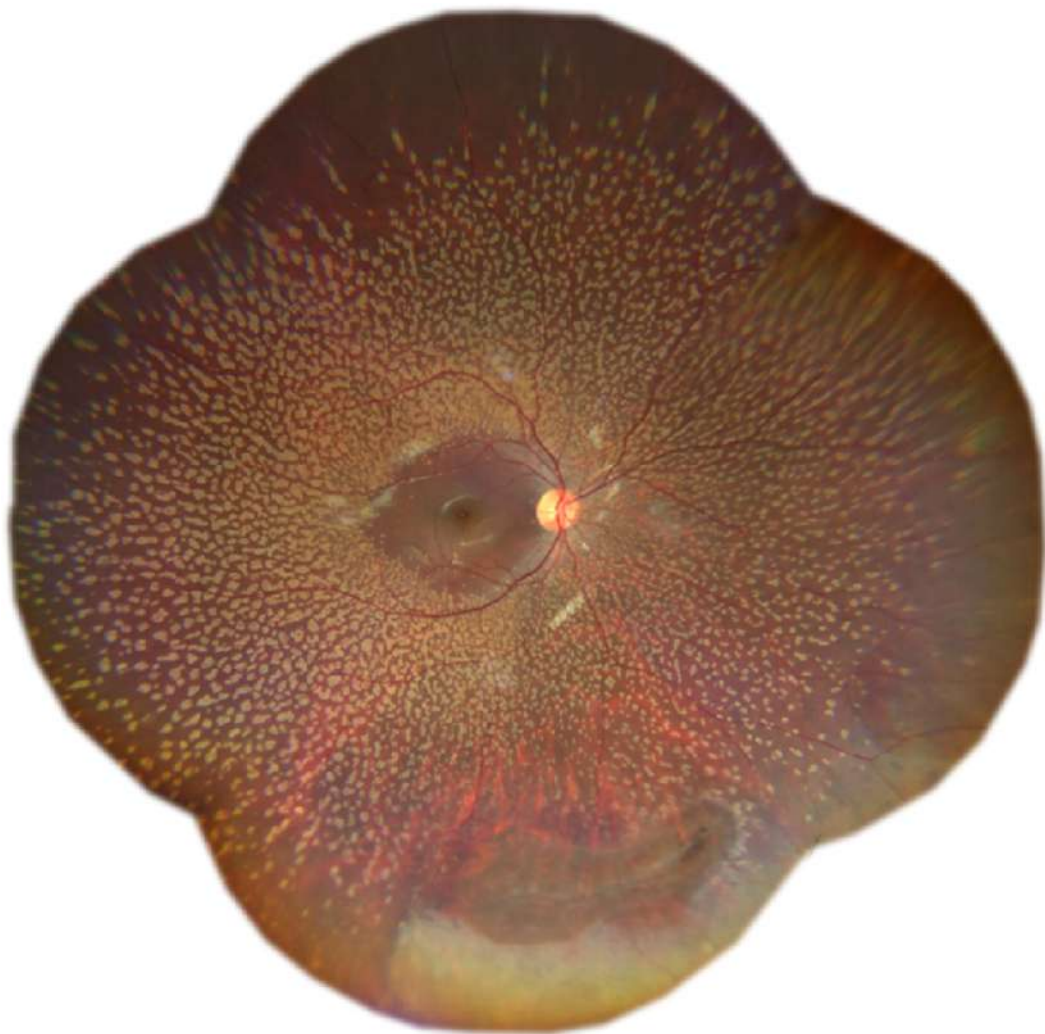


RJO

Rajasthan Journal
of Ophthalmology



Official journal of
Rajasthan Ophthalmological Society



Open Access at rosonline.in

Editor Prof. Dr. Arvind Chauhan | Associate Editor Dr. Raj Shri Hirawat | Vol 12, Issue 6, April-June. 2024

Upgrade your dry eye patients to
advanced formulation...

VYOSOFT[®] HA

Sodium Hyaluronate 0.1%+CMC+Osmoprotectants

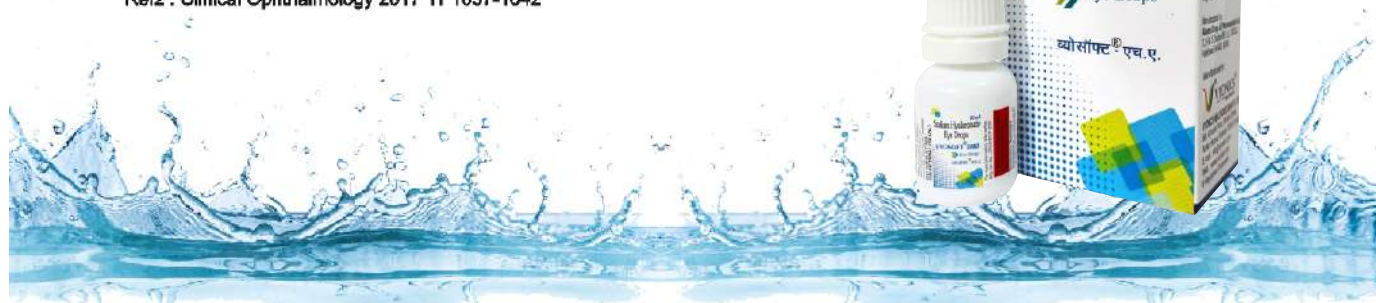
Eye Drops

For Instant
Relief &
Long-Lasting
Protection

- Enhances ocular surface integrity¹
- Restores tear osmolarity and control inflammation²
- Offers Longer Retention time

Ref1 : Eye(2017)31,1409-1416

Ref2 : Clinical Ophthalmology 2017 11 1637-1642



Powered To Penetrate

Zolvinac[®] CS

Nepafenac Ophthalmic Solution 0.1%

Comes with

Novel Control Drug Delivery System (CDDS)

Novel Dissipating Preservative -SOC (BAK FREE)

No Shaking Required

Open nozzle bottle with Uniform Dose in each drop

BAK Free

POWERED TO PENETRATE





ROS EXECUTIVE COMMITTEE



DR. SANJIV DESAI
President
Mob.: + 91 97722 14418
Email : dr_s_desai@yahoo.com



DR. VIRENDRA AGARWAL
President-Elect
Mob.: + 91 98290 17147
drvirendra@yahoo.com



DR. NEERAJ KHUNGER
Vice President
Mob: +91 9829070265
Email: khungereyecare@yahoo.co.in



DR. GULAM ALI KAMDER
Hon. General Secretary
Mob.: + 91 94141 21306
Email : drgulamali@gmail.com



DR. HARSHUL TAK
Treasurer
Mob.: + 91 94140 71910
Email : harshultak@rediffmail.com



DR. VISHAL AGRAWAL
Chairman Scientific Committee
Mob.: + 91 90244 72330
Email : drvishalrpc@yahoo.com



DR. ARVIND CHOUHAN
Executive Member Editor Journal
Mob.: + 91 94140 75663
Email : drarvind111@rediffmail.com



DR. ANKUR SINHA
Executive Member
Mob.: + 91 93146 66881



DR. RAJENDRA KUMAR CHANDEL
Executive Member
Mob.: + 91 99280 87995



DR. RAJESH GOEL
Executive Member
Mob.: + 91 94145 51929



DR. ASHOK KUMAR MEENA
Executive Member - Kota Zone
Mob.: + 91 94145 96822



DR. KARTIKEY KOTHARI
Executive Member - Udaipur Zone



DR. MAHENDRA PALIWAL
Executive Member - Jodhpur Zone



DR. RAKESH PORWAL
Executive Member - Ajmer Zone
Mob : + 91 94140 04414



DR. SONAL KALIA
Executive Member - Jaipur Zone
Mob : + 91 95717 21727



DR. MAHESH PUNJABI
Advisor
Mob : + 91 93525 35488



DR. RAJKUMAR SHARMA
Advisor
Mob : + 91 98290 54797



DR. KAMLESH KHILNANI
Immediate Past President
Mob.: + 91 94140 77341



DR. SANDEEP VIJAY
Immediate Past Hon. General Secretary
Mob : + 91 94140 65020

Know Your Editor



Dr. ARVIND CHOUHAN

Chief Editor RJO

Professor and Head of Ophthalmology Department
SN Medical College, Jodhpur



Dr RAJ SHRI HIRAWAT

Associate Editor RJO

Vitreo- Retina Consultant
Dr Kamdar Eye hospital, Jodhpur

Managing Editor

Dr. Rakesh Porwal
Dr. Suresh Pandey

Editorial Team

Dr. Anash Pathan
Dr. Rohan Agashe
Dr. Sahil Bhandari
Dr. Latika Pandey

Section

Advisory

Cornea & Ocular surface

Dr. Dharmveer

Refractive surgery

Dr. Sonu Goel
Dr. Virendra Agarwal

Cataract

Prof. Dr. Pankaj Sharma
Dr. Saurabh Bhargav

Glaucoma

Dr. Ankur Sinha
Dr. Kavita Prasad

Uvea & Retina

Prof. Dr. Kamlesh Khilani
Dr. Pawan Shorya

Ocular Trauma

Dr. Abhishek Kothari
Dr. Nikhil Aggarwal

Oculoplasty

Dr. Maya Hada

Neurophthalmology

Dr. Abhishek Kothari
Dr. Rajshri Hirawat

Pediatric ophthalmology

Dr. Deepa Kothari

Optometry & Low Vision Aids & Contact

Dr. Sanjeev Desai

Ophthalmic Image

Dr. Ankur Midha
Dr. Laxman Jhala
Dr. Sanjay Gupta
Dr. Vishal Agarwal

Practice Management & Quality Control

Dr. R.K. Verma
Dr. Sandeep Vijay

Beyond Ophthalmology

Dr. Harshul Tak



Contents

Title	Page. No.
President Desk	4-5
Secretary Desk	6
Editor Desk	7
Associate Editor Desk	8
Approach to a squint case	9 - 18
VIP Syndrome Unveiled	19 - 22
Safe Cataract Surgery in Intumescent White Cataract	23 - 26
Recent Advances In Diagnosis And Treatment of Amblyopia	27 - 32
My Journey : Life Beyond Ophthalmolog	33 - 34
Green Grahini - Ek Lota Jal Badal Dega Kal	35 - 37
Ophthalmic insights across the society	38
Every Red Eye is Not Acute Conjunctivitis	39
The Itchy Hands : Contact Dermatitis in an Ophthalmologist	40 - 42
Nevus of Ota : Clinical insights and management	43 - 44
Cover Page Image Issue-6	45
Art	46

President Desk

Dear Readers,

As the President of the Rajasthan Ophthalmic Society, it is my privilege to address you today regarding the current status and the future expansion plans for our very own Rajasthan Journal of Ophthalmology (RJO).



Dr. SANJIV DESAI

Over the past years, the journal has steadily grown in both its scope and influence, making significant strides in enhancing the quality of published articles and the reach of our work.

CURRENT STATUS :

- **Quality of Publications** : The journal continues to publish high-quality, peer-reviewed articles. Our editorial team is committed to maintaining rigorous standards of review and publication, ensuring that only the most relevant and impactful research makes it to our readers.
- **Digital Reach** : The transition to an online platform has allowed us to increase accessibility to the journal. This move has expanded our readership, enabling practitioners, students, and researchers to access our work.
- **Collaboration** : The Rajasthan Journal of Ophthalmology has strengthened its content and academic standing through successful collaborations with national and international ophthalmology societies, fostering the exchange of ideas and research.
- **Future Expansion Plans** : Enhanced Research Focus: As we move forward, our goal is to broaden the scope of the journal to include cutting-edge research in emerging areas of ophthalmology, such as artificial intelligence in eye care, advances in surgical techniques, and personalized medicine.
- **Increase in International Submissions** : The journal will focus on increasing international submissions to enhance its global perspective and become a valuable resource for ophthalmologists worldwide.

- **Indexed Recognition** : We aim to enhance its credibility by getting indexed in leading databases like PubMed, Scopus, and Web of Science. This achievement will significantly boost the journal's visibility and impact.

- **Multimedia Integration** : The journal plans to integrate multimedia elements, such as video abstracts, surgical technique videos, and expert podcasts, to create a more dynamic and engaging experience for readers, making complex topics more accessible.

I encourage each one of you to actively participate in the growth of the Rajasthan Journal of Ophthalmology. Whether it's by submitting your research, reviewing papers, or simply spreading the word about the journal, your contribution is invaluable. Together, we can make RJO a leading voice in ophthalmic research, not only within Rajasthan but on a global stage.

Meanwhile, dive deep into the current issue and enjoy the potpourri of scientific articles we have collected and conserved for your reading pleasure.

Best Regards

Dr Sanjiv Desai
President
Rajasthan Ophthalmological Society

Secretary Desk

Greetings to all our readers, contributors, and academic community members!

I am delighted to report the success of our latest issue, which received an overwhelming response from all of you. The positive feedback and the growing interest reflect the dedication and support of our entire community. Your participation, whether through contributing content, sharing your insights, or simply engaging with our work, is a testament to the collaborative spirit that drives our journal.



DR GULAM ALI KAMDAR

As we embark on this new academic session, our focus remains on fostering a space for creative and intellectual growth. This time, we aim to increase student involvement at every level whether it be through article contributions, peer reviews, or participation in editorial processes. We believe this will enrich the content of the journal, making it a more dynamic, student-centered publication.

There are many more opportunities for involvement in the upcoming issues, and we invite you to take part in shaping the next phase of our journey. Whether you have an idea for an article, a suggestion for improvement, or a desire to contribute in any other way, we welcome your input and enthusiasm.

However, as we celebrate our progress, we are mindful of the challenges that still lie ahead. We identified several areas that require further attention, including improving time management, increasing access to resources, and addressing gaps in communication. We are committed to addressing these pitfalls through enhanced planning and continuous feedback from all. Our goal is to build a platform that reflects the academic interests and aspirations of our students, making it not only informative but also engaging and inclusive.

Lastly, I invite everyone to be part of this journey whether through participation in academic forums, extracurricular activities, or collaborative ventures. Together, we can overcome the challenges and turn our vision into a resounding success.

Looking forward to your contributions !

Warm regards,

Dr Gulam Ali Kamdar
Secretary
Rajasthan Ophthalmological Society

Editor Desk



Dr. ARVIND CHOUHAN

I am delighted to share with you the success of the recent special issue of the Rajasthan Journal of Ophthalmology, themed “Our Fascination : Life Beyond Ophthalmology.”

This issue was a bold step in exploring the multifaceted lives of ophthalmologists beyond their professional roles, shedding light on their passions, hobbies, and contributions to society outside of the clinic and operating room. The overwhelming response from both contributors and readers has been truly heartening.

It has been inspiring to see how our colleagues channel their skills, creativity, and energy into pursuits that enrich their lives and communities.

I would like to extend my heartfelt gratitude to all the contributors who shared their journeys, as well as to our dedicated editorial team for curating such a compelling collection of narratives.

The Rajasthan Journal of Ophthalmology remains committed to expanding its scope, not only in the realm of clinical and research advancements but also in showcasing the broader impacts that ophthalmologists have on society.

Looking forward, I am excited to continue this journey of exploration and innovation. We encourage you to continue contributing to the journal with your unique insights, research, and stories.

Thank you once again for your support.

Warm regards

Dr Arvind Chouhan
Chief Editor
Rajasthan Ophthalmological Society

Associate Editor Desk



Dr. RAJ SHRI HIRAWAT

Dear Esteemed Readers,

As the Associate Editor of the Rajasthan Journal of Ophthalmology, I am excited to reflect on our journey toward excellence in ophthalmic research. Your support has been instrumental in shaping our success so far.

We are at a pivotal moment where your ideas and enthusiasm can significantly impact the future of the Rajasthan Journal of Ophthalmology.

