shah et al. OVS 2022; Vol 99 (7)) highlights various topographic patterns and their prevalence in a large spectrum of ectatic corneal diseases (ECDs). Knowledge of these patterns can help clinicians with quicker diagnosis and selection of appropriate contact lens (CL) design. This study aims to evaluate the effectiveness and outcomes of customised CL in the visual rehabilitation of patients with ECDs, having various corneal imaging patterns prevailing in the State of Gujarat, India. **Methods:** Prospective study included 29 (43 eyes) subjects with ECDs evaluated for CL fitting. Of the 43 eyes, 18 had central or paracentral patterns, 7 had asymmetric patterns, 8 had advanced patterns, 5 had peripheral patterns, and 5 had rare patterns of ECDs. Corneal CL was chosen as the first choice as a part of management. Soft lens, corneal and scleral lens trial sets were used in the fitting process. A customised fitting procedure was done, ensuring the best possible fit using various options of edge fitting and diameter sizes available. Analysis of the visual acuity, wearing time, and corneal staining post-lens removal was recorded. All of the patients were followed up for 6 to 8 months aftercare visits at various intervals. **Results:** Average mean K was 52.5 ± 6.60 D. Average best spectacle-corrected visual acuity was 0.50 ± 0.34 ; however, it was improved to 0.12 ± 0.13 with CL ($P < 0.001$). A total of 88.4% were fitted with customised corneal CL, 7.0 % with mini-scleral CL, and 4.6% with soft CL. Fitting based on final trial lens parameters, 41.86% required diameter adjustment, 65.1% required toric periphery and 55.8% required edge adjustment. To achieve optimum fit for maintenance of optimum vision and corneal health, an average number of 1.58 ± 0.69 lenses were required. The average wearing time was 7.7 ± 0.97 hours/day. None of them showed any clinically significant corneal staining at 6 to 8 months of follow-up visits. **Conclusions:** Material and technology advancements in CL designs can aid in achieving an optimum fit, improving vision, and maintaining corneal health in various patterns of ECDs.

WHICH RED-TINTED CONTACT LENSES ARE TO BE USED ON COLOUR-DEFICIENT SUBJECTS?

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Introduction: Background: There are many different types of red tones contact lenses available to help colour-deficient subjects in improving colour perception, such as X-Chrome, EnChroma and ChromaGen lenses. The guidelines for choosing red-filtered contact lenses are weakly defined. Therefore, the outcome of this study will enable practitioners to determine which tone of type red-tinted lenses to choose with reference to the Total Error Score (TES) value of the subject. **Methods:** Clinical problem(s): Inaccurate choice of red-tinted contact lenses (CL) tone will cause decreased performance in colour perception and can be time-consuming for both practitioner and subject. Using the TES from the Farnsworth-Munsell 100 Hue test on colour-deficient subjects as a guide will reduce the probability mentioned. The spectral transmittance (ST) of these lenses with different red tones was identified using a spectrophotometer. **Results:** Existing solution(s) & its shortcoming: Usually, in a conventional method, a colour-deficient subject will trial and error each type of red tint trial contact lenses available and later choose the lens that gives the best outcome using the Ishihara Test (80% pass) as its marker. Clinical testing can be complex and sometimes lead to confusion and time taxing. To ease practitioners to narrow their choices, they may now opt to use the TES value as a guide. For TES of 180 and below, it is recommended a red tint lens with higher ST (570nm), and for TES above the value of 180, the lens of lower ST (450nm) should be tried on. **Conclusions:** Clinical pearls: Low ST red tint lenses showed the best performance in TES value of more than 180, whilst the high ST red tint lenses suit best for TES of less than 180. Take home message: The TES value is a potential guide to narrow the selection of the red-tinted CL that provides the best performance.

CORRECTING HIGH ASTIGMATISM FOR MYOPIC-ASTIGMATS USING A NOVEL TORIC ORTHOKERATOLOGY LENS: A CASE SERIES

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Eleven young Chinese adults (age= 19 to 25) with myopia ranging from 0.25 to 4.50 diopters (D) and With-The-Rule astigmatism ranging from 2.00 to 3.25D were recruited. All participants had unremarkable ocular and general health conditions. Orthokeratology (ortho-k) has been widely used in East Asia due to its demonstrated effectiveness in controlling myopia progression while providing clear unaided vision in children. The prevalence of myopia and astigmatism increases from childhood to adulthood. Clinically, ortho-k is indicated for patients with low to moderate levels of myopia and astigmatism. To fill in the gap for myopic patients with high astigmatism, a novel ortho-k lens design with a toric base curve was developed. This study presents a case series on the clinical performance of this novel ortho-k lens over one month. Subjective refraction, visual acuity measurement (unaided and aided), corneal biomicroscopy and topography were performed before and after ortho-k treatment at one day, one week, two weeks, and four weeks. The results reported here were collected from the eye with higher astigmatism or from the right eye if both eyes had the same levels of astigmatism. At four weeks, there was a significant reduction in myopia and astigmatism. Myopia decreased from a median of -3.00D (range: -4.50 to -0.25D) to +0.50D (range: -1.25 to +1.00D), while astigmatism decreased from a median of 2.25D (range: 2.00 to 3.25D) to 1.00D (range: 0.00 to 1.25D). The median astigmatism was reduced by approximately 60% in the one-month period. The unaided visual acuity improved from a median of 0.98 logMAR (range: 0.24 to 1.22 logMAR) to 0.00 logMAR (range: -0.14 to 0.52 logMAR). No significant adverse event was observed, and no corneal staining > grade 2 was observed in all aftercare visits. Myopia and astigmatism were expected to be reduced and stabilised at one month. The novel toric ortho-k lenses effectively reduced myopia and astigmatism in myopes with high astigmatism. The novel toric ortho-k lens design showed promising clinical performance in reducing myopia and astigmatism in young adults. The lenses can be considered an alternative option for myopia control and vision correction in myopes with high astigmatism. Further studies are warranted to evaluate the clinical efficacy of this novel lens design in children.

EFFECTS OF SOLVENTS AND SURFACTANTS FOR USE IN THE DEVELOPMENT OF PERIOULAR SKIN PROTECTION AGENTS

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Introduction: Periocular skin cells, namely human keratinocytes, are widely used cell lines for in vitro cytotoxicity testing in developing natural or synthetic products as skin protection agents. Experiments with cell lines are predominantly performed in an aqueous-based growth medium, thus posing a problem for water-insoluble agents to be soluble in the growth medium. The water-insoluble samples often require the addition of a solvent or a surfactant to facilitate solubilisation. However, introducing an extraneous solvent or surfactant to the growth medium is potentially toxic to cell cultures, with its effects differing by cell line model at various concentrations. Therefore, the pre-determination of a safe solvent or surfactant concentration that could be used for dissolving lipophilic agents from natural compounds for a specific cell type is paramount to obtain accurate results. The study evaluated the cytotoxic effects of commonly used solvent, dimethyl sulfoxide (DMSO) and surfactant, Tween 80, towards human keratinocytes (HaCaT). **Methods:** 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide, MTT assay was performed to measure the cytotoxicity of serial doses of DMSO (3.1%, 1.55%, 0.78%, 0.39% and 0.19%) and Tween 80 (0.12%, 0.06%, 0.03%, 0.015%, 0.008%) on human keratinocytes. **Results:** DMSO at high concentrations between 1.55% and 3% reduced HaCaT cell viability in a dose-dependent manner, with IC50 value was found for the latter. The MTT assay showed no IC50 value for all ranges of Tween 80 concentrations tested. **Conclusions:** Overall, the results recommend the application of DMSO of less than 1.55% in growth media for the human keratinocytes cell line. Tween 80 at a maximum concentration of 0.12% has low toxicity to human keratinocytes, making it a good choice as a surfactant.

PARC: A NOVEL DEVICE FOR ACCURATE AND CONVENIENT PERIPHERAL REFRACTION MEASUREMENT USING RETINOSCOPY

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Introduction: Peripheral refractive error is an important measure in understanding the risk associated with myopia progression. We developed an affordable device called the Peripheral Ancillary Refraction Component (PARC) to estimate peripheral refraction using a retinoscope. **Methods:** A total of 50 young adults with a mean age of 24.21 ± 3.02 years were recruited for this study. Peripheral refraction measurements were performed using three techniques: a) without PARC, b) with PARC, and c) using eye rotation. Two masked experienced examiners performed peripheral refraction in the temporal 220 and nasal 220. The obtained values were compared to the open-field autorefractor (OA, Shin Nippon Nvision-K 5001) using Bland-Altman plots to evaluate the agreement between the three retinoscopy techniques with OA. All measurements were obtained for the right eye under non-cycloplegic conditions. **Results:** The mean difference in the central spherical equivalent (SE) values between the retinoscope and OA was 0.29 ± 0.43 D ($p < 0.001$). A significantly strong correlation was found between two examiners for SE ($r_s = 0.81$ to 0.92) in both temporal 220 and nasal 220. The values obtained without PARC and with PARC were similar to the OA values for both eccentricities. The mean difference in SE values between open-field autorefractor and peripheral retinoscopy without PARC was $+0.12 \pm 0.64$ D (temporal 220, $p = 0.29$) and $+0.17 \pm 0.67$ D (nasal 220, $p = 0.11$). Similarly, the mean difference in SE values between open-field autorefractor and peripheral retinoscopy with PARC was $+0.11 \pm 0.63$ D ($p = 0.22$) and $+0.13 \pm 0.59$ D ($p = 0.18$). **Conclusions:** Overall, peripheral refraction using different retinoscopy techniques were found to be in good agreement with OA in both temporal 220 and nasal 220. Compared to other peripheral retinoscopy methods, which have limitations in accurately estimating the degree of the eccentricity and require large space for fixing the targets, using PARC can be advantageous for an examiner to peripheral refraction with a retinoscope in a clinical setting.

MYOPIA MANAGEMENT WITH SPECTACLE-BASED (DIMS) OPTION

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Introduction: Myopia management is necessary considering the research findings of half of the world becoming Myopic by 2050. Higher myopia may have sight-threatening complications in later years. If picked up early, children with myopia can be put on a myopia management strategy to prevent them from going into high risk for myopia complications. Spectacle-based options are easy to implement in any optometry set-up with no additional investment. They are non-invasive and generally have very good patient acceptance. **Methods:** 25 patients were prescribed DIMS lenses for their myopia management, with the mean age being 13.30 years and spherical equivalent refractive error of RE -2.99 Ds and LE -2.77 Ds. Refraction was done using auto refraction, astigmatic fan, JCC, duochrome and subjective assessment. Slit lamp examination, convergence, and cover tests were done. Follow up examination was done using duochrome over glasses to estimate the myopia progression. Subjective satisfaction surveys for DIMS experience were filled out by patients/guardians. **Results:** The DIMS lens-wearing period varied from 6 to 14 months. Patients who visited for follow-up till the time of submission of this abstract exhibited good myopia control. **Conclusions:** The observational evaluation of 25 patients at Saoji Vision Care demonstrates that spectacle-based myopia control – DIMS, is a promising option for controlling myopia in children for the follow-ups done till the submission of this abstract. The follow-up is ongoing. DIMS option for myopia management was found to be effective in the small sample size of Indian children. **Limitations:** With axial length becoming the mainstay in follow-up for determining the effectiveness of any myopia management therapy, it would be better to add optical biometry evaluation in all follow-up visits for future studies.

DOES HAVING MYOPIC PARENTS INCREASE THE RISK OF EARLY-ONSET HIGH MYOPIA?

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Introduction: Early-onset high myopia could have a greater risk of pathological complications due to the longer duration of the disease. The development of early-onset high myopia is attributed to genetic factors. Given that genetic association studies identified single-nucleotide polymorphism, which explains the variation in only a few individuals, we aimed to understand if early-onset high myopia is associated with the presence of myopic parents. **Methods:** We conducted a retrospective study which involved 268 individuals with myopia who visited the myopia clinic at a tertiary eye hospital. The individuals were categorised into 1) Early-onset high myopes (EOHM), 2) Early-onset low myopes (EOLM) and 3) Late-onset low myopes (LOLM) based on two criteria. The definition of early-onset myopia in Criterion 1 and Criterion 2 was age ≤ 10 years and ≤ 6 years, respectively. Both criteria defined high myopia as SER ≤ -6.00 diopters (D). Information about demographics, age of apparent onset of myopia, number of myopic parents, time spent outdoors, and time spent on near-work was obtained from electronic medical records. **Results:** The proportion of individuals with at least one myopic parent was 61%, 74%, and 48% in EOHM, EOLM, and LOLM, respectively, based on Criterion 1; the corresponding proportion based on Criterion 2 was 57%, 74%, and 66%. After the adjustment for age, gender, time spent outdoors, and time spent on near-work, the odds ratio (OR) in an individual with EOHM having at least one myopia parent in comparison with EOLM was 0.72 (0.34-1.54, P=0.4) and LOLM was 0.23 (0.03-1.62, P=0.1) in Criterion 1. Similar findings were obtained in Criterion 2 with no significant increase in odds of development of EOHM with the presence of at least one myopic parent in comparison with either EOLM (OR: 1.54, 0.33-7.24, P= 0.6) or LOLM (OR: 0.76, 0.28-2.05, P=0.6). **Conclusions:** The presence of myopic parents poses a risk for all myopes alike, irrespective of the age of onset and degree of myopia. There is no additive risk for developing early-onset high myopia in the presence of myopic parents.

CHOOSING A MYOPIA CONTROL OPTION IN THE PRESENCE OF BINOCULAR VISION DYSFUNCTIONS

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The inheritance concept cannot explain the rise in myopia that has occurred in the last few decades and worsened after COVID-19. Epidemiological theories have demonstrated environmental factors like disproportionate indoor near work, reading or computers in the development and progression of myopia. Binocular vision assessment not only adds so much more to the clinical picture, but it also makes the optometrist's life more interesting. Still, it could also be that secret sauce that may help bridge the gap towards effective myopia control modalities or, if not much, may answer the questions where the known modalities are not giving the expected results. Sudden rise in the cases of acute onset esotropia with diplopia during & after COVID, myopia progression in children after board exams, or even esotropia increasing on follow-up visits after extensive competitive exams preparations, or even pre-myopes showing a higher accommodative lag over those who do not become myopic attracts the attention about the accommodative and vergence dysfunctions following to excessive near work. All the current optical interventions for myopia are based on a common idea of reducing peripheral hyperopic blur or inducing myopic blur. But these peripheral zones of plus power around a central clear zone have the possibility to interfere with the accommodative and binocular system as myopic children may underaccommodate by looking through the power and might deteriorate the already affected accommodative function due to myopia. Optometrists subscribing the myopia management strategies need to know about the possible effect the existing binocular vision dysfunction may have on their management strategy or even how the various myopia-management modalities may affect binocular vision resulting in reduced reading comfort or working of an individual. Myopia has long been associated with inaccurate and insufficient accommodative behaviour at near and increased accommodative. Perceiving these conditions in both "at-risk emmetrope and myopic child" can disclose the picture of myopia progression risk, and their management could provide added benefit to myopia control treatment. Selecting a myopia control option is easy if binocular vision function is normal. Still, close monitoring of binocular processes may prove to be an important tool in refining future strategies or may alarm for a timely intervention through vision therapy to support the child for smooth functioning along with myopia control.

VISION RESTORATION IN PATIENTS WITH BILATERAL CORNEAL DYSTROPHY

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A 32-year-old male with bilateral corneal dystrophy visited our clinic after being referred by a corneal surgeon for the trial of scleral contact lenses. He was diagnosed with bilateral corneal dystrophy ten years ago, and his mother was also diagnosed with the same hence, it was hereditary for him. The main symptoms he wanted to reduce were reduced night vision, glare, and headache. With his vision, he managed to drive his car in the daytime only. The patient's aided visual acuity (with the spectacles he used for six months) was 5/60 and N24 in both eyes for distance and near, respectively. No pathological tests and investigations were done. We prescribed him the 14.50 mm Corneo Scleral lens for both eyes. Lubricants and antibiotic eye drops were also prescribed to increase wearing time and reduce discharge. A trial with Corneo Scleral Lenses (14.50 mm diameter scleral lens) improved the vision to 6/9p (6/9 -2) and N12 in both eyes for distance and near. With the final Corneo Scleral Lenses (14.50 mm diameter scleral lens), the vision was improved to 6/9p (6/9 -2) and N12 in both eyes for distance and near. He was able to read and write, use the phone easily, watch TV, and drive a car, and the glares were reduced.

EVALUATION OF VISUALLY EVOKED POTENTIAL PARAMETERS IN PATIENTS WITH HYPOTHYROIDISM

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Introduction: Hypothyroidism is a common endocrine disorder affecting millions worldwide. It is characterised by a reduced production of thyroid hormones, which can result in a range of symptoms, including fatigue, weight gain, and cognitive impairment. One potential manifestation of hypothyroidism is a change in the visual system's function, which can be assessed through visual evoked potentials (VEPs). VEPs measure the brain's electrical activity in response to visual stimuli and can provide valuable information about the integrity of the visual pathway. In this research abstract, we evaluate the VEP parameters in patients with hypothyroidism to determine whether there are any significant differences compared to healthy controls. **Methods:** 59 female patients with a history of hypothyroidism, aged between 20 and 60 years, and 25 age and gender-matched controls were enrolled. All the subjects had a complete ophthalmic examination. For VEP testing, subjects were exposed to checks subtending a visual angle of 60 and 15 minutes of arc using Roland Reti-Scan using Retiport 4.8.1.12 following the ISCEV clinical pattern VEP protocol. **Results:** The mean P100 latency in hypothyroidism groups of pattern reversal VEP (PRVEP) was significantly delayed in both checks' sizes 60 minutes and 15 minutes (111.44 ± 7.52 and 112.93 ± 7.96 , respectively) as compared with controls (106.78 ± 3.22 and 106.96 ± 3.56 , respectively) ($p < 0.001$). Similarly, the mean N75-P100 amplitudes were reduced in hypothyroidism groups (9.03 ± 4.30 and 9.34 ± 4.80) compared with controls (12.73 ± 5.07 and 13.50 ± 5.43) ($P < 0.001$). There was a significant correlation between thyroid stimulating hormone and P100 latency for both check sizes 60 minutes and 15 minutes ($r = 0.475$, $p = 0.005$ and 0.479 , $p = 0.005$, respectively). **Conclusions:** Hypothyroid patients (both overt and subclinical groups) have significantly delayed P100 wave latency and reduced N75-P100 amplitudes for both check sizes compared to the age and gender-matched normal subjects. Therefore, VEP acts as a dependable marker for detecting neurological deficits in thyroid deficiency, which can involve the central nervous system at a much earlier stage.

CUSTOMISED OCULAR PROSTHESIS IMPACT IN THE MANAGEMENT & REHABILITATION OF ONE-EYED PATIENT

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Patients with ocular loss tend to have physical and psychosocial difficulties. The self-confidence & self-image of such a person is very low owing to facial disfigurement. It is a challenging task to provide a symmetrical-looking ocular prosthesis which shows good eye movements & also comfortable to wear. Readymade ocular prostheses are popularly available, but they have a lot of shortcomings. Pooling of fluid in the cavity of a stock prosthetic eye, also known as conjunctival discharge or mucus discharge, can be a common issue. The discharge is typically caused by a buildup of mucus, debris, or other materials in the socket or around the prosthetic eye and can result in discomfort, irritation, or infection. There are several potential causes of conjunctival discharge in individuals with a stock prosthetic eye, like poor fit: If the stock prosthetic eye does not fit properly, it can result in irritation or rubbing against the socket, which can cause the production of mucus or other discharge. Bacterial or fungal infections in the socket or around the prosthetic eye can result in the production of discharge. Some individuals may be allergic to the materials used in the stock prosthetic eye, which can result in inflammation and discharge production. Custom-designed Ocular Prosthesis fabricated after meticulous mapping of the eye socket exhibits good movements, is very comfortable to wear, less infection & discharge, and mimics the colour & size of the fellow eye. The boost in the self-image & social acceptance of the patient provides them with a better quality of life, making them more involved & productive. A properly fitted custom designed ocular prosthesis not only enhances the facial cosmesis of the person but also increases self-confidence & self-esteem immensely.

**IN-VIVO VISUALISATION OF THE PHOTORECEPTORS USING SPECTRALIS HIGH
MAGNIFICATION MODULE IMAGING IN CENTRAL SEROUS CHORIORETINOPATHY**

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This case study aimed to visualise photoreceptors using the Spectralis High Magnification Module (HMM) in a case of central serous chorioretinopathy (CSCR) and to correlate the findings with those of optical coherence tomography (OCT) and optical coherence tomography angiography (OCT-A). A 35-year-old Caucasian male with chronic CSCR in the left eye was examined using HMM, OCT and OCT-A. The photoreceptors mosaic was assessed both in diseased and uninvolved areas. The patient's physical examination was normal, with no systemic conditions. A partial topographic correlation between the loss of photoreceptors on HMM images and an altered reflectivity of the photoreceptor layer on en-face OCT was noted. Multiple images were captured using HMM lens and OCT-A for the choriocapillaris flow void. We expected to see a correlation between the photoreceptor damage on HMM and choriocapillaries flow-void areas on OCT-A in the retina of CSCR patients. Interestingly, a correlation was seen between the photoreceptor damage on HMM and choriocapillaries flow-void areas on OCT-A. HMM is a non-invasive imaging modality that allows the in-vivo visualisation of photoreceptor damage in a diseased retina. Focal abnormal perfusion of the choriocapillaries might influence the integrity of the overlying photoreceptors in CSCR.