

COS NEWSLETTER

November 2023

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Interview:

The Legend of Ophthalmology

Prof. Amod Gupta

Is "AI" just a "BUZZ" word?

Dr. Parul Ichhpujani

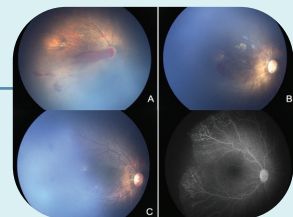


Pediatric Corneal Transplant

Dr. Ashok Sharma

Understanding ICROP third edition

*Dr. Ashutosh Gupta,
Dr. Deeksha Katoch*

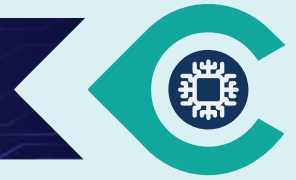


Empathy Lost: Vision Gained

Dr. Hitisha Mittal

Paintings | Photography

...and many more



Message from the COS President

Prof Amit Gupta

Dear Esteemed Members,

As we convene for the 34th Annual Conference of the Chandigarh Ophthalmological Society, it's with great pride and excitement that we launch the new edition the COS newsletter! This newsletter edition encapsulates the essence of our field – from celebrating the luminaries whose dedication has shaped our discipline to showcasing the latest advancements propelling our practice into new frontiers.

The interview with Prof. Amod Gupta, a legend of ophthalmology serves as a testament to the discipline, dedication, innovation and success within our profession. His insights and experiences offer invaluable lessons that continue to guide and inspire us all.

This comprehensive issue also puts together commentary, case summaries and latest advances in addition to exploring the hobbies and life beyond ophthalmology that brings forth the diverse passions that enrich our lives outside the operating rooms and clinics. From paintings to photographs, these creative pursuits offer a glimpse into the multifaceted personas that constitute our vibrant community.

Moreover, the patient chronicles of empathy and the doctor-patient relationship encapsulate the heart of our profession. They underline the profound impact we have beyond the realms of diagnosis and treatment – the human connection that defines our purpose and fuels our commitment.

I extend my heartfelt gratitude to the contributors, editors, and all involved in curating this edition. Your dedication and passion have brought to life a newsletter that embodies the ethos of our small, but vibrant society.

Warm regards,

Prof. Amit Gupta,

President, Chandigarh Ophthalmological Society

Executive members



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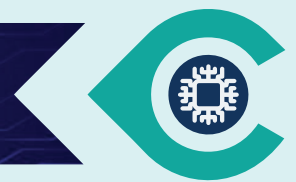
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Executive member



Interview: **The Legend of Ophthalmology**

Padmashri Prof. Amod Gupta

Q 1. How to Be Heard in a Herd:

a. In a highly competitive field like ophthalmology, what advice do you have for young professionals on how to stand out and make a meaningful impact in their careers?

b. Can you share your experiences or strategies for gaining recognition and influence within the field of Ophthalmology?

Answer: Recognition within your peer group is critical for personal and professional growth. Mentorship is crucial, and common in the Western world, where mentors actively promote their mentees, and mutual acknowledgement is common. However, in India, true mentors are scarce, often due to professors' fears of competition from their students.

Selecting a mentor early in your career is essential. They are the escalator for making rapid strides. In the true sense of the word, I missed having a true mentor. I benefited from working with Prof Jain in the initial 15 years of my career. During this time, I learned that the key to peer group recognition was writing academic papers. The papers had to reflect honest and meticulously documented observations. During this time, I realized that ophthalmologists in our country neither documented their patients nor attempted to follow up on them. To my horror, I saw many a professor copy-paste their presentations from the textbooks or the conference handouts given out during AAO meetings.

Persistence and resilience in the face of repeated rejections did not deter me from publishing my papers or presenting them almost always in empty halls. It was disappointing to see the then-most well-known names in the field of retinal diseases invariably walking out as I got up for my turn at the podium. It took me more than two decades to finally gain notice, but once I did, my career trajectory changed significantly, albeit slowly. I know of several examples, even in India, where the mentees had a

quick and steep climb just because they had capable mentors.

Q 2: Role of Publications in Career:

a. Publications are often seen as a measure of success in academia. Could you discuss the significance of research publications in advancing one's career in ophthalmology?

b. What advice can you give aspiring ophthalmologists on effectively disseminating their research and building a strong publication record?

Answer: I spent over 45 years writing and publishing papers in academic journals. I kept writing and publishing papers without a pause, irrespective of what I wrote or where I published. In my time, no one offered advice or guidance on what to publish or where to submit for publication. When I look back, my first 20 years in academia were a waste of time writing for journals that have since vanished without a trace. Many of my articles, although addressed relevant questions, were published in viable but less-known journals where these were barely noticed. I might have thrown these papers into a trash bin.

Writing a thesis is a statutory requirement for an MD/MS degree, but writing a paper is not, and the majority will not write. Your dreams get put paid the moment you say 'No' on facing the first question during the interview, "Did you publish your thesis?"

The world of academia looks very glamorous, especially if you are vying for a faculty position in institutes like PGI or AIIMS. It carries a lot of prestige in society for you and your family. Undeniably, papers are a measure of excellence. The number and quality of papers and the impact factor of journals where you publish help you beat the competition for academic positions in these institutes.

Even private institutions wish to have faculty who can gain publicity through their publications. These help them to build international collaborations and opportunities for further training in emerging areas. Even in private practice, writing papers, especially in

Interview: The Legend of Ophthalmology...

credible journals, and presenting these in meetings, fetch you recognition and spread your name and fame. You start getting invitations from far and wide that help you expand your referral base. Recognition in regional, national, or international meetings can give you an instant high.

Choose credible, high-impact, peer-reviewed journals. They will publish your paper only if it addresses a relevant research question and you have used valid and reproducible tools to reach your conclusions. Refrain from wasting your energies writing for house journals, regional society journals, letters to editors, first case reports in your region or country, etc., which are hardly ever noticed. If you have a sentinel observation, seek others who might have seen similar cases and assemble a series to help break new ground. Presenting such cases in meetings helps you to attract the attention of others with similar experiences.

The world of academia is highly competitive. Credible papers get noticed and cited by others and fetch you recognition and promotions. The journals recognize you as an expert if you have published work in a given field, and you will be asked to peer review new submissions in the subject.

Recognition by the peer group is the lifeline of academia. However, it would be best if you did not only publish but also be seen presenting papers for wider recognition. You must put a face to your published papers. The authors remain anonymous till you see them presenting their work. Next time you come across another paper by the same author, you immediately recognize the person.

The papers can fetch substantial research grants and funding from the government or non-governmental agencies. But if the sole objective of writing or publishing is to win awards, you are on the wrong track. Awards follow in the wake of your publications or research after decades of consistent chase.

Your papers must showcase your ability to ask unanswered questions and find answers to them. You must be able to observe what others can't, be able to interpret what you see and use it to change the way patients are diagnosed or managed. If your paper fails to bring about a change in the behaviour of others, it is a wasted effort. You must ask yourself if your research question seeks to change the guidelines to diagnose, investigate, prognosticate, or manage a disease. If it does, the paper will be accepted in any high-impact journal, provided you have used valid and reproducible tools to reach your conclusions. You must track your papers regularly to see whether your paper is getting traction and resonates with your peer group.

You must beware of predatory journals that print your paper within days or even write a paper for a fee. They are exploiting the most vulnerable, who are desperate to get cushy academic positions or promotions without having the necessary intellectual wherewithal. You must know that the academic world is neither a laid-back job nor a vocation. It needs full-time commitment and must end up with credible publications. It would help if you did your own soul-searching. Are you a curious clinician? Do you have sharper than usual observation skills? Are you open to criticism by your peer group?

Choose a field that fascinates you the most. Don't spread yourself too thin and try to focus on a narrow field. Do not become paper-writing machines. Early career researchers seeking their first academic position beg the faculty members to provide them with data to write a paper in return for authorship of that work. You must realize that such machines are immediately recognized by the expert panel of the interview committees. Every paper you write must raise more questions than answers. It would be best if you were the first to chase your questions rather than leave the field wide open for others to exploit and gain more attention than you ever did.

If you plagiarize, fabricate, or manipulate data, you will be called out sooner or later. Recently, even the president of a world-famous university and a Nobel Laureate have been called out for their misdemeanors.

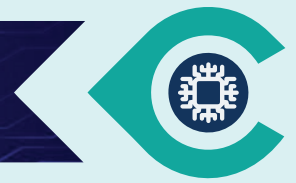
Q 3. Handling Stress During Residency Training:

a. Residency in ophthalmology can be mentally and physically demanding. How can young ophthalmologists cope with the stress and challenges they face during their training?

Stress during residency/fellowship is a universal phenomenon across disciplines and geographies. Before we work out the solutions, we need to look at the factors that lead to stress, many of them avoidable if anticipated well. The capacity to cope with stress varies from one individual to the other. It also depends on how passionate and battle-ready you are to reach your objective of becoming a specialist doctor from a premium medical institute in the country.

Lack of passion: At its simplest, the main reason for stressful times is if you have been pushed by parental pressure or lack of opportunity to become an ophthalmologist, ignoring your desire to become a pediatrician or a physician, or wish to pursue a different vocation altogether.

How ill-prepared students reach the Residency: Students who achieve the Residency and fellowship



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are intellectually well-endowed, worked very hard, and cleared entrance exams to join institutes like the PGI or the AIIMS. Undoubtedly, the crème de la Crème of the students in the medical streams crack these entrance exams. All entrance exams, unfortunately, are designed to test 'recall' at the bottom of the cognitive domain and do not prepare for a life that requires critical thinking and problem-solving at every step.

Premature accolades: When you get admission to a local medical school, you are treated like a hero not only by the family but, more importantly, by the coaching institutions that splash your photographs and NEET score in full-page ads in the newspapers and the billboards in your city. These accolades can turn anyone's head. Even if you come with a load of gold medals and awards in your undergrad, no one cares as all your colleagues would have these and more, and so would most of your faculty members.

Undergraduate versus post-graduate learning: Very often, what is, at best, a milestone in a career spanning several decades is mistaken for a goal post. It is natural to feel relaxed, compensating for the years lost in chasing a seat in a medical school or Residency. The environment of the undergraduate medical school is more liberating compared to the Residency. Most of the undergrad exams have a fixed curriculum that will see you through by rote learning. However, in Residency, besides an ill-defined and ever-expanding course curriculum, understanding the subject matter, self-learning, and critical thinking become more acute.

Unavoidable factors: There is often a language barrier, and food and accommodation are a big challenge. You may not have friends in the same discipline or the same institute. Apart from the language barrier, a lack of communication skills with the patients and their attendants will cause stressful situations.

Professional pressures: Nothing in life has prepared you to deal with real-world patients. Very often, young doctors have not had the time to hone their clinical skills, and especially those joining Ophthalmology have yet to have the opportunity to even learn how to record visual acuity. Long duty hours, a constant inflow of patients, and understaffed emergency rooms/clinics can rattle anyone's nerves. Most of the residents work on an empty stomach, and it will be a rare senior who will show the courtesy to allow them a coffee/food break. There is no leave or holiday for a resident as they are the backbone of the hospital.

Academic pressure: Most post-graduate teaching/learning is centred on individual patients.

Residents are called upon to present and discuss in grand rounds and bedside rounds (by the slit-lamp in Ophthalmology). These are the most stressful times in the life of a resident, where you get publicly humiliated by the attending physician or outsmarted by one of your fellow residents in the event you fail to answer any questions. Anyone reporting late, even by a minute, is called out, and habitual offenders remain at the receiving end for even the most trivial misdemeanors. Very often the faculty indulges in nitpicking, finding fault even with misspelt names or mispronounced names. At times, you may have a toxic faculty member, a trait often seen in the academically less endowed.

b. What are some strategies or practices that helped you personally manage stress during your own Residency?

I was a resident in the PGI nearly 50 years ago. Residency in our times was much less stressful, or it is more likely that our generation felt less stressed than the modern-day residents. We were fewer in number (13 in 3 years); hence, we had to present grand round cases and seminars more frequently than they do today. There were no online resources. There were very few books, and not everyone could afford one. We had to search journals or the scant study material available in the library. Very often, the paper we wished to read for our grand round had been neatly removed from the journal by a rival resident. Except for our chief, there was hardly a faculty member interested in bedside teaching. Still, some of them were toxic, nonetheless. Without exception, all of us were bullied during our presentations but felt no undue pressure as we all sailed the same boat.

I came from times when getting beaten up by teachers on the slightest pretext was a routine, so coming across toxic faculty members during Residency was not a big deal. I remember one resident during my time who quit Ophthalmology midway because he could not handle the stress during his case presentations. The grilling we faced during Residency, of course, had its own rewards. It prepared us well for confidently facing audiences anywhere in the world. Senior residents, although just one per unit, were our primary teachers, guides, and buddies who taught us the fine nuances of patient examination in the after-hours, helped us prepare the grand rounds, and took us regularly on a round of the hospital wards. They were the ones who would often assuage our hurt feelings at the end of the day. I owe a great deal to my senior residents for my sustenance in the department.

Often, the residents from various states formed close-knit groups to help the new inductees navigate

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a strange institute, city, language, food, and culture. These self-help groups (I hope they exist even now) are the most critical stressbusters. I wish they introduced an official buddy system in institutions like the PGI as an interface between the faculty and the new inductees. An induction period of about 15 days (during which the new resident is not pushed into performing duties) to familiarize him with the functioning of the department will be of great help. I remember, during my first year as a resident, I often got lost on the floors and blocks of the Nehru Hospital and spent hours locating various laboratories. My senior resident helped me navigate these challenges.

My recipe for de-stressing is to indulge in activities diametrically opposite to academic work, pursuing your hobby, music, or sports. Don't let go of your hobby no matter how busy you get during Residency; I learned it the hard way, and it never returns. Cooking and washing utensils can be the most de-stressing activity (residents who rent accommodation, please note!). I learned it from my psychiatry chief, who often advised gardening, cooking, and washing to patients with depression with excellent results. I suggest communicating with your parents, family, and friends daily. They are the best stress absorbers. The worst solution is to join fellow sufferers and vent your steam from the hostel balconies. The worst consequence of stress during Residency is indulging in smoking, alcohol, or drugs. Avoid them like the plague. If you catch them during Residency, they will only leave you if you want to, once it is too late.

4. Patient Care and Expectations:

a. Uveitis often requires long-term patient care. How do you approach managing patient expectations and ensuring they are satisfied with their treatment outcomes?

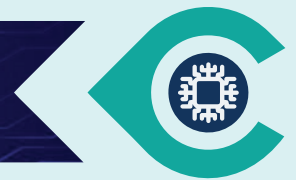
Answer: Patients with Uveitis need life-long care rather than long-term care. Most uveitis cases are autoimmune, and even the non-infectious ones have a significant component of an infectious background. Most of them require corticosteroids and immunosuppressive therapy (IMT) on a long-term basis. These drugs are potentially toxic. It is thus important to make patients a partner/stakeholders in their own care. To ensure compliance and good outcomes, patients must understand their disease and how to fight it. I teach them the concept of inflammation and how to fight it in layman's understandable language. For several decades, I have been using a simple analogy understood by all of my patients without exception. Here it is. I tell the patients, "You are aware how the country's borders are protected day and night by the police patrols.

These policemen carry weapons and, on spotting, shoot at the enemy. There is an exchange of fire between the cops and the enemy. The patrolmen often seek reinforcements