Here's how you can contribute to making our journal more engaging, impactful, and student-friendly :

1. Share Your Ideas : We encourage you to bring forth your ideas for content that you believe will enrich our journal. Your suggestions can help us stay at the forefront of the field.

2. Contribute Articles : If you have conducted research or have valuable insights to share, consider submitting your work to our journal. It will not only advance the field but also provide learning opportunities for your peers and the next generation of ophthalmologists.

3. Engage with Our Content : Actively participating in discussions and providing feedback on published articles helps us understand what resonates with you and what can be improved. It is crucial for creating a dynamic and interactive journal.

4. Promote the Journal : Help us reach a wider audience by promoting the Rajasthan Journal of Ophthalmology within your professional networks and academic circles. The more we spread the word, the more vibrant and diverse our community will become.

5. Support Student Involvement : We are committed to nurturing young talents and providing them with opportunities to engage with ophthalmology research. Encourage students and early-career professionals to contribute, review, and participate in our initiatives.

Our vision is to foster a collaborative environment where ideas flourish, and impactful research thrives. By coming together and contributing to the journal, you become a part of this vision, helping us shape the future of ophthalmology and making the Rajasthan Journal of Ophthalmology a leading voice in the field.

Thank you for your continued support and commitment.

Dr Raj Shri Hirawat
Associate Editor
Rajasthan Ophthalmological Society

"Approach to a squint case"

Dr Isha Chaturvedi⁽¹⁾, Dr Pradeep Sharma⁽²⁾

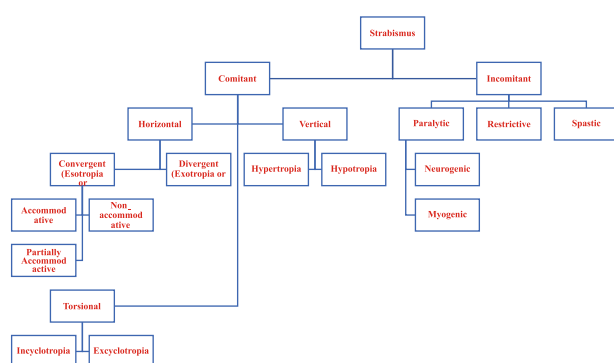
1: Dept. of Ophthalmology, TSM Medical College and Hospital, Lucknow

2: Centre for Sight, Safdarjung Enclave, New Delhi

Introduction :

Binocular single vision is an asset for humankind. Normally, our two eyes have two visual axes and form two separate two-dimensional images of a given object at each fovea. With the help of sensorimotor coordination, these separate images are processed to form a single three-dimensional image. This is brought about by the constant and controlled activity of the twelve extraocular muscles. Hence our visual axes are said to be aligned and the fovea of the two eyes correspond; this is known as foveo-foveal or normal retinal correspondence. When the two visual axes are not aligned, that is, one eye fixates at the point of interest but the other eye does not, a squint (or *heterotropia*) results. When this tendency is overcome by the inherent fusional mechanisms, the squint does not manifest and is known as heterophoria. When the squint is present at times and controlled at other times, it is called intermittent as against a constant squint.

Classification of Squint :



Motor And Sensory Adaptations To Squint :

Whenever there is a misalignment, the two fovea receive two different images of an object, each producing its own cortical perception, leading to *confusion*. However, the cortex has a strong foveal preference, such that only one image is

perceived and the other is suppressed. But if the object is imaged on some other retinal area of the other eye, which has a different projection in space, the object gets projected at two different positions in space, and double vision or *diplopia* results.

The motor and sensory systems adapt to avoid the troublesome consequences of squint. Let us see how: The first motor mechanism is *fusion*, which converts a tropia into phoria, whenever possible, as in *intermittent exotropia*. When this mechanism is overwhelmed, and if there is incomitance, that is the deviation is found to be less in a particular gaze, a head posture is assumed to maintain that gaze. Sometimes the head posturing may be such that the other image falls in the retinal periphery, which can be easily ignored. At other times, the other image may fall on the blind spot of the retina (small esotropias), again alleviating the diplopia. These are the motor adaptations of strabismus, mostly seen in adult-onset strabismus.

The sensory adaptations are mainly of two types: *suppression* and *anomalous retinal correspondence (ARC)*. In suppression, the cortex disregards the other image from cognition. Therefore, under binocular viewing, the other eye does not actively participate in perception but does so under monocular conditions. Suppression is generally possible easily when the other image is weak, that is imaged in the retinal periphery. But when the deviation is small angle, the other image is equally dominant and cannot be easily suppressed, so the sensory system tries to have a readjustment. Here, the fovea of one eye develops a correspondence with that extra-foveal area where the other image falls (due to the strabismus). This is called *harmonious ARC*. The sensory adaptations are possible only when the nervous system is still "pliable", that is early childhood, up to 6-7 years of age. The suppression in childhood can be *facultative* or *obligatory*, the former exists only under binocular viewing, and disappears under

monocular conditions. The obligatory suppression carries on under monocular conditions also, such that a functional diminution of vision in the suppressed eye results. This is known as *amblyopia*. Thus, amblyopia occurs in the young.

History-taking :

We, as clinicians should put the right questions and correctly interpret the patient's story to make it into a logical history. Listed below are some common presenting complaints:

1. Eye strain
2. Associated redness, heaviness dryness, soreness
3. Pain in and around eyes
4. Headache: occipital/frontal
(worsened with near work)
5. Diplopia (binocular)
6. Deviation of eyes
7. Past pointing
8. Vertigo
9. Head posture

The age of onset and the duration of squint decide the prognosis for attainment and maintenance of binocular vision. An early onset, long duration, constant angle squint has a poor prognosis. Ask about the precipitating event: injury, illness, shock or intimidation. A patching of an eye for a lid or anterior segment problem that breaks fusion can also precipitate a squint. Antenatal factors like: drugs taken or illness during pregnancy, and perinatal factors like: type and the length or any peculiarities of the labor, the birth weight, and the term duration should be enquired.

Regarding the deviation, it should be noted whether it is intermittent or constant, unilateral (left or right) or alternating. An intermittent deviation, even of a longer duration, has a better prognosis because binocular stimulation was available at some point of time. A constant deviation indicates poorer vision for the deviating eye, and a poorer prognosis for binocularity. Note if the deviation is due to fatigue or near work (fusional or accommodative weakness). At times the deviation may be periodic or cyclical. Ask for old photographs in cases of head posture or more specifically, no deviation with head posture which indicates good binocular potential in spite of a congenital squint.

The history of treatment should be taken in great detail. This includes history of glasses' prescription, regularity of use, power of glasses being used, whether refracted under age-appropriate cycloplegia, prisms prescribed if any. Note any history of undergoing convergence exercises, use of occlusion: its type, duration, compliance and age; any history of surgery: whether done on one or both eyes and/or muscles operated upon. These should be corroborated with accompanying documents if possible.

Assessment Of Visual Acuity :

1. Refraction : All cases of squint under 6 years of age should be refracted under atropine cycloplegia, and preferably also all cases with esodeviation under 12 years of age. Atropine sulphate 1% ointment should be applied in rice-grain size, three times a day, for three days, prior to the day of refraction. Refractions in children are notorious to change from time to time. Majority of neonates are hyperopic at birth, which increases till about 7 years, when it starts decreasing till teenage, this is known as emmetropisation (though all cases may not become emmetropic). Repeated refraction is therefore advisable every 6 months in first two years and then annually till about 67 years or whenever necessary.

2. Assessment of poor vision: There are certain tests required in non-verbal children with very poor vision. These include fixation preference, 10 Dioptre prism test, Bruckner test and special visual acuity tests. A preference of fixation with one eye indicates poor vision or amblyopia in the other eye. An alternating fixation indicates equal vision in both eyes and no amblyopia. A central, steady, maintained (CSM) fixation is indicative of good vision. One can even roughly quantify the vision using this method. Central steady fixation usually means good potential for vision, in new-borns at least 6/60, later this should indicate 6/96/6 vision. In the 10 D prism test, we induce a squint using a base-in or base-out prism and then check for fixation preference. The Bruckner test is a photo-screening test in which the examiner shines the light of the ophthalmoscope from a distance of 1 meter and observes the red reflex in the two eyes. In cases of uncorrected refractive error or esotropia, a difference between the red reflex in the two eyes

is noted.

3. Assessment of visual acuity : Tests for visual acuity can be broadly classified as follows:

Detection acuity tests	Catford drum test Boeck candy beads STYCAR graded balls test Dot visual acuity
Resolution acuity tests	OKN drum Preferential looking tests Pattern VEP
Recognition acuity tests 1. Picture identification on behavioural pattern	Cardiff acuity tests OKNOVIS
2. Picture identification 3. Direction identification 4. Letter identification	Allen's cards test Sheridan's miniature toys test Landolt's C-test Snellen's E-test Sjogren's hand test Arrows Snellen's test Sheridan's letter test Lippman's HOTV test LogMAR visual acuity test

Vision tests in different age groups :

Apart from the familiar Snellen's distance and near vision charts there are certain tests for visual acuity that deserve a special mention. These are tests used in infants or smaller children.

1. Vision tests in age up to 6 months

- **Catford Drum Test** This is a detection acuity test for infants and preschool children. It is based on the observation of a pendular eye movement observed when a child follows an oscillating drum with dots. The displayed dots are in various size: 15 mm to 0.5 mm and the test distance is 60 cm. The dots represent 20/600 to 20/20 vision. The smallest dot that evokes the pendular eye movement determines the visual acuity.

- **Preferential Looking Tests (PLT)** These are based on the behavioural pattern of an infant to prefer to fixate a pattern stimulus rather than a blank, as long as the pattern is visible or resolvable. Tests based on this principle include: Teller and Cardiff acuity cards. The Teller acuity cards (TAC) are a modification of PLT and has seventeen cards containing patches of vertical black and white stripes (square-wave gratings) ranging in spatial frequency (cm/s), a low-vision

card and a blank grey card. Detection of pattern alone determines the fixation preference. The testing distance is constant as it determines the visual acuity by converting the frequency of the smallest pattern resolvable into Snellen's equivalent. It is a measure of resolution acuity. The Cardiff acuity cards have a picture optotype and a blank located vertically. The picture optotypes are of the same size but have been specially drawn with two dark lines with a white space (of varying width) in between, such that the picture is visible only at a particular distance or closer. These are known as 'vanishing optotypes', as they vanish at a farther distance. The child identifies the picture by verbalising, pointing or fixation preference. The visual acuity is described in Snellen notations. It is a recognition visual acuity. (For details refer to the book Strabismus Simplified (2nd ed.) by Sharma P, 2019. CBS Publishers & Distributors.)

In the absence of definite vision tests, one can even do an indirect assessment of the visual acuity. These include the blink reflex, menace reflex, fixation reflex and pupillary light reflex. The pupillary and blink reflexes are present at birth, the fixation reflex becomes well developed by about 2 months with babies showing a fixation preference for moving stimuli, blinking lights patterned stimulus, stimuli with high contrast, stimuli with colours especially red-green or human face. Menace reflex is well developed by 5 months of age. A knowledge of visual milestones is hence mandatory.

2. Vision tests in age older than 6 months

As the child grows older and her attention is easily distracted, some more appealing tests become applicable. These include: Boeck Candy Test, Worth's Ivory ball test and Sheridan's balls test. In Boeck candy test small edible candies are used and the child's hand is guided to the candy then to her mouth. As the child repeats the exercise, each eye is alternately covered and the difference is noted. In Worth's test, ivory balls of increasing size are rolled in front of the child and acuity is estimated based on the smallest sized ball retrieved by the child. Sheridan's test uses Styrofoam balls in a similar way and assesses quality of fixation for each ball.

3. Vision tests in 2-3 years

These include the miniature toys test, coin test and dot visual acuity. In miniature toys, the child is asked to name or pick a pair of toys from a given assortment at a testing distance of 10 feet. In coin test, he is asked to distinguish between the two faces of different sized coins at different distances. In dot visual acuity, there is a darkened room and the child is shown an illuminated box with printed black dots of successively smaller size, one at a time. The smallest dot identified correctly twice is the acuity threshold.

4. Vision tests in 3-5 years

Children of this age group can be trained to identify symbols and letters. Now, tests such as the tumbling E test, Landolt C test, Sheridan's letter test and HOTV test become useful. These tests detect the recognition acuity.

Older children and adults can read the Snellen's chart (or the illiterate E chart), logMAR visual acuity chart and Allen's picture optotypes.

Stereoacuity : The human eye is capable of seeing beyond the resolution acuity of foveal cones; this is a function of higher cortical centres. Stereoacuity is an example of hyperacuity and is the ability to perceive a separation in the third dimension or 3D. It can be measured by Synoptophore, TNO test, Randot stereo test, litmus stereo test, Lang's stereo test and special 3-D pictures. These are mostly based on the haploscopic principle where two 2-D or vectograph pictures having some disparities are fused to create a 3-D image.

Normal adult stereopsis is about 40 arc second. For children, 3-5 years old about 70 arc seconds, and for 5-7 years about 50 arc seconds. Children above 8 years have the adult level of stereoacuity. A simple bedside test for gross stereoacuity (about 400 arcs) is the horizontal 2-pencil test. Here, a pencil is held in the examiner's hand horizontally and the child is asked to touch its tip with the tip of another pencil coming rapidly from the other side. End on view of the pencil should not be allowed and the test should be done both unilaterally and binocularly.

EXAMINATION OF A SQUINT CASE

Now that we are familiar with the sensory and motor adaptations to squint, we can consider the examination in two parts viz. examination of motor and sensory status.

Examination of the motor status

1. Head posture : Head posture is assumed such that the ocular deviation is the least, and that can be fused. Rarely a head posture which provides for the maximal deviation is chosen so that the peripheral image can be easily suppressed or ignored. There are 3 components to head posture, namely: chin elevation or depression (vertical), face turn to right or left side (horizontal), head tilt to right or left shoulder (torsional). Common causes of head posture include incomitant squints, A-V patterns, nystagmus, under-corrected glasses or wrong cylinder axis, one-eyed persons and those with homonymous hemianopia.

2. Ocular deviation :

It is necessary to observe the adnexal structures of the eye to rule out a pseudo squint. Similarly, there may be a misalignment between the visual and optical axes of the eye (large angle kappa) which may give false appearance of squint or pseudo squint. For example, telecanthus and epicanthal folds give a false impression of esotropia whereas, hypertelorism gives a false appearance of exotropia. Similarly, ptosis or lid retraction can falsely look like a vertical squint. Hence, a cover-uncover test should be performed in all cases.

COVER-TEST

The patient is made to fixate at letter of size 6/9 on Snellen chart (for distance) or a nearby target (preferably colourful toys or attractive figures) at 33 cm (for near). An occluder (preferably Spielmann or a thumb in case of a small child) is used to cover the apparently fixing eye and the other eye (apparently deviating eye) is observed - if it moves to take up fixation, it confirms the presence of a manifest or true squint (heterotropia). A Spielmann occluder, being translucent, shows the eye behind the cover, deviating. (For details refer to the book Strabismus Simplified (2nd ed.) by Sharma P, 2019. CBS Publishers & Distributors.)

Uncover-test

The second part: The “uncover”, helps in revealing a latent squint or heterophoria. One eye is covered, which breaks the fusion, and if there is any heterophoria (tendency for squint) the eye behind cover deviates (in/out/up/down). The examiner then observes the behaviour of this eye as he/she removes the cover. If it remains deviated it confirms a latent squint with poor fusion (poor recovery) and if it recovers the examiner observes the speed of recovery which indicates the strength of fusion. Sometimes on uncovering the eye, the uncovered eye resumes fixation while the other eye deviates this means that the uncovered eye (which resumes fixation) is the dominant eye. Conversely both eyes can alternately take up fixation in which case the vision in both eyes would be equal.

Measurement Of Deviation

The prism-cover test (PCT) used to measure deviation is basically the cover-uncover test with added neutralisation (no movement of redressal) of the deviation using prisms. A simple rule of thumb is to place the apex of the prism towards the deviation. The prisms are therefore placed base-out (BO) or base in (BI) for horizontal deviations and base-up or base-down for vertical deviations. If the deviation is a combination of the two, a prism is placed vertically before one eye and horizontally before the other eye. One may use a prism-bar or loose prisms as well (Figure-1). It is important to nullify the accommodative or fusional convergence of the patient if needed, by performing the PCT after patching the eye for 4 hours (to break fusion) or making the patient wear proper refractive correction (to relax accommodation). This determines the static angle of the squint which needs to be corrected surgically.



Figure 1: The prism-bar cover test being performed

Sometimes the eyes may not have a central fixation, in which case the cover-uncover test may fail to reveal a squint. In such cases the reverse Krimsky test can be used wherein, the good eye is covered by a prism such that the deviated eye is forced to take up fixation until the neutralizations point is reached.

Some important aspects of measurement of deviation include the following :

A. Measure deviation with distance and near fixation to determine its nature: Esotropia: Basic/convergence excess/divergence insufficiency. Exotropia : Basic / convergence insufficiency / divergence excess. Near-distance disparity is significant only when more than 15 PD

B. Measure with and without glasses to determine the accommodative element.

C. Measure in 9 different cardinal positions of gaze to determine any incomitance

D. Measure in up gaze of 25° and down gaze of 35° for determining AV patterns.

E. Measure with right and left eye fixating alternately to determine primary and secondary deviation in case of paralytic squint.

F. Measure after prolonged cover to differentiate a true divergence excess type from a simulated divergence excess exotropia Avoiding errors while measurements

- *Whenever the deviations are too large, it is better to measure them by splitting the prisms between the two eyes rather than stacking them over one another in front of one eye as this falsely overestimates the deviation*

- *While measuring the deviations in patients with high refractive errors (more than 5D), one should remember that high-powered spectacles induce a prismatic effect such that the measured tropia is different from the actual deviation. It is recommended to use nomograms available for correction of the same*

- *Always make sure the patient wears a complete refractive correction when measuring the deviations especially in cases of accommodative esotropia (fully correctable by glasses) or partially accommodative esotropia (partly correctable by glasses).*

Hirschberg test

Grossly one can estimate the angle of squint by utilising the corneal reflection (first catoptric image of Purkinje) in the Hirschberg test. In the absence of squint, the corneal reflections in the two eyes should be symmetrical even if not exactly central. Roughly a 1 mm shift signifies a 5° deviation such that if the reflex falls on the nasal limbus, the exodeviation is 30° (approximately 60 prism dioptres). This test can be used in infants, eccentric fixation or blind eyes.

Krimsky Test

One can also quantify the deviation using the corneal reflection by keeping a prism bar on the fixating eye and observing the corneal reflex in the deviating eye. This is the Krimsky test or prism reflex test. The reverse Krimsky test has been discussed above.

Diplopia Testing :

Red and green glasses over the right and left eye respectively are used to dissociate the two eyes such that patient sees double if there is a squint. In esodeviations the image falls on the nasal half of the retina and is projected on the temporal half of the field leading to uncrossed diplopia (same side as the eye). Likewise, in exodeviations the image falls on the temporal retina to produce crossed diplopia. Ideally a slit target (such as the light from streak retinoscope) should be used vertically for charting horizontal deviations and horizontally for vertical deviations. Testing can be done for both distance and near. It is also easier to appreciate tilt using a slit target. The tilt is opposite to the direction of the torsion. By using two Maddox rods, preferably one white and the other red, the tilt is neutralised by rotating the Maddox rods in the requisite direction. The change of axis on the trial frame can be read to give the actual cyclodeviation. This is the Double Maddox Rod Test. The Hess/Lees chart is also useful for subjective testing. For objective evaluation of the cyclodeviations the indirect ophthalmoscopy and fundus photography are useful methods. (For details refer to the book *Strabismus Simplified* (2nd ed.) by Sharma P, 2019. CBS Publishers & Distributors.)

Limitation of movements:

A knowledge of the anatomy of extraocular muscles is mandatory to assess under-actions or over-actions. Both the ductions and the versions should be noted and documented. Usually, a subjective assessment is made on scale of 7 points (+3 to -3) or 9 points (+4 to -4). For documentation, the under action is indicated by 1-, 2-, 3- and overaction as 1+, 2+, 3+, for each extraocular muscle. Normal action is left unmarked. Normally, adduction is normal when the nasal one-third cornea crosses the lower punctum. Less than this is considered to be limited. For normal abduction the temporal limbus should touch the lateral canthus. For grading of the oblique overactions, the angular deviation of the eye in adduction as a lateral version is performed is noted.

Measurement Of Ac/a Ratio

Variable measurements may be obtained when measuring the deviation for near and far. This is where we measure the AC/A ratio which is defined as the convergence amplitude for a unit accommodation. It is to be calculated in cases of accommodative esotropia to understand the different types and manage accordingly, and exodeviations with simulated divergence excess to be differentiated from true divergence excess. There are two popular methods :

Heterophoria method

Here, the interpupillary distance is measured in cm (IPD). The patient is made to wear his required refractive correction. The deviation is measured by PBCT with the patient first fixating at 6 m target (D) and then at 33 cm target (N) (about +3D accommodational effort).

Then $AC/A = IPD + (N-D)/3$

where IPD is in cm, N is the near deviation and D the distance deviation in prism dioptres (base-out for near and base-in for distance) with the esodeviations having a plus sign and exodeviations having negative sign.

Normal range of AC/A is 5-7 PD

Gradient method

Here, a fixed distance is used and the IPD is not required. Here, the deviation is measured while using -2D concave lenses for 6 m distance and +3D convex lenses for 33 cm distance.

Then $AC/A = (N-D)/3$

Normal range by this method is 3-5 PD

A-V PATTERNS

Sometimes horizontal tropias are incomitant in vertical gaze resembling the alphabets 'A' or 'V'. This is checked by observing the deviation in primary gaze, 25 degrees upgaze and 35 degree downgaze.

For 'V' pattern: Difference between up and down gaze >15 PD is significant

For 'A' pattern: Difference between up and down gaze >10 PD is significant

**A-V patterns can coexist with oblique muscle overactions hence extraocular muscle movements must be checked with special attention to the inferior corneal limbus rather than the corneal reflection alone. It is important to differentiate A-V patterns alone from those with oblique overactions as the surgical planning would depend on it.

Examination of the sensory status

It comprises of assessment of the binocular status, type of correspondence, suppression, amblyopia and stereopsis. Use of red-green goggles helps in dissociating the visual stimuli of the two eyes and helps in appreciating diplopia. Other modes of dissociation include Bagolini's glasses or single or double Maddox rod test. If there is no diplopia, the dissociation tests help in identifying whether binocular perception is present or not.

Bagolini Striated Glasses

It is the most physiological test for dissociation of the eyes. A pair of striated glasses are used in front of each eye. A source of light is seen as a line at right angles to the striations. The axis of striations of the two eyes is kept at right angles to each other. The different responses can be: (a) Cross response (Normal retinal correspondence (NRC) with no squint or harmonious anomalous retinal correspondence (ARC)), (b) Right suppression, (c) Left suppression, (d) Right central scotoma.

Worth Four Dot Test (wfdt)

WFDT is a simple test utilising red-green colour dissociation. It is more dissociating than the Bagolini's glasses and so less physiological. The four dots (red top, white bottom, and two green horizontal) are viewed through red-green

goggles (red before right eye). The test is normally done at 6 metre distance and the dots subtend an angle of 1.2° . In case of a central scotoma larger than this size, the chart will not be visualised and can be brought closer to the patient to increase the angle subtended. The different responses can be: (a) Normal bifoveal or harmonious ARC, (b) NRC with squint, (c) Left suppression, (d) Right suppression.

Management Of Squint

The management of squint may be surgical or non-surgical. Often a non-surgical modality may have been used (or is required) before or after surgery. The non-surgical management of squint comprises of the following :

- Optical correction Proper refraction and proper prescription including bifocals, use of prisms
- Amblyopia therapy including pleoptics
- Improving fusional vergence and stereopsis Synoptophore/Pencil push-ups/prism bars

Optical Correction

One of the pre-requisites of binocular fusion is a sharp focussed retinal image which is provided by optical correction. A proper prescription should be given after a complete cycloplegia in order to relax accommodation, which is very strong in children. Cases of refractive accommodative esotropia with high AC/A ratio respond well to bifocals. An executive type of bifocal with lower half segment comprising near add and bisecting the pupil is desirable. Over minus glasses may be prescribed in cases if children with intermittent exotropia to stimulate accommodative convergence. Prisms may be used for small angle deviations such as 78 PD over each eye for glass prisms. With Fresnel prisms up to 2530 PD may be accepted. Higher powers induce unwanted optical aberrations, deteriorate the quality of vision and are quite heavy on the spectacles.

Amblyopia Therapy

Amblyopia is a condition with unilateral or bilateral decrease of visual functions, caused by form vision deprivation and/or abnormal binocular interaction, that cannot be explained by a disorder of ocular media or visual pathways itself. While the hallmark of amblyopia is decreased visual acuity, some characteristics of amblyopia syndrome include decreased grating

acuity, decreased Vernier acuity, decreased or lost stereo-acuity, decreased contrast sensitivity, decreased brightness perception, prolonged perception and reaction times and defects in pursuit, saccades and fixation.

Characteristically, recognition acuity (Snellen's or similar charts) is worse affected than resolution acuity (e.g. Teller's, VER) and detection acuity (e.g. Catford drum).

Occlusion It remains the conventional therapy for amblyopia since first described in the 16th century. Here, the amblyopic eye is given a preferential chance of development, as the dominant eye is totally withheld from binocular participation. A properly done occlusion has an almost 100% success rate, especially if treated during the age of neuroplasticity. Total occlusion such as a skin patch or 'Opticlude' or homemade occlusion patch (with spectacle) is opaque and completely obscures both light and form vision and is usually advocated for moderate to severe amblyopia (Figure 2).



Figure 2: Different methods of complete (both light sense and form sense) occlusion

Partial occlusion degrades the vision of the normal eye and forces the amblyopic eye to be used. This has the advantage of binocular stimulation. A transparent scotch tape or nail varnish applied to the back surface of the glass of the normal eye can work effectively. Conventionally, a 24-hour occlusion of the dominant eye for a given number of days alternating with one day of occluding the amblyopic eye (when the dominant eye is occluded) is practised. The number of days of occlusion depends on the age of the child as follows: 2 days up to 2 years old, 3 days for 3 years old, 4 days for 4 years old, 5 days for 5 years old, 6 days for 6 years old and above. At no time are both eyes opened together. However, as a practical compromise, part time occlusion of 6 hours for the dominant eye daily is also done,

though this takes more time to get the full recovery.

One must follow up monthly and note visual acuity in both eyes (to rule out occlusion amblyopia in the normal eye). Usually, visual acuity is found to improve within 3 months' time. Occlusion should be continued until the vision keeps improving or there is no improvement over two consecutive monthly visits (provided compliance is good). For maintenance of good vision once a week occlusion is recommended till 9 years of age.

Other newer modalities for treatment of amblyopia include active vision therapy. Simple tasks such as watching TV at a safe distance, near tasks such as drawing, colouring, tracing etc. should be encouraged with the amblyopic eye (with occlusion of dominant eye)

Fusional Exercises

A convergence sustenance of less than 30 seconds for a 10 cm fixation target is usually symptomatic. Such cases can be improved by convergence exercises on the synoptophore with prism bars or simple "pencil-push ups" after making the patient aware of physiological diplopia. This is useful in cases of convergence insufficiency (as described above), asthenopia in people who do a lot of near work or screen time and early presbyopes.

Surgical Management

General principles:

1. There are two types of procedures: weakening procedures or strengthening procedures. The surgeon may choose to do a combination of the two, where one muscle is weakened and its antagonist strengthened, or a similar weakening procedure on the two eyes. Horizontal muscle resection/recession is decided based on the horizontal deviation in primary position and according to surgical norms.
2. Differences in near distance deviation for e.g. in esotropia with convergence excess, the choice would be bi-medial recti recessions; and for divergence insufficiency, the choice would be resection of both lateral recti. In case of basic esotropia a bi medial recti recession or

monocular recession-resection may be done. Similarly, in exotropia of convergence insufficiency, a medial rectus resection on both eyes; in divergence excess a lateral rectus recession on both eyes and in basic exotropia a monocular recession-resection can be done.

3. Large deviations may require three (rarely, four) muscle surgery. The amount of surgery be preferably split between the two recti being operated, rather than doing a single large muscle surgery which can cause incomitance on extreme lateral gaze or even alter the lid position causing ptosis due to globe retraction.

4. For A-V patterns without oblique muscle overactions, vertical shifting of horizontal recti or slanting recession and resections can be done. Surgery on oblique muscles (strengthening or weakening) may also be needed in cyclo-vertical deviations.

5. There are various nomograms available for the amount of recession or resection required but these may be modified as per surgeon's discretion. The maximal limits of recession in adults are 6 mm for medial rectus and 8 mm for lateral rectus. In small children they are 5.5 mm and 7 mm respectively. The minimal limits of recession are 3 mm for medial rectus and 4 mm for lateral rectus. For resections, the maximum limit for medial rectus is 6 mm and for lateral rectus it is 9 mm. The minimum limit of resection for medial rectus is 3 mm and for lateral rectus it is 4.5 mm.

Weakening procedures

1. Recession:
 - i. Conventional
 - ii. Hang back or hemi hang back
 - iii. Adjustable
 - iv. Vertical transposition of horizontal recti
 - v. Slanting recession
2. Retro-equatorial myopexy (Faden)
3. Marginal myotomy

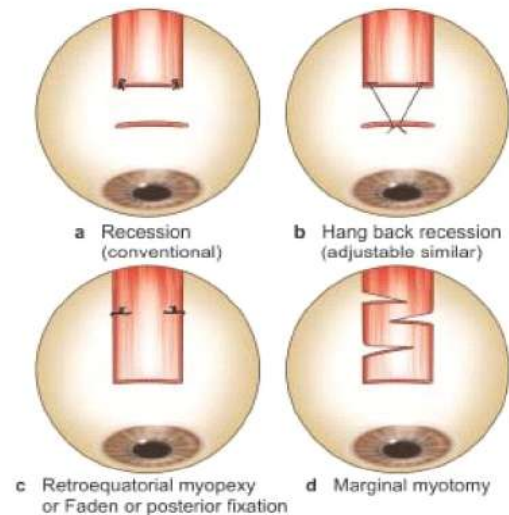


Figure 3 : Commonly used weakening procedures

Strengthening procedures

1. Resection
2. Advancement
3. Plication/Double-breasting/Cinching
4. Tucking (Superior Oblique)
5. Trans-positioning of adjacent muscles

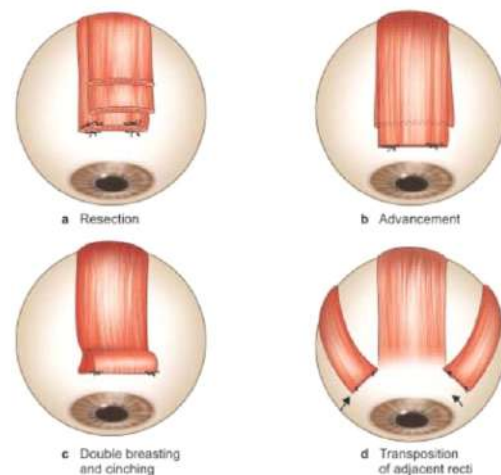


Figure 4 : Commonly used strengthening procedures

The different conjunctival approaches are:

1. Limbal incision of von Noorden
2. Over the muscle incision of Swan.
3. Paralimbal incision of Prem Prakash
4. Fornix incision of Parks.
5. Minimally invasive strabismus surgery

For details on instruments used in strabismus surgery please refer to the book Strabismus Simplified (2nd ed.) by Sharma P, 2019. CBS Publishers & Distributors.

The choice of sutures is as follows :

1. For the muscles, 60 vicryl polyglactin with 5-29 or 5-28 double armed spatulated needles are used.
2. For conjunctival closure, 80 vicryl may be used.

Anaesthesia for strabismus surgery

1. Topical anaesthesia: This is carried out with 1% proparacaine or 4% lignocaine drops used topically. It can be used in some highly cooperative patients, for short procedures such as adjustments.

2. Retrobulbar anaesthesia: This is the most commonly used anaesthesia in all adults and cooperative adolescents. A dose of 34 ml of 2% lignocaine is injected in the retrobulbar, intraconal space. For prolonged procedures it is mixed with 0.5% bupivacaine in 1: 1 ratio. Some surgeons have also used peribulbar anaesthesia just as for anterior segment surgery but this causes more chemosis and can be very difficult to work with.

3. General anaesthesia : General anaesthesia (mostly halothane or nitrous oxide) is used in children as also for uncooperative adults. Cases with complications or requiring extensive surgery like slipped muscle or post-traumatic restrictive squints, or post-detachment surgery squints, are also better operated under general anaesthesia.

Complications of strabismus surgery:

Intraoperative complications include:

1. Operation on the wrong eye
2. Operation on the wrong muscle
3. Wrong operation performed
4. Haemorrhage
5. Scleral perforation
6. Splitting of muscle
7. Loose sutures
8. Lost muscle or slipped muscle
9. Tenon's rupture and fat prolapse
10. Anaesthesia related complications cardiac arrest, bradycardia, malignant hyperthermia, allergy

Postoperative complications include :

1. Vomiting
2. Infection
3. Suture granuloma and reaction
4. Tenon's prolapse and conjunctival cyst
5. Dellen formation
6. Anterior segment ischemia
7. Overcorrection and under-correction



Dr Isha Chaturvedi, MS

Assistant Professor
Dept. of Ophthalmology
TSM Medical College
and Hospital, Lucknow-226023
Email : ishachats.90@gmail

"VIP Syndrome Unveiled"

How Celebrity Status Impacts Medical Treatment and Outcomes

Dr Suresh K Pandey ⁽¹⁾, Dr Vidushi Sharma ⁽¹⁾

1: SuVi Eye Institute & Lasik Laser Center, Kota

Introduction

VIP Syndrome, a term coined in the 1960s, refers to the phenomenon where high-profile individuals receive preferential treatment in healthcare settings, often leading to sub optimal medical outcomes. This syndrome manifests when healthcare providers, consciously or unconsciously, deviate from standard medical practices due to the status of the patient, which can compromise the quality of care.

This article delves into the complexities of VIP Syndrome, highlighting famous examples, risks associated with treating VIP patients, and strategies for balancing care and ethic.⁽¹⁻¹⁰⁾

Famous Examples of VIP Syndrome

1. Michael Jackson The King of Pop, Michael Jackson, is one of the most cited examples of VIP Syndrome. Jackson's personal physician, Dr. Conrad Murray, administered propofol, a potent anesthetic, in a home setting to treat Jackson's insomnia. This deviation from standard medical protocols ultimately led to Jackson's untimely death in 2009. The pressure to meet the demands of a high-profile patient can lead to poor clinical judgments, as seen in this tragic case.

2. John F. Kennedy President John F. Kennedy suffered from chronic back pain and Addison's disease. His status as the President of the United States influenced the secrecy and treatment approaches adopted by his medical team. Dr. Janet Travell, Kennedy's physician, prescribed an array of medications, including steroids, to manage his conditions, sometimes without fully considering the long-term implications. The complexity of Kennedy's medical needs and the desire to maintain his public image exemplify the challenges of VIP Syndrome.

3. Elizabeth Taylor Elizabeth Taylor, the iconic actress, faced numerous health issues throughout her life, including back problems, substance

abuse, and congestive heart failure. Her celebrity status often resulted in her receiving unconventional treatments and medications. Taylor's multiple hospitalizations and surgeries underscore how VIP patients may receive aggressive interventions that might not align with best medical practices.

Examples of VIP Syndrome in Ophthalmology

1. Richard Nixon Former U.S. President Richard Nixon experienced vision problems in the 1970s. His status led to consultations with top ophthalmologists, who were keenly aware of the implications of treating a former president. Reports suggest that Nixon's treatments were influenced by his VIP status, resulting in more aggressive management of his condition than might have been considered for an average patient.

2. Johnny Carson Television host Johnny Carson underwent cataract surgery in the 1990s. Due to his celebrity status, the ophthalmologist opted for an experimental (early design) intraocular lens, which was not yet widely adopted and studied (during that time). Carson's surgery highlights the potential for deviations from standard care protocols when treating high-profile individuals, sometimes leading to unnecessary risks and complications.

3. Shahrukh Khan Shahrukh Khan, the iconic Bollywood superstar, recently underwent cataract surgery with implantation of Alcon Vivity IOL in Mumbai. As a leading figure in the entertainment industry, Shahrukh Khan's health updates often capture widespread public interest. He had also undergone laser vision correction for hyperopia in 2014. He developed post cataract surgery refractive surprise and was unsatisfied with his visual outcome. According to social media post (while writing this article on July 31, 2024) Shahrukh Khan flew to USA for exploring

the possibility of IOL explantation and exchange. In high-profile cases like Shahrukh Khan's, the concept of "VIP Syndrome" becomes relevant. VIP Syndrome occurs when prominent individuals receive preferential medical treatment, which can sometimes lead to suboptimal care. The pressure to provide exceptional service to celebrities or influential figures can inadvertently result in deviations from standard medical protocols. Healthcare professionals may alter their usual practices to accommodate the VIP's status, potentially compromising the quality of care.

However, ensuring that even VIP patients receive standardized, evidence-based treatment is crucial. In the case of cataract surgery with premium IOL, detailed counseling explaining the pros and cons, adhering to most suitable IOL, established risk of possible refractive surprises, surgical techniques and post-operative care protocols is essential for optimal outcomes. It is important for both ophthalmologists and VIP patients to recognize the value of standard practices to achieve the best possible visual result.

Risks of Treating VIP Patients

1. Deviation from Standard Protocols
One of the primary risks associated with VIP Syndrome is the deviation from established medical protocols. Doctors may feel pressured to accommodate the special requests or expectations of VIP patients, leading to unorthodox treatments. This can result in compromised patient safety and adverse outcomes.

2. Over-Treatment and Aggressive Interventions
VIP patients often receive more aggressive interventions than necessary. The desire to provide the best possible care can lead to over-treatment, exposing patients to unnecessary risks and complications. In ophthalmology, this might include opting for newer, less-tested surgical techniques or devices.

3. Lack of Objectivity
Treating VIP patients can compromise a physician's objectivity. The influence of a patient's status can cloud clinical judgment, leading to decisions based more on the patient's demands or the physician's desire to please rather than on sound medical evidence.

4. Ethical Dilemmas
VIP Syndrome presents numerous ethical dilemmas. Medical professionals may face conflicts between providing equitable care and meeting the expectations of a high-profile patient. Balancing these demands while maintaining professional integrity can be challenging.

Pearls for Navigating VIP Syndrome: Balancing Care and Ethics

Preventing VIP Syndrome in ophthalmology or any area of healthcare requires a balanced approach to ensure that all patients receive high-quality, evidence-based care regardless of their status. Here are several strategies to prevent VIP Syndrome :

1. Adhere to Evidence-Based Guidelines Consistent Protocols :

Follow established clinical guidelines and protocols for diagnosis and treatment. Adhering to evidence-based practices ensures that all patients receive care based on the best available evidence, rather than on individual preferences or external pressures.

Standardized Procedures: Implement standardized procedures for all patients, including high-profile ones, to minimize deviations from best practices.

2. Promote Transparency and Accountability

Detailed Counseling and Chair Time : A detailed counseling and chair time is must for IOL selection. It is important to explain the visual outcome, need for glasses, possibility of refractive surprise, glare, halos, etc
Open Communication: Maintain open and honest communication with patients about the risks, benefits, and limitations of various treatments. This includes ensuring that VIP patients understand that their care will follow the same protocols as any other patient.

Peer Review : Encourage peer review and consultations.

Involve other medical professionals in the decision-making process, especially for complex cases, to ensure that decisions are made based on collective expertise rather than individual influence.

3. Maintain Clinical Objectivity

Focus on Patient Needs: Prioritize patient needs and medical indications over personal or public pressures. Make clinical decisions based on the patient's best interest rather than the desire to impress or meet the expectations of VIP patients.

Avoid Over-Treatment: Be cautious about using experimental or advanced technologies unless they are clearly indicated. Avoid using cutting-edge treatments simply to cater to a VIP patient's status if standard treatments are equally effective.

4. Implement Robust Quality Control Measures

Quality Assurance Programs: Establish quality assurance programs to regularly review and assess treatment outcomes. This can help identify any deviations from standard care and ensure that all patients receive high-quality treatment.

Audit and Feedback: Conduct regular audits of patient care, including that of VIP patients, to ensure adherence to clinical guidelines and to identify areas for improvement.

5. Educate and Train Healthcare Providers

Training Programs: Implement training programs that emphasize the importance of maintaining clinical objectivity and following evidence-based practices. Educate healthcare providers about the potential pitfalls of VIP Syndrome and strategies for mitigating its effects.

Ethical Considerations: Incorporate discussions of medical ethics and the impact of VIP Syndrome into ongoing professional development. Encourage a culture of ethical practice and professional integrity.

6. Foster a Culture of Equity and Fairness

Equitable Care: Promote a culture of equity where all patients receive the same standard of care, regardless of their status. Ensure that VIP Syndrome does not lead to unequal treatment of patients.

Patient Advocacy: Empower patient advocacy groups to monitor and report on instances where VIP Syndrome might influence care. Encourage a system where patients' rights and care standards are protected.

7. Ensure Comprehensive Documentation

Detailed Records: Keep thorough and accurate records of all patient interactions, decisions, and treatments. Comprehensive documentation helps ensure that care decisions are transparent and based on clinical need.

Decision Justification : Document the rationale for all treatment decisions, especially for VIP patients. This helps ensure that decisions are made based on clinical evidence and necessity rather than external pressures.

Conclusion

VIP Syndrome is a multifaceted challenge in healthcare and ophthalmology, where the status of high-profile individuals can influence medical decision-making, often to the detriment of patient care. Famous cases like those of Michael Jackson, John F. Kennedy, and Elizabeth Taylor highlight the potential pitfalls of preferential treatment. In ophthalmology, the experiences of Richard Nixon, Johnny Carson, Shahrukh Khan underscore the specific risks in this field. By adhering to standard protocols, maintaining objectivity, fostering open communication, seeking peer consultation, and emphasizing ethics training, healthcare providers can navigate the complexities of VIP Syndrome and provide equitable, high-quality care to all patients.

References

1. Gabbay, U., & Bok, S. (2001). *The Harvard conference on the Physician and the Famous Patient: The roles of celebrity and status in the doctor-patient relationship*. *The American Journal of Medicine*, 110(2), 156-160.
2. Porjes, S. E., et al. (2019). *VIP Syndrome: A Review of the Literature and Ethical Considerations*. *Journal of Medical Ethics*, 45(5), 320-324.
3. Russo, C. M., & Brose, W. G. (1998). *Chronic pain management in the elderly: Special considerations*. *Journal of Clinical Psychology in Medical Settings*, 5(1), 17-25.
4. Miller, F. G., & Brody, H. (2001). *Professional Integrity in Medicine*. *JAMA*, 285(23), 2993-2995.

5. Peabody, F. W. (1927). *The Care of the Patient*. *JAMA*, 88(12), 877-882.

6. Brennan, T. A. (2000). *The Role of Regulation in Quality Improvement*. *The Milbank Quarterly*, 78(4), 689-707.

7. Tsimsiou, Z., et al. (2007). *Patients' perceptions of their physician's humanistic characteristics and patient-physician communication. A comparison of hospitalized and primary care patients*. *Journal of General Internal Medicine*, 22(10), 1411-1416.

8. Berwick, D. M. (2002). *A User's Manual for the IOM's 'Quality Chasm' Report*. *Health Affairs*, 21(3), 80-90.

9. Bynum, W. F. (2008). *The History of Medicine: A Very Short Introduction*. Oxford University Press.

10. Epstein, R. M., & Street, R. L. (2007). *Patient-Centered Communication in Cancer Care: Promoting Healing and Reducing Suffering*. National Cancer Institute.



Dr. SURESH K PANDEY

MS (PGIMER, Chandigarh),
ASF (USA) Past President, Kota
Divi. Ophthalmology Society (KDOS)
Director : SuVi Eye Institute & Lasik Laser Center,
Email:suresh.pandey@gmail.com

Affiliation:

Visiting Surgeon-Intraocular Implant Unit Sydney Eye Hospital,
Save Sight Institute University of Sydney, GPO Box 1614, Sydney, NSW, Australia
Visiting Assistant Professor : John A Moran Eye Center
Department of Ophthalmology & Visual Sciences University of Utah,
50 North Medical Drive, Salt Lake City, Utah-84132, USA

"Safe Cataract Surgery in Intumescent White Cataract" My Approach

Dr. Sudhir Singh⁽¹⁾

1: Dept of Ophthalmology, JW Global Hospital & Research Centre, Mount-Abu.

Introduction

Intumescent cataracts, characterized by the swelling and clouding of the crystalline lens, present unique challenges for ophthalmic surgeons. This condition typically arises from fluid accumulation within the lens, resulting in elevated intralenticular pressure and a distended lens capsule. Contributing factors include trauma, systemic diseases such as diabetes, and prolonged exposure to UV light.

Surgeons encounter several difficulties when managing intumescent cataracts. The elevated pressure within the lens can complicate the creation of a continuous curvilinear capsulorhexis (CCC), a crucial step in cataract surgery. The opaque lens often eliminates the red reflex, further hindering visualization during the procedure. Additionally, there is an increased risk of anterior capsular radial tears, which can destabilize the capsular bag and lead to complications like vitreous prolapse and intraocular lens (IOL) instability.

Potential complications associated with intumescent cataracts include phacolytic glaucoma, caused by the obstruction of the trabecular meshwork by macrophages, and phacoanaphylactic glaucoma, a severe inflammatory response to lens proteins.

These complications necessitate a meticulous and well-planned surgical approach to ensure patient safety and optimal visual outcomes.

Dr Sudhir Singh's algorithms for Safe Surgery and Excellent Visual Outcome

Indications for Phacoemulsification:

1. Anterior Chamber Depth of 3.0 mm or more.
2. Not very hard and large nucleus.
3. Intact capsulorhexis.
4. Healthy zonules.
5. Clear cornea.

Indications for Manual Small Incision Cataract Surgery (MSICS):

1. Anterior Chamber Depth less than 3.0 mm.
2. Hard and large nucleus.
3. Non-intact capsulorhexis.
4. Lax zonules.
5. Corneal comorbidities.

Phacoemulsification in intumescent cataracts



Phaco in White Cataract with PXF With Foldable IOL HD (Unedited)

Video Unlocking the Secrets of Reverse Chop: Pearly White Intumescent Cataract



Unlocking the Secrets of Reverse Chop: Pearly White Intumescent Cataract Surgery (Unedited)

Phacoemulsification in intumescent cataracts poses significant risks, especially when associated with certain factors:

- 1. Anterior Chamber Depth less than 3.0 mm:**
 - A shallow anterior chamber increases the risk of intraoperative complications, such as corneal endothelial damage and difficulty in maneuvering surgical instruments.
- 2. Hard and Large Nucleus:**
 - A dense and enlarged nucleus can complicate phacoemulsification, increasing the risk of

prolonged surgery and potential damage to intraocular structures.

3. Non-intact Capsulorhexis :

- An incomplete or irregular capsulorhexis can lead to radial tears, which may destabilize the capsular bag and complicate the placement of the intraocular lens (IOL).

4. Lax Zonules :

- Weak or loose zonules can result in lens instability during surgery, increasing the risk of capsular rupture and vitreous loss.

5. Corneal Comorbidities :

- Pre-existing corneal conditions, such as endothelial dystrophy or scarring, can exacerbate surgical challenges and affect postoperative visual outcomes.

These factors necessitate a meticulous and well-planned surgical approach to minimize risks and ensure optimal patient outcomes.

The author believes that Intratunnel Phacofracture Manual Small Incision Cataract Surgery (MSICS) is safer than phacoemulsification in certain conditions :

1. Anterior Chamber Depth less than 3.0 mm:

- A shallow anterior chamber can complicate phacoemulsification, increasing the risk of endothelial damage and making instrument maneuvering difficult. Intratunnel phacofracture, with its smaller incision, reduces these risks.

2. Hard and Large Nucleus:

- A dense and large nucleus can be challenging to emulsify using phacoemulsification, potentially prolonging surgery and increasing the risk of complications. Intratunnel phacofracture allows for controlled fragmentation of the nucleus within a sub-6 mm sclerocorneal tunnel, minimizing intraocular manipulation.

3. Non-intact Capsulorhexis:

- An incomplete or irregular capsulorhexis can lead to radial tears during phacoemulsification, destabilizing the capsular bag. Intratunnel phacofracture, performed through a smaller incision, reduces the risk of such tears.

4. Lax Zonules:

- Weak or loose zonules can cause lens instability during phacoemulsification, increasing the risk of capsular rupture. Intratunnel phacofracture provides better control and stability, reducing the likelihood of zonular stress.

5. Corneal Comorbidities:

- Pre-existing corneal conditions, such as endothelial dystrophy or scarring, can be exacerbated by the ultrasonic energy used in phacoemulsification. Intratunnel phacofracture, with its manual approach, is gentler on the cornea and reduces the risk of further damage. The author's preference for intratunnel phacofracture in these scenarios highlights the importance of tailoring surgical techniques to individual patient needs to ensure the best outcomes Video Taming Intumescent Cataract : Surgical Techniques HD (Unedited)



Taming Intumescent Cataract: Surgical Techniques HD (Unedited)

Video SICS In Intumescent White Cataract HD (Unedited)



SICS In Intumescent White Cataract (unedited) HD

Capsulorhexis in Intumescent Cataract

Capsulorhexis, the creation of a continuous curvilinear tear in the anterior lens capsule, is a critical step in cataract surgery, particularly in cases of intumescent cataracts.

Preferred Technique for Capsulorhexis in Intumescent Cataract

In my practice, I prefer performing capsul

orhexis using a 26-gauge needle cystitome. This method allows for precise control and minimizes the risk of complications associated with intumescent cataracts. Here is a detailed step-by-step approach :

1. Initial Mini Capsulorhexis :

- Begin by creating a small, initial capsulorhexis (approximately 1.5-2 mm) using a 26-gauge needle cystitome. This mini capsulorhexis helps to decompress the capsular bag by allowing the liquefied cortex to escape gradually, reducing the intra lenticular pressure.

2. Decompression of the Capsular Bag :

- Carefully aspirate the liquefied cortical material through the mini capsulorhexis. This step is crucial as it equalizes the pressure within the lens, making the subsequent steps safer and more controlled.

3. Enlargement of the Mini Capsulorhexis:

- Once decompression is achieved, proceed to enlarge the mini capsulorhexis. This can be done by making a curvilinear nick with Vannas scissors or using a 23-gauge capsulorhexis forceps. The enlargement should be done gradually and carefully to maintain the integrity of the capsular flap.

4. Completion of the Capsulorhexis :

- Continue to enlarge the capsulorhexis to the desired size (typically 5-6 mm) by gently pulling the capsular flap in a circular motion. Ensure that the edges of the capsulorhexis are smooth and continuous to prevent radial tears.

Advantages of This Technique

- **Controlled Decompression:** The initial mini capsulorhexis allows for controlled decompression of the capsular bag, reducing the risk of sudden outflow of liquefied cortex and radial tears.
- **Enhanced Visualization:** Using a 26-gauge needle cystitome provides precise control and better visualization of the capsular flap, especially when combined with capsular staining.
- **Flexibility in Enlargement:** The use of Vannas scissors or 23-gauge capsulorhexis forceps allows for flexible and controlled enlargement of the capsulorhexis, ensuring a smooth and continuous edge.

By following this technique, surgeons can effectively manage the challenges of capsulorhexis in intumescent cataracts, ensuring safer surgeries and better visual outcomes for patients.

Video Overcoming Challenges in Single-Stage Capsulorhexis for Intumescent White Cataracts HD



Overcoming Challenges in Single-Stage Capsulorhexis for Intumescent White Cataracts HD

Despite careful planning and technique, complications can still arise during capsulorhexis in intumescent cataracts. These include :

- **Radial Tears:** Sudden outflow of liquefied cortex can cause radial extension of the capsular tear, leading to potential destabilization of the capsular bag.

- **Posterior Capsular Rupture:** Increased pressure and weakened capsule integrity can result in posterior capsular rupture, complicating the surgery and increasing the risk of vitreous prolapse.

- **IOL Instability :** Incomplete or irregular capsulorhexis can affect the stability of the intraocular lens (IOL), impacting the visual outcome.

When dealing with a non-intact continuous curvilinear capsulorhexis (CCC) and peripheral radial extension, choosing the right intraocular lens (IOL) is crucial. In such cases, the author prefers using a polymethyl methacrylate (PMMA) IOL. Here's why this choice is significant :

Advantages of PMMA IOLs in Complex Cases

1. Stability and Rigidity :

- PMMA IOLs are rigid, providing excellent stability in the eye, which is particularly beneficial when the capsular bag is compromised.

Surgical Considerations

- **Scleral Fixation :** In cases where the capsular support is insufficient, scleral fixation of the PMMA IOL can be performed. This involves suturing the IOL to the sclera, providing a stable and centered lens position.

• **Sulcus Fixation** : Alternatively, the IOL can be fixated to the iris, which can be particularly useful if there is some remaining capsular support.

• **Vitreous Management** : Proper management of the vitreous is essential during these procedures to prevent complications such as retinal detachment or cystoid macular edema.

Clinical Outcomes

Studies have shown that PMMA IOLs, when properly fixated, can provide excellent visual outcomes even in challenging cases with compromised capsular support.

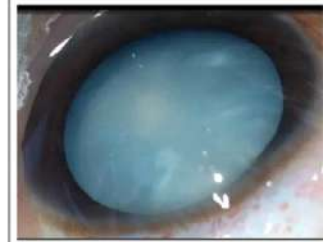
Special Considerations for Younger Patients

Capsules in younger patients may also be overstr etched, hypermobile, and prone to rupture. The excess mobility and capsular fragility increase the risk of posterior capsule rupture.

These capsules also lack a protective epinucleus; dispersive viscoelastic can be injected behind the nucleus during phacoemulsification to provide an artificial epinucleus for capsular protection. Lens hydration in younger patients both softens the nucleus and opacifies the cortex. These nuclei may require less ultrasound for removal and no hydro-dissection or hydro-delineation. Capsules in younger patients may also be overstretched, hypermobile, and prone to rupture.

By employing these advanced techniques and being aware of the potential complications, surgeons can effectively manage the challenges of capsulorhexis in intumescent cataracts, ensuring safer surgeries and better visual outcomes for patients.

Video Intumescent White Cataract in A Young Patient Management



Intumescent White Cataract in A Young Patient Management HD (

Discussion

Phacoemulsification can present significant risks when dealing with intumescent cataracts, especially under certain challenging conditions. A shallow anterior chamber reduces the available space for instrument maneuvering, increasing the likelihood of complications such as corneal endothelial damage. The presence of a hard and large nucleus complicates the emulsification and removal process, raising the risk of incomplete removal or potential damage to adjacent ocular structures. Additionally, performing phacoemulsification with a non-intact capsulorhexis can lead to radial tears, which complicate nucleus removal and increase the chance of vitreous loss. Poor zonular support poses another challenge, as weak zonules can cause instability of the lens capsule during the procedure, heightening the risk of capsular rupture and vitreous prolapse.

Conversely, manual small incision cataract surgery (MSICS) is often considered a safer option in these scenarios. MSICS allows for better control and visibility during the operation, minimizing the need for high-energy ultrasound and providing a more controlled environment for removing the dense nucleus. This makes it a preferable choice for managing intumescent cataracts with the aforementioned complexities.



Dr Sudhir Singh

M.S (Ophthalmology)

Fellow American Academy of Ophthalmology Rotary Club Host Program

International Ophthalmic Heroes of India 2020 Awardee

Ambassador : Eye Foundation of America

Formerly Editor Journal, Rajasthan Ophthalmological Society

Sr. Consl. & Head (Ophthalmology)

Global Hospital & Research Centre - Mount Abu-307501 • SquintMaster.com

• YouTube : Jaipur2020 • SquintMasterIndia • twitter.com/resp2020

"Recent Advances In Diagnosis And Treatment of Amblyopia"

Dr Pawan Kumar ⁽¹⁾, Dr. Rakesh Porwal ⁽¹⁾, Dr Archana Garg ⁽¹⁾, Dr Ram Swaroop Harsolia ⁽¹⁾
J.L.N. Medical College and Attached Group of Hospitals, Ajmer

Abstract : Amblyopia is a global public health issue with extensive, multifaceted impacts on vision and quality of life for both patients and families. Traditional mainstay treatments, optical correction, and fellow eye occlusion most successful when implemented at an early age. Visual acuity is not only reduced in one eye but fellow eye deficits may be present, eyehand coordination and reading can be affected, and self-perception may be diminished. Treatment needs to begin at a stage where the neurological pathways are still amenable to stimulation, recovery and reversal of cortical damage. All children should undergo routine visual screenings, as the potential for successful treatment of amblyopia. If not promptly recognized or treated, functional deficits from amblyopia may result and persist into adulthood, with impact on productivity and quality of life. New technologies for preschool vision screening hold promise for accessible, early, and accurate detection of amblyopia. Together with recent advances in our theoretical understanding of amblyopia and technological advances, we anticipate improved visual outcomes for children affected by this very common eye condition.

Keywords : Amblyopia; Binocular vision; Children; Treatment; Vision screening

Introduction

Amblyopia is defined as the “unilateral or bilateral decrease of best-corrected visual acuity (BCVA) caused by form deprivation, abnormal binocular interaction or both, for which no organic cause can be detected by physical examination of the eye and which in appropriate cases is reversible by therapeutic means at the appropriate time.”(1)

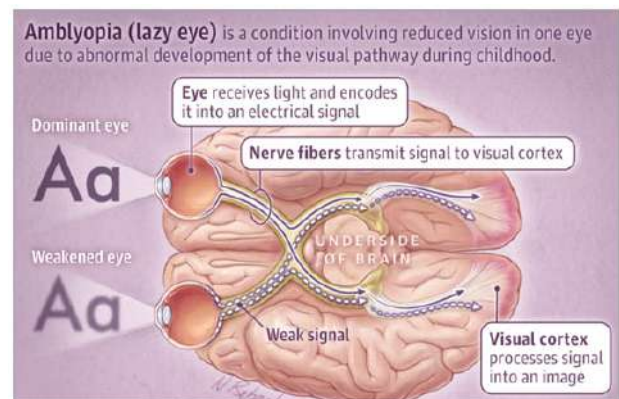
The prevalence of amblyopia is reported to be 16% in children and 1.435.64% in adults. (2)

Due to the failure to recognize the disease and delay in treatment, amblyopia is a very common cause of low vision even in adults (2).

With an incidence of 3% to 6%, amblyopia is the most common cause of low visual acuity in children and adults in developed countries and has great economic and social impact. (3-5)

Pathophysiology

It is the abnormal visual stimulation during the critical period of visual development (the first 8-10 years of life). Structural and functional damage occurs in the lateral geniculate nucleus and the striate cortex of the visual centre in the occipital lobe in the form of atrophy of connections, loss of cross-linking between connections, and loss of laterality of connections (Figure 1)



Types of amblyopia

Based on its underlying causes, amblyopia is classified as refractive, strabismus, visual deprivation, and occlusion (reverse).[6]

1. Refractive Amblyopia

It is caused by untreated refractive errors unilaterally or in both eyes.[7] This results from blurred visual input caused by hyperopia, astigmatism, or myopia, with a difference of refractive error exceeding 1 dioptre (D) between the eyes.[8]

2. Strabismic Amblyopia

This condition can develop when both eyes fail to align correctly. In paediatric cases, the brain employs a mechanism to prevent diplopia by suppressing the visual input from one eye, leading to impaired visual development in that

eye. [9]. In people with strabismic amblyopia both retinas receive stimulation in non-corresponding areas, hindering the establishment of proper binocular vision and the fusion of images from both eyes. Consequently, the suppression of visual input primarily affects the amblyopic eye (10).

3. Visual Deprivation Amblyopia

It occurs due to any pathology that obstructs the visual pathway, leading to partial or complete blockage, causing blurred image to be formed onto the retina (11). Various factors, including early-onset or congenital cataracts, corneal opacity, vitreous haemorrhage, retina damage, optic nerve pathologies, or ptosis can contribute to this obstruction (12).

4. Occlusion or Reverse Amblyopia

It results from prolonged visual deprivation in the healthy eye, often induced by pharmaceutical cycloplagia or therapeutic patching (13). It is a form of iatrogenic-induced amblyopia and is quite rare.

Screening and diagnosis of amblyopia

Amblyopia screening should be a part of routine health surveillance for children aged 35 years in many countries (14). 60% decreased prevalence of amblyopia and improved visual acuity outcome at age 7 years was observed by repeated early screening compared to surveillance only until school entry (15).

Moreover, amblyopia can be treated more effectively when treated early; the same study found a 70% lower prevalence of residual amblyopia after treatment when therapy was initiated before age 3 years (15). The gold standard for amblyopia screening is visual acuity testing and most vision screening programs still rely on visual acuity charts as their primary screening test for amblyopia (16).

Because of the high false positive rate, the "earlier is better" notion has recently been called into question because automated screening may lead to unneeded office visits, treatment, financial burden, and potential psychosocial harm (17).

New alternatives for early vision screening that target amblyopia directly rather than risk factors are on the horizon, including retinal birefringence, optokinetic nystagmus visual acuity screening, and artificial intelligence.

Binocular Retinal Birefringence Screening

Because the Henle fibre layer is a birefringent tissue, Retinal birefringence scanning takes advantage of the unique architecture of the human fovea, with its radial organization of the Henle fibres. In 2016, binocular retinal birefringence scanning won US Food and Drug Administration (FDA) de novo clearance, with indications for screening young children for amblyopia and strabismus. After minor redesign, the device is now available as the blinq. (Figure 2)



The blinq provides a definitive "pass" and "refer" output for amblyopia, including refractive amblyopia, microstrabismus, and strabismus.

Artificial Intelligence and Screening

The promising role of artificial intelligence (AI) to enhance preschool vision screening is only now beginning to be investigated. One such device has been developed by DIVE Medical that uses an eye tracker to provide a fast and objective measurement of visual acuity and fixation instability (18).

Another AI approach, which has yet to be explored for paediatric vision screening, is to

collect symptom data by electronic child- or parent-report as the input for machine learning-based prediction models for amblyopia. This approach has worked well for diverse medical conditions in adults, including early detection of immune related adverse events (19)

The American Academy of Ophthalmology (AAO) Preferred Practice Patterns Guidelines (PPP) outline suggested diagnostic criteria,(2022) detailed in Table 1 (6).

As	Finding
Uni	
Response to monocular occlusion	A
Fixation preference	Failure to initiate or maintain fixation, or strong preference for one eye
Preferential looking	Interocular difference of two or more octaves *
Best-corrected visual acuity	Interocular difference of two or more lines, with the better eye within the normal range †
Bilate	
BCVA in each eye †	Age 3 to <4 years: VA worse than 20/50 in both eyes Age 4 to <5 years: VA worse than 20/40 in both eyes Age ≥5: VA worse than 20/30 in both eyes

*A 2-octave difference is a 4-card difference in the full set of Teller Acuity Cards.

†In cases of bilateral amblyopia, the visual acuity may not be symmetrical

Table 1: Understanding AAO PPP's Diagnostic Approach to Amblyopia (1)

Treatment

Amblyopia is a neurodevelopment disorder that results from inadequate visual experience during the first years of life. It is the most common cause of monocular visual acuity impairment in children, affecting 2 or 3 of every 100 children (20) Refractive error correction should be the initial treatment method for amblyopia, which improves retinal image quality with spectacles. Within 30 weeks, one-third of previously untreated amblyopic children were benefited with optical correction alone (21, 22). Treatments are available for monocular visual acuity deficit and binocular dysfunction and suppression.

Monocular Treatment Approaches

The current standard-of-care focuses on targeting the monocular visual acuity deficit by forcing the amblyopic eye to actively work, and thereby promoting normalization of visual cortical function in response to visual input from the amblyopic eye.

Patching or Occlusion therapy:

Occlusion of the better eye and forcing the amblyopic eye to work proved to significantly improve the visual acuity but had poor compliances (23) because difficulty of forcing a patient to wear the patch.(24) Instead of providing time consuming treatment like patching, therapies like perceptual learning or video games are gaining popularity in current amblyopia therapy. These methods demand significant patient's attention throughout the time of therapy.(25). Table 2 shows age related schedule of occlusion therapy(26) Table 2

Age of patient at the beginning of therapy(in years)	Number of days	Number of days the amblyopic eye is patched	One cycle of
1	1	1	2
2	2	1	3
3	3	1	4
4	4	1	5
5	5	1	6
6 and >6	6	1	7

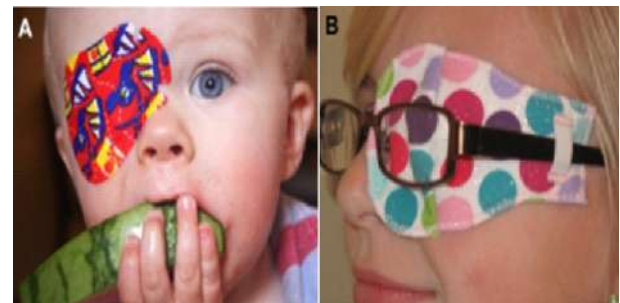


Figure 3 : An adhesive (skin) patch (example from www.ortopadusa.com). B. A patch designed for use underneath glasses

Penalisation:

The principle is to force the amblyopic eye to a greater use for distance, near or both with the help of glasses or cycloplegic drugs. It is done by administering Atropine sulfate (1%) into the sound eye of a child with amblyopia. The alternative of pharmacological agents is by using spectacle correction to produce blurring of the better eye's vision either at distance or nearby, this is known as Optical penalisation. With the help of Video games, Amblyopia was treated binocularly & showed better compliance with improvement in both visual and stereo -acuity which was followed by Dichoptic having a significant successful rate over the years.(27,28)

Bangerter (Translucent) Filters : It is a translucent membranes that adhere to the eyeglass lens of the fellow eye, used for mild to moderate amblyopia. This filter has been used mostly as maintenance treatment after initial treatment with either patching or atropine(6)(Figure 3)



Binocular Treatment Approaches

Dichoptic: Dichoptic games provide contrast-balanced binocular vision with low contrast for the fellow eye and high contrast for the amblyopic eye and can even treat adult amblyopia who doesn't respond to patching. Another advancement of the dichoptic technique is that visual acuity gained through this method is maintained for at least 12 months. (29, 30)

Bynocs: Bynocs is comprehensive cloud-based software for binocular vision assessment & therapy. It also evaluates other sensory visual functions like contrast sensitivity, color vision, fixation pattern, suppression, and diplopia **I-BIT: Interactive binocular treatment** system which is used to treat amblyopia using dichoptic stimuli presented via virtual reality game play or movie watching.(Figure 5)



Figure 5: A child wearing red-green anaglyphic glasses to play the contrast-rebalanced Dig Rush game for amblyopia treatment (left) and an example screen from the Dig Rush game (right) (31) The amblyopic eye, viewing through a green filter, sees the high-contrast red elements

of the game (miners and fireball) while the fellow eye, viewing through a red filter, sees the reduced contrast blue elements (gold nuggets and mining cart).

MFBF technique (Monocular Fixation in a Binocular Field):

This technique involves the presentation of peripheral stimuli to both the eyes, while only the amblyopic eye is stimulated at the fovea. For e.g. The patient may be instructed to complete tasks such as crossword puzzles, or placing dots in the 'O' letters in a text, using a pen and wearing red-green glasses, with the red lens of the non-amblyopic eye.

Orthoptek : Motor and sensory aspects of vision are the principles used for the development of the Orthoptek Magnocellular Stimulator (OMS; Carditek Pvt. Ltd., Bangalore), a novel treatment modality for amblyopia. Stimulation of M cells, stimulates the fovea as well, and the foveal stimulation starts a few milliseconds before the saccadic movement has begun and lasts after the completion of the saccade. The farther away from the fovea the image is located on the retina, the greater the eye movement to bring the peripheral retinal image on to the fovea (for finer analysis), and greater is the retinomotor value of that receptor. Hence, the fovea has zero retinomotor value (32). This is an important principle used in the instrument design.

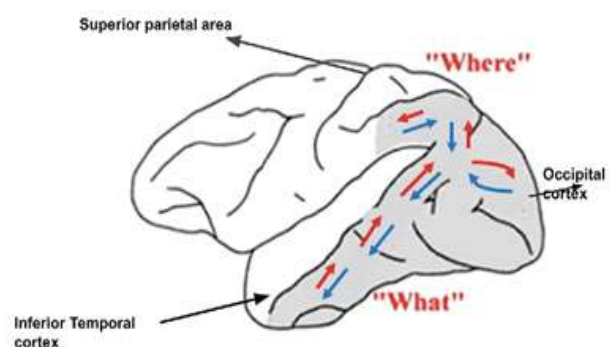


Figure 6: The parvocellular cells end in the primary visual cortex (V1) at level 4 C beta and magnocellular cells end in V1 at the level 4C alpha. The P cells are then further processed in the mid and inferior temporal cortex, concerned with “ what “ of vision and magnocellular cells discharge is further processed in the superior parietal cortex concerned with “where” of vision



Figure 7: Photograph of orthoptek instrument. It has three rows of LEDs of white and central one is red

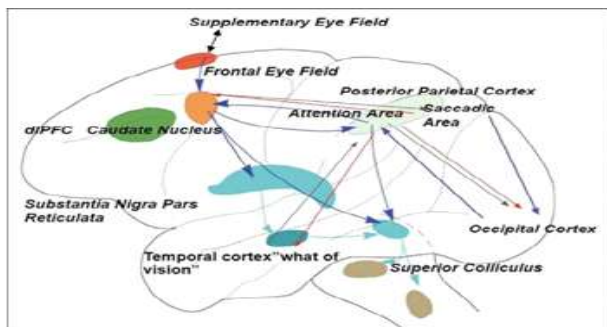


Figure 8: Sensory motor integration occurs in the posterior parietal cortex (PPC) also referred to as an “associative” cortical region, during the generation of a saccade. The Occipital cortex receives topdown impulses from superoparietal cortex, attention area and saccadic area of the posterior parietal cortex, frontal eye field area (FEF) and also from the inferotemporal cortex via the attention area.

The AAO's consensus recommendations for adjusting amblyopia treatment (2022) are illustrated in Table 3. (6)

Recommendations for Adjusting Treatment in Amblyopia	
Treatment Response	Change in Treatment
Visu	Maintain or increase patching or atropine, or consider alternative therapy.
Severe skin irritation develops with patching	Select alternative therapy
Visual acuity is not improved with occlusion.	Consider alternative treatment, taper or terminate treatment if prior treatment has been sufficient.
Treatment unsuccessful due to underlying pathology (e.g., optic nerve hypoplasia).	Taper or terminate treatment.
Strabismus and/or diplopia develop.	Temporarily stop treatment and monitor eye alignment and vision.
Visual acuity decreases in the fellow eye by two or more lines.	Temporarily stop treatment, review diagnosis, and monitor. If reverse amblyopia, consider patching the previously amblyopic eye.
Visual acuity is stabilized at normal or near normal over a period of 4 or months confirmed on two or more visits.	Taper or terminate therapy.

Figure 2: Guidelines for Modifying Amblyopia Treatment Recent researches have concluded

that along with the amblyopic eye, the functional deficits also occur in the normal fellow eye, other deficits include slow reading, impaired motor skills, and low self-esteem and quality of life.(32) Therefore, it is important to diagnose and treat amblyopia as early as possible because all issues that can streamline into a child's everyday life, can persist into adulthood(33) Similar to the interchange ability of patching, atropine, and Bangerter filters, the new monocular and binocular advances in amblyopia treatment provide alternatives that can be used alone or in combination with these standard-of-care treatments.

Summary / Conclusions:

In past many years, there have been many well-designed, prospective controlled clinical trials to demonstrate both the efficacy and limitations of traditional amblyopia therapies. Perceptual learning and medical intervention have shown promise, but lack well-designed studies to suggest sustained effect outside the treatment period. Dichoptic training has extensive research suggesting effectiveness, but the most recent randomised trial failed to demonstrate non-inferiority over standard treatments. Continued modification and adaptation of these novel methods in the future may benefit both the children and adults equally

References :

1. Von Noorden GK, Campos E. *Binocular Vision and Ocular Motility*. 6th ed. St Louis, MO: Mosby;2002
2. Meng Z, Fu J, Chen W, et al. *Prevalence of amblyopia and associated risk factors in Tibetan grade one children*. *Ophthalmic Res* 2021;64:280-9.
3. Gunton KB. *Advances in amblyopia: What have we learned from PEDIG trials?* *Pediatrics*. 2013;131(3):540-547.
4. Billson FA, Fitzgerald BA, Provis JM. *Visual deprivation in infancy and childhood: clinical aspects*. *Aust N Z J Ophthalmol*. 1985;13(3):279-286.
5. Carlton J, Kaltenthaler E. *Amblyopia and quality of life: A systematic review*. *Eye*. 2011;25(4):403-413.
6. Cruz OA, Repka MX, Hercinovic A, Cotter SA et al *American Academy of Ophthalmology Preferred Practice Pattern Pediatric Ophthalmology/Strabismus Panel. Amblyopia Preferred Practice Pattern*. *Ophthalmology*. 2023 Mar;130(3):P136-P178.
7. Repka MX. *Amblyopia Outcomes Through Clinical Trials and Practice Measurement: Room for Improvement: The LXXVII Edward Jackson Memorial Lecture*. *Am J Ophthalmol*. 2020 Nov;219:A1-A26.

8. Hamm L, Chen Z, Li J, et al. Interocular suppression in children with deprivation amblyopia. *Vision Res.* 2017 Apr;133:112-120
9. Najem K, Margolin E. *StatPearls StatPearls Publishing; Treasure Island (FL): Feb 20, 2023.*
10. Şahin Karamert S, Atalay HT, Özdek Ş. Strabismus in Retinopathy of Prematurity: Risk factors and the Effect of Macular Ectopia. *Turk J Ophthalmol.* 2023 Aug 19;53(4):241-246.
11. Hamm L, Chen Z, Li J, Black J, Dai S, Yuan J, Yu M, Thompson B. Interocular suppression in children with deprivation amblyopia. *Vision Res.* 2017 Apr;133:112-120.
12. Hamm LM, Chen Z, Li J, Dai S, Black J, Yuan J, Yu M, Thompson B. Contrast-balanced binocular treatment in children with deprivation amblyopia. *Clin Exp Optom.* 2018 Jul;101(4):541-552.
13. Elhusseiny AM, Wu C, MacKinnon S, Hunter DG. Severe reverse amblyopia with atropine penalization. *J AAPOS.* 2020 Apr;24(2):106-108
14. Mema SC, McIntyre L, Musto R. Childhood vision screening in Canada: public health evidence and practice. *Can J Public Health.* 2012;103:405.
15. Williams C, Harrad R. Amblyopia: contemporary clinical issues. *Strabismus.* 2006;14:4350.
16. Wall TC, Marsh-Tootle W, Evans HH, et al. Compliance with vision screening guidelines among a national sample of pediatricians. *Ambul Pediatr.* 2002;2:44955.
17. Holmes JM. When to screen for amblyopia. *J AAPOS.* 2020;24:656.
18. Pueyo V, Perez-Roche T, Prieto E, et al. Development of a system based on artificial intelligence to identify visual problems in children: study protocol of the TrackAI project. *BMJ Open.* 2020;10: e033139
19. Iivanainen S, Ekstrom J, Virtanen H, et al. Electronic patient-reported outcomes and machine learning in predicting immune-related adverse events of immune checkpoint inhibitor therapies. *BMC Med Inform Decis Mak.* 2021;21:205.
20. Friedman DS, Repka MX, Katz J, et al. Prevalence of amblyopia and strabismus in White and African American children aged 6 through 71 months the Baltimore Pediatric Eye Disease Study. *Ophthalmology.* 2009;116(212834):e1-2.
21. Pediatric Eye Disease Investigator Group. Treatment of anisometropic amblyopia in children with refractive correction. *Ophthalmology.* 2006;113: 895903.
22. Pediatric Eye Disease Investigator Group. Optical treatment of strabismic and combined strabismic anisometropic amblyopia. *Ophthalmology.* 2012;119:1508.
23. Searle A, Norman P, Harrad R, et al. Psychosocial and clinical determinants of compliance with occlusion therapy for amblyopic children. *Eye.* 2002 Mar;16(2):150-5.
24. Holmes JM, Beck RW, Kraker RT, et al. Impact of patching and atropine treatment on the child and family in the amblyopia treatment study. *Archives of ophthalmology (Chicago, Ill.: 1960).* 2003 Nov 1;121(11):1625-32.
25. Repka MX, Beck RW, Holmes JM, et al. A randomized trial of patching regimens for treatment of moderate amblyopia in children. *Archives of ophthalmology (Chicago, Ill.: 1960).* 2003 May 1;121(5):603-11.
26. Saxena R, Sharma P et al (2020). Consensus Criteria National consensus statement regarding pediatric eye examination, refraction, and amblyopia management.
27. Li SL, Reynaud A, Hess RF, et al. Dichoptic movie viewing treats childhood amblyopia. *Journal of American Association for Pediatric Ophthalmology and Strabismus.* 2015 Oct 1;19(5):401-5.
28. Hess RF, Mansouri B, Thompson B. Restoration of binocular vision in amblyopia. *Strabismus.* 2011 Sep 1;19(3):110-8.
29. Kelly KR, Jost RM, Dao L, et al. Binocular iPad game vs patching for treatment of amblyopia in children: a randomized clinical trial. *JAMA Ophthalmol.* 2016;134:14028..
30. Santhan G, Jayadev C, et al. Looking beyond occlusion: Anovel perspective for amblyopia treatment. *Indian J Ophthalmol* 2020;68:2462-5.
31. Webber A. The functional impact of amblyopia. *Clin Expl Optom.* 2018;101:44350.
32. Birch EE, Castaneda YS, Cheng-Patel CS, et al. Self-perception of school-aged children with amblyopia and its association with reading speed and motor skills. *JAMA Ophthalmol.* 2019; 137:16773.



Dr Pawan Kumar
Post Graduate Resident
Jawahar Lal Nehru Medical
College, Ajmer, Rajasthan

"My Journey : Life Beyond Ophthalmolog"



I have been passionate about music, sports, photography and various related activities since childhood. These add value to my life and a happiness that is beyond measure. Facebook as a social media platform has been popular for a decade or more, and I saw various activity forums and groups. An idea came to my mind in mid-2019, why not bring together my friends in Ophthalmology who share similar passions? I started the Facebook group LIFE BEYOND



OPHTHALMOLOGY in November 2019.

We began with a small group of friends, and the earliest activities were a singing competition and a photography competition. The support and enthusiasm increased by leaps and bounds as many members from across the country joined and started participating. I felt the need to encourage new members and those who were shy and hesitant to take part and nudge them to be active. Post of the day was an exercise I did right from the beginning to inspire members to put forward their best. We have had amazing posts in art, music, dance, poetry, instrumental performances, and photography from all over the country. Today we are 8500 members strong and still growing.

COVID-19 and the lockdown brought everyone together in the virtual world, and the programs on the LBO platform helped us to look forward to a creative outlet.

Sharing of knowledge and inspiration in art, dance, music, photography, cooking, gardening and so many other fields brought recognition to the talents within our fraternity. We held an LBO DANCE Competition Season 1 during the lock down days and Season 2 almost a year later.

LBO-Antakshari turned out to be a popular game played with 4 teams every week on the Zoom platform. LBO-MEHFIL, a performance of live music was crafted and executed by wonderful singers in LBO. OphthaPoets- an online discussion about various poetic forms and the subtle art of



poetry in various languages, brought many poets together! Over a period of 4 years, we have had many theme-based events and competitions like Tattoo, Rangoli, Reels, sarees, cookery, photography and many more.





LBO ART group brought together amazing talented artists and we are proud to say, that it led to an interest in many members who took up art after being inspired by the group. LBO ART Magazine Anniversary Edition was published in December 2020 and showcased some great artworks and tips from masters in the field. This was followed by editions 2, 3 and recently the 4th edition in March 2024. It makes me immensely proud to see all the artists make efforts to participate and share their experiences, tips and guidance with other budding artists.

With so much buzz and camaraderie online, we went ahead with our first physical LBO Meet-LBO. Dhamaal during AIOC 2022 in Mumbai. It was 3 hours of entertainment in the form of dances, singing, a fashion show and LBO awards. There were over 80 participants and an enthusiastic audience of 500 plus. It was a memorable night for all. LBO Art Gallery and Photo



Gallery were also started in AIOC to encourage all ophthalmologists.

The 2nd edition of LBO Dhamaal was held again during the first Mid-term AIOC at Patna where a unique Ramp Walk of members representing the culture and tradition of all the States of India was started. The 3rd edition of LBO Dhamaal was held during AIOC 2023 at Kochi.



When we began in 2019, I never imagined the support, love and enthusiasm the group would see in the future. It s because of the members coming together and positively sharing their ideas and talents, that the LBO group has become a wonderful family that bonds together!

I hope the LBO Family grows stronger in the coming years and we keep living and sharing our passions. With a positive mindset let s stride into the future as ophthalmologists who live beautifully beyond their profession too! Live your Passion....



Dr. HARSHUL TAK

Director
Rawat Eye & Phaco Surgery
Centre, Jaipur
Laser Vision Centre, Jaipur
Founder Group Admin
Life Beyond Ophthalmology

"Green Grahini - Ek Lota Jal Badal Dega Kal"

Dr. Preetilal ⁽¹⁾

1: Dr Nandlal Hospital and Research Centre, Ajmer



For in the true nature of things, if we rightly consider, every green tree is far more glorious than if it were made of gold and silver', said Martin Luther King Jr., realising the immense importance of trees in our lives. Planting trees is always a good idea because trees allow for soil retention and carbon storage. As trees go through their life cycle they contribute by way of moisture generation as well as carbon recycling. In fact, trees are responsible for sustaining the environment in several ways. A large area of Ajmer city including many dividers and regions was covered with sand and with no trees around, ensuing into rise in heat and temperature. This situation of the city gave birth to Green Grahini- An Independent, Non- Profitable organization, primarily concerned with planting trees not only in our houses, locality or nearby areas but all around the city.



This journey of Green Grahini started three years ago, on 5th June on the occasion of World Environment Day, when a few women of Ajmer city set out to do plantation ride to make the city lush and verdant with the thought and hope to make a difference. This bevy of Ladies included both Housewives & Working Women.

I, Dr. Preetilal (MBBS, MS Ophtho) from Dr. Nandlal Hospital, Ajmer, Secretary of Green Grahini Organization, Mrs. Neelu gupta, President of our organization, and some of my friends had a thought to do something revolutionary to make the city greener and healthier. As we all know we as females always have an in-built quality to grow and nurture anything whether it's a child or a sapling. This time we all got onto the streets to plant trees all around the city. This is how Green Grahini emerged and took its roots. Initially, people made fun of us when we started planting trees on roadsides and dividers by saying that , " you're just a group of females, how would you do all the work alone by yourself!!, be it digging pit holes, planting saplings, watering them regularly and taking care of the plants. This is not going to work ", but we were firm on our goal. Three years ago, on the occasion of World Environment Day, we stood together and inaugurated our mission "Green Grahini". We contributed money by oneself for this noble cause and started our plantation ride by planting trees on Regional College road. At that time the trees on that road were scarce and there was only one tree in-between a distance of 15 feet. We filled those gaps by planting more trees and those trees that are still flaunting their lush foliage on that road.



Today, three years have passed having rooted and survived close to 2000 trees in the city and we are constantly escalating healthy- happy smiles through our trees. In these three years we have planted and have also distributed many plants to people who wanted to plant trees near their houses and locality. Additionally, we are maintaining our trees which are on road side by installing and securing them with Tree Guards. The best time for tree plantation is during the monsoon season, which typically lasts from July to September. So, we do plantation along road sides and dividers during monsoon season because the soil remains moist, which makes it easier for the trees to take root and establish themselves. Additionally, the monsoon season provides ample rainfall, which is essential for the growth and development of trees.

We nurture and take care of these trees for the whole year. Until winters, maintenance work of these trees goes on swiftly but by the start of summer season, comes the major setback in maintaining and taking care of our cultivated plants. At that time of hot and humid summers, we water our plants and trees by water tankers on site daily. The funds are contributed by the group.

Our group is not registered under Income Tax policy, so we don't get any personal benefit or aid for all the expenses involved in tree plantation and maintenance. We, the members of Green Grahini only, contribute and collect money for all the activities performed to plant and save trees. There are more than 100 members in our group amongst them 35 members are executive and paying members, who besides contributing physically and soulfully, also contributes financially to the organization. As our only motto is to serve our mother nature by any means, if anyone wants to join us, they can come and give their contribution in any form, be it physically (helping in plantation rides and taking care of trees), by heart and soul (promoting it via social media or any means of communication) so that more people join our organization or financially (contribution) resulting into its growth towards making our city healthy and green. At our place, we are contributing by every means we can

(Tan, Man, Dhan)



Today, after three years, when our city is already blooming with lush greenery all around, Ajmer's Municipal Corporation has also noticed and recognised our hard work and efforts and the officials decided to take over and play their part for the betterment of our city and the whole flora and fauna. On August 7th 2024, an official event took place where some of the prominent personalities of the city including the Dist. Collector of Ajmer Dr. Bharti Dixit was also present. They took the responsibility of all the dividers for plantation. Today all those dividers are full with greenery. On the same day, our group got the recognition from our collector and we got honoured and appreciated by the collector for our hard work and efforts. We, as an organization for a noble cause, are very happy that our hard work was noticed, we got identified and appreciated by the government for whatever we are doing. Appreciation always boosts your motivation.

Presently also, we are working hard towards this noble cause and will do in future also and will remain promoting it. It's the responsibility of each and every citizen of Ajmer to keep the city clean and healthy, and to help in maintaining

clean and fresh air in the city. It's our request to each and every citizen to start contributing in keeping our city clean and healthy , simply just by starting from your home. If you get enough time then come out and look after the trees planted on roads, parks, dividers etc. Whenever you get chance, plant trees, maintain and look after them. Whenever you get out of your house, take a vessel or bottle full of water. Pour that water in the plant or tree you get on your way. And whenever you water a plant or tree try to talk with the them like our family members. Just like we talk and play with our kids they tend to grow better and faster, trees also grow and flourish in the same manner. Our slogan is “Ek Lota Jal, Badal Dega Kal”.

So, if each and every person use this method and inculcate this habit in oneself, the day is not far when our city will morph into a beautiful dreamland. So from today whenever you click any picture, please click with trees and whenever you smile instead of saying 'CHEESE' say 'TREES'.

Our aim :

our aim is to plant as much as possible to not only greenify our locality or nearby areas but the entire city. Though it's extremely difficult to sustain plants on dry land, yet the continuous hard work and team work of our organization efficiently helps us in fostering our plants. With our each healthy tree flaunting its lush foliage, we are greenifying the city beautifully. As a dutiful member of Green Grahini Organization, I always try to stay connected and to keep every member connected with each other, so as to add more members and taking this organization to new heights.. So Green Grahini is not only an organization but its a campaign to make our city green and healthy.

Our Green Grahini Impact :

Over the years, what we have received as the best accolade to our green mission is the healthy transformation of our each tiny sapling into a blooming tree. Adhering to the responsibility of delighting Mother Nature, our Green Grahini organization would forever stand as a true testament to the affectionate endeavors we make towards nurturing and maintaining our plants.



Dr. Preeti Lal
 MBBS, MS(Ophtho), Fellow
 LVPEI Hony. Secretary
 Ajmer Ophthalmological Society
 Green Grahini Director :
 Dr Nandlal Hospital and Research Centre, Ajmer

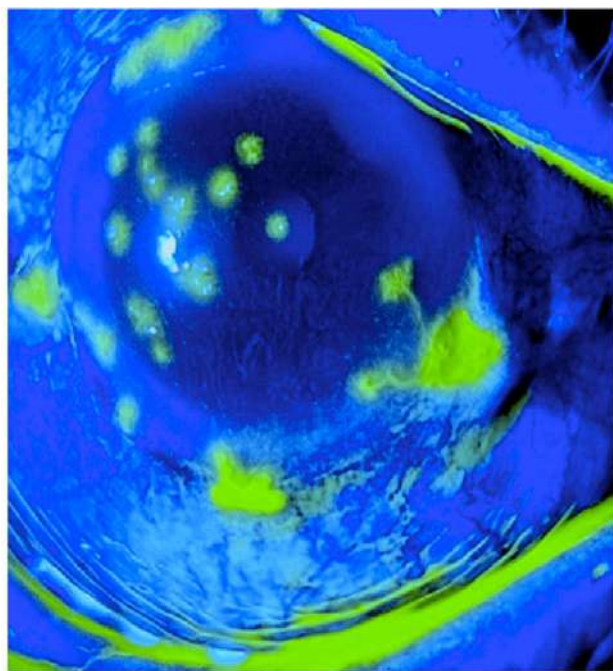
"Ophthalmic insights across the society"



"Every Red Eye is Not Acute Conjunctivitis" "A Cautionary Tale of Misguided Over-the-Counter Drug Use"

Dr Nikhil Agrawal⁽¹⁾, Dr Kirti JaiSingh⁽¹⁾, Dr Kavita R Bhatnagar⁽¹⁾, Dr Manjari Tandon⁽¹⁾,
Dr Nidhi Paharia⁽¹⁾

1. Department of Ophthalmology, AIIMS Jodhpur



In this image, we document the presentation of a 60-year-old male patient with a history of redness and watering in the eye for one week. The patient had initially self-administered over-the-counter eye drops containing a combination of ciprofloxacin and dexamethasone, an antibiotic and steroid respectively, often misused in cases of undiagnosed ocular conditions. Clinical evaluation using a slit lamp revealed the presence of follicles in the inferior palpebral conjunctiva, and fluorescein staining exhibited extensive epithelial dendritic lesions across the entire cornea, suggestive of Herpetic viral keratitis, which was likely exacerbated by the unsupervised use of steroids.

The patient responded positively to a regimen of acyclovir eye ointment, administered five times daily over the course of one week. This case is remarkable for its extensive dendritic-like lesions spanning the entire cornea, a deviation from the typical manifestation of Herpetic keratitis.

It underscores the imperative for accurate diagnosis and the risks associated with the self-prescription of steroid-containing eye drops in ocular conditions, reinforcing the essential role of professional medical evaluation and intervention in ocular symptomatology.

Herpetic viral keratitis is a common yet serious ocular condition that can be significantly worsened by inappropriate treatment, such as the misuse of steroid-containing eye drops.(1) Studies have shown the importance of correct antiviral therapy in managing herpes simplex virus epithelial keratitis and preventing complications (2-4).

Hence early clinical diagnosis is crucial for the accurate identification and treatment of ocular infections (5).

References :

1. Kaye, S. B., & Choudhary, A. (2006). Herpes simplex keratitis. *Progress in Retinal and Eye Research*, 25(4), 355-380.
2. Labetoulle, M., Auquier, P., Conrad, H., et al. (2005). Incidence of herpes simplex virus keratitis in France. *Ophthalmology*, 112(5), 888-895.
3. Pepose, J. S., & Wilhelmus, K. R. (1992). Laboratory diagnosis of ocular infections. *Medical Microbiology and Immunology*, 181(1), 1-7.
4. Labib, B. A., & Chigbu, D. I. (2022). Clinical Management of Herpes Simplex Virus Keratitis. *Diagnostics*, 12(10), 2368.
5. MDPI. (2024). *Clinical Management of Herpes Simplex Virus Keratitis*.



Dr. Nikhil Agrawal
Asst. Prof. Ophthalmology
Cornea Cataract Refractive
Surgeries and Ocular Surface
AIIMS, Jodhpur

"The Itchy Hands : Contact Dermatitis in an Ophthalmologist"

Dr. Prateek¹, Dr Akanksha Kumari ², Dr Anshuman Pattnaik³

1: Paliwal eye hospital, Jodhpur, Rajasthan

2: Centre of excellence, Akhand jyoti eye hospital, Mastichak, Parsa, Bihar

3: Dept of Ophthalmology, Manipal Tata Medical College, MAHE, Manipal

Abstract : Hand hygiene is an important and unmissable ritual before any surgery. Frequent and exorbitant use of hand hygiene products can cause recalcitrant contact dermatitis. This article reports the significant morbidity suffered by the author because of contact dermatitis. It also aims to alert other doctors for keeping an eye out on this obstinate condition. The authors also provide suggestions to prevent and alleviate the effects of contact dermatitis alongside rationalizing use of hand hygiene products.

Key Words : Hand hygiene, contact dermatitis, occupational disorder, alcohol hand-rubs, latex allergy

Introduction :

The importance of hand hygiene to prevent nosocomial infections cannot be emphasized enough. However continued exposure of Healthcare workers (HCWs) to chemicals such as povidone-iodine, chlorhexidine, latexgloves, soaps and detergents to maintain asepsis can assume status of an occupational disorder. This article shares experience of an ophthalmologist in dealing with such a condition manifesting as contact dermatitis and expounds on it to alert other HCWs against similar fate.

Case Report :

The case involves a practicing ophthalmologist who while getting scrubbed with 7.5% beta dine and putting on powdered latex gloves experienced irritation and burning on degloving two years back. Consequently after further scrubblings, appearances of vesicles and rashes were noted on hands

Multiple new skin lesions kept on appearing. It led to compulsive rubbing affecting sleep and causing restlessness so much so that author was fearful of using hand hygiene products.

On consulting a dermatologist it was diagnosed as beta dine induced or latex induced contact dermatitis and advised to avoid exposure to the probable allergens. Chlorhexidine (4%) solution was adopted in place of beta dine and formalin-sterilized plastic gloves were worn underneath latex gloves to avoid latex-skin contact (since sterile nitrile gloves were not available). This led to little reduction in inflammation with persisting symptoms. The dermatologist further opined that formalin droplets on plastic gloves and powder on latex glove could have become new triggering agents on already irritated skin.

The condition worsened in winters causing immense discomfort while performing high volume cataract surgeries in camps



Multiple grouped vesicular lesions along with rashes.



Multiple erythematous papulo-plaque lesions with lichenification

A possible explanation is that the barrier function of skin is impaired by occlusion effects caused by prolonged wearing of gloves.[1] Also, extended use of hand-sanitizers in post Covid-19 era contributed to relapse of the condition.

The author was prescribed Oral Prednisolone, Oral Fexofenadine and Topical ointments like Betamethasone + Fusidicacid, Halobetasone, Clobetasol+fusidicacid, Moisturisingcreamon subsequent visits.

Being well versed with the systemic and ocular side effects of steroids the author modified practice of pre-surgical hand preparation.He currently uses synthetic-detergent moisturising soap instead of betadine or chlorhexidine scrubs to clean hands followed by dry mopping with autoclaved towel. Alcohol based handrub is then applied and left to air dry. This is followed by wearing of ethylene oxide (EtO) sterilised ethylene vinyl acetate(EVA) gloves and powder free sterile latex gloves on top of it to avoid skin-latex contact



Products currently being used by the author (no financial interests)

This led to complete recession of lesions



Complete resolution of lesion with post-inflammatory hyper-pigmentation

The author is not on any oral or topical medication since 2 years.

Discussion: There are two major types of Contact Dermatitis (CD). The first and most common type is Irritant CD which includes symptoms that can vary from mild to debilitating, including dryness, irritation, itching and bleeding. The second type of skin reaction, Allergic CD, is a delayed hypersensitivity reaction (type IV).Symptoms of allergic CD can range from mild and localized to severe and generalized even causing respiratory distress in worst cases.^[2]

Irritant CD occurs due to repeated exposure to offending agents such as chemicals(alkalis and acids),physical (UV and ionizing radiations),mechanical (friction from rough surfaces),even if in miniscule amount.^[3]In Irritant CD, skin gets damaged due to denaturation of stratum corneum proteins, changes in intercellular lipids and decreased corneocyte cohesion.^[2]

A study from Wuhan found out that 74.5% HCWs had adverse skin reaction and upto 84.6% of these respondents had effects on hands due to prolonged use of PPEs and hand-hygiene products.^[4] Other HCWs from our institution also reported similar symptoms due to the same. In ophthalmologists, irritant CD appears on hands due to frequent abrasivescrubbing priortosurgery, prolonged wearing of gloves or use of hand hygiene products in clinics. Lesions are characterized by erythema, blisters, pustules, haemorrhage, crusts and erosions. Skin lesions are sharply bordered in the areas of contact and usually asymmetric. Distant reactions are rare.^[5] Patch test has no role for diagnosing Irritant CD since it can be easily be diagnosed clinically.^[6]

Methods to combat contact dermatitis for Ophthalmologists:

- 1) Preventive measures for latex gloveallergy^[7]
 - Use of nitrile gloves
 - Before wearing gloves, hands should be dried since damp hands increase irritation.

- Gloves should be worn and removed gently as shearing forces may contribute to dermatitis.^[8]
- EVA EtO sterilised/cotton gloves should be worn underneath occlusive gloves to avoid latex skin contact and hyper-hydration of epidermis.

2) Choosing the right hand hygiene product

- Selecting less irritating products

Irritant CD is more commonly reported with iodophors. Other agents, in order of decreasing frequency, include chlorhexidine, chloroxylenol, triclosan and alcohol-based products. CD attributable to alcohol-based hand-rubs is less common.^[9]

- Promoting use of alcohol based hand-rubs over surgical hand-scrubs because of faster and effective bactericidal action, lack of abrasive scrubbing alongside saving large quantities of water.^[10]
- Alcohol based handrubs with humectants should be preferred to avoid drying effects of alcohol on skin.

3) Use of moisturizing products

Liberal use of hypoallergic emollient cream increases skin hydration and replaces depleted skin lipids that enhance barrier function of skin.

Conclusion:

Compliance with hand hygiene recommendations is essential in preventing the spread of nosocomial infections and cannot be compromised, under any circumstances by adverse dermatologic changes.

However, these hand-hygiene products and PPEs are the leading cause of irritant contact dermatitis. This article advocates use of emollient containing alcohol based handrubs prior to surgery instead of water based surgical handscrubs. For surgeons having latex glove allergy, authors strongly recommend use of Nitrile disposable gloves in OPD. For performing surgeries, EtO sterilised EVA gloves

can be worn underneath Latex gloves. An early visit to dermatologist with better understanding of the offending agents can reduce contact dermatitis and ensure better professional life.

References :

1. Tiedemann, D., Clausen, M.L., John, S.M., Angelova-Fischer, I., Kezic, S. and Agner, T. (2016), Effect of glove occlusion on the skin barrier. *Contact Dermatitis*, 74: 2-10
2. Boyce J, Chartier Y, Chraïti MN, Cookson B, Damani N, Dharan S, et al. WHO guidelines on hand hygiene in health care. First global patient safety challenge. Clean care is safer care. World Health Organization 2009, Switzerland. WHO Library Cataloguing-in-Publication Data; 2009.
3. Novak-Bilić G, Vučić M, Japundžić I, et al. Irritant and allergic contact dermatitis - skin lesion characteristics. *Acta Clin Croat*. 2018;57(4):713-720.
4. Lin, P., Zhu, S., Huang, Y. et al. Adverse skin reactions among healthcare workers during the coronavirus disease 2019 outbreak: a survey in Wuhan and its surrounding regions. *Br J Dermatol*, 183: 190-192.
5. Przybylla B, Rueff F. Contact dermatitis. In: Burgdorf WHC, Plewig G, Wolf HH, Landthaler M. Braun-Falco's Dermatology. Berlin: Springer-Verlag; 2009. P. 377-401.
6. Ghosh S, Kundu S, Ghosh S. Epidemiological pattern of contact dermatitis among urban and rural Patients attending a tertiary care center in a semi-urban area in Eastern India. *Indian Journal of Dermatology*, 2020;65(4):269-273
7. Reiche L. Hand care for healthcare workers. *Dermnetnz [Internet]*. 2009 Available from: <https://dermnetnz.org/topics/hand-care-for-healthcare-workers/>
8. Kownatzki E. Hand hygiene and skin health. *Journal of Hospital Infection*. 2003;55:239-245.
9. Lubbe J, et al. Irritancy of the skin disinfectant n-propanol. *Contact Dermatitis*. 2001;45:226-231
10. Batalla A, García-doval I., De la torre C. Products for Hand Hygiene and Antisepsis: Use by Health Professionals and Relationship With Hand Eczema. *Practical dermatology*. 2012;103(3):192-197



Dr Prateek Jain

MBBS MS DNB MNAMS
Consultant ophthalmologist
& Anterior segment Surgeon
Paliwal Eye Hospital,
Jodhpur, Rajasthan

"Nevus of Ota : Clinical insights and management"

Dr. Akshita Ghiya ⁽¹⁾

1: Dr. Virendra Laser Phaco Surgery Centre - Eye Hospital, Jaipur

A 14-year-old girl was referred by her optometrist, who had noticed unusual pigmentation in the periocular skin and conjunctiva of the patient's left eye. On slit-lamp biomicroscopic examination, ipsilateral grayish-blue hyperpigmentation of the periocular skin, patchy pigmentation of the conjunctiva and sclera, and heterochromia were observed. The patient stated that this asymptomatic finding had been present since birth. Gonioscopy revealed open angles in all quadrants with no excessive pigmentation.

A fundus examination showed a violaceous hue due to hyperpigmentation of the choroidal vasculature in the left eye and a normal appearance in the right eye. The patient's medical and family history was unremarkable, and no pigmentation was visible in the oral cavity. A systemic examination was non-contributory.

Based on the clinical and imaging findings (Figure.1), our diagnosis was nevus fusco-caeruleus ophthalmomaxillaris / oculodermal melanocytosis, or Nevus of Ota, in the left eye. We explained the nature of the disorder, its natural course, and the importance of regular follow-up visits to the patient and her parents.

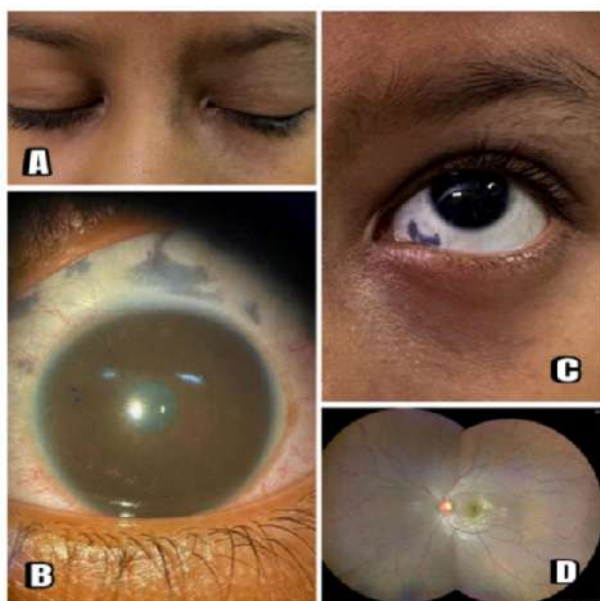


Figure 1:

- (A) Ipsilateral hyperpigmented skin around left eye.
- (B) Left eye heterochromia along with superior episcleral and conjunctival pigmentation
- (C) Left eye episcleral pigmentation on inferior side.
- (D) Left eye choroidal vasculature exhibiting violaceous hue due to hyperpigmentation.

About Nevus Of Ota

Nevus of Ota is a benign melanosis characterized by blue-gray or brown, irregular, often spotted skin discoloration that bears a resemblance to a powder-blast burn and is located on the face. The discoloration occurs in the distribution of the ophthalmic and maxillary branches of the trigeminal nerve (ie, the forehead, periorbital area, temple, and cheek regions), including the sclera, the fundus, and occasionally the mandibular divisions of the facial nerve.¹

The term *fusco-caeruleus* connotes a dark dusky-slate-tan-brown-purple-sky blue color. The bluish color results from the scattering of light by dermal melanin (Tyndall phenomenon). Macules are confluent, nonhairy, and flat with poorly defined margins. The color may also vary slightly depending on factors such as weather conditions, hormones, and illness. It is believed to occur owing to migration arrest of melanocytes on their way to the epidermis from the neural crest.

Epidemiology

The prevalence of Nevus of Ota is greatest among individuals of Asian and African descent; it affects approximately 0.014% to 0.034% of these populations.² The condition is usually unilateral but occurs bilaterally in 5% of cases.

About 50% of lesions are present at birth, and the remainder appear during puberty. Nevus of Ota has a female preponderance. The disorder is lifelong and generally benign. The risk of malignant melanoma is much higher among

White individuals compared to other racial and ethnic groups.

Evaluation And Treatment Diagnosis :

A diagnosis of Nevus of Ota is based mainly on the clinical examination and history. There is no definitive diagnostic test to confirm the disorder. A thorough ophthalmic examination, including gonioscopy and fundus examination, should be performed.

Patients' vision is not particularly impaired by the pigmentary disorder, but they are at increased risk of malignant melanoma and glaucoma.³ A skin biopsy is required if the overlying skin develops ulceration or there is a variation in pigmentation with the development of papules.

Differential Diagnosis :

The differential diagnosis of Nevus of Ota includes nevus flammeus, café au lait spots, contusion or suffusion, ochronosis, circumscribed precancerous melanosis, chloasma, argyria, superficial malignant melanoma, congenital conjunctival pigmentation, diffuse flat nevus of the conjunctiva, and precancerous melanosis of the eye.

Prognosis :

The prognosis of these patients is good. The majority presents to an eye care provider owing to pigmentation of the sclera and iris. The most effective approach for cosmetic treatment of skin lesions associated with Nevus of Ota is laser therapy.⁴ Treatment is thought to destroy the melanocytes that mediate the bluish hyperpigmented sections on the skin.

Follow-up :

Patients should follow up with an ophthalmologist annually to rule out ocular complications.

References :

1. Kopf AW, Weidman AI. Nevus of Ota. *Arch Dermatol.* 1962;85:195-208.
2. Sekar S, Kuruvila M, Pai HS. Nevus of Ota: a series of 15 cases. *Indian J Dermatol Venereol Leprol.* 2008;74:125-127.
3. Cronemberger, S., Calixto N, Freitas HL. Nevus of Ota: clinical - ophthalmological findings. *Revista Brasileira de Oftalmologia.* 2011;70: 278-83.
4. Bhattacharya SK, Girglia HS, Singh G. Nevus of Ota. *Int J Dermatol.* 1973;12(6):344-347.



Dr. Akshita Ghiya
MBBS, DNB
Dr. Virendra Laser Phaco
Surgery Centre
Eye Hospital, Jaipur

Cover Page Image Issue-6

Decoding Benign Flecks Retinopathy



“A Rare but Harmless Retinal Condition”

Benign fleck retinopathy, also known as familial benign fleck retina, is a rare, hereditary retinal disorder characterized by the presence of white or yellowish "flecks" scattered across the retina, often discovered incidentally during routine eye exams.

These flecks are typically seen in the mid-peripheral or peripheral areas of the retina, usually appear in the retinal pigment epithelium (RPE) and are often symmetrical in both eyes. Unlike other retinal diseases that may lead to significant visual impairment, benign flecks retinopathy is a non-progressive and asymptomatic condition. It typically poses no threat to a person's vision, which is why it is referred to as "benign."

Benign fleck retinopathy is inherited in an autosomal dominant manner, and a family history of the condition may be present.

Diagnosis of benign flecks retinopathy is often straightforward through routine funduscopy, allowing clear visualization of retinal flecks. In some cases, advanced imaging techniques like fluorescein angiography and optical coherence tomography (OCT) are used to assess blood flow and detect structural changes in the retina, confirming the benign nature of the condition.

Though benign, it's important to differentiate it from other types of flecked retinopathies that may be associated with systemic diseases or genetic syndromes. Differential diagnosis includes conditions like fundus albipunctatus or retinitis punctata albescens, but these are often associated with night blindness and more significant visual impairments.

Given its benign nature and excellent prognosis, the condition rarely requires treatment or intervention.



Dr Vishal Agrawal
MD (AIIMS),FRCS,FACS,FASRS
Vitreoretina Fellowship,
Sankara Nethralaya, Chennai
Director Agrawal Hospital , Jaipur
Chairman Scientific Committee
Rajasthan Ophthalmological Society



“A moment of peace, frozen in coffee powder”

This artwork, crafted entirely using coffee powder, captures the serene beauty of nature. The scene depicts soft clouds drifting across the sky, while the gentle slope of the ground meets the majestic coconut trees. Mountains with earthy coffee-toned peaks, a graceful river reflecting the sun's golden glow, and trees swaying peacefully along its banks. The serene and luminous sun casts a tranquil light, creating harmony between nature's elements, while the use of coffee powder evokes warmth and a sense of peace.



Dr. Raj Shri Hirawat
MD (AIIMS), DNB, FRCS
Vitreoretina fellowship
Sankara Nethralaya, Chennai
Dr Kamdar Eye hospital, Jodhpur
Associate Editor - Rajasthan ophthalmology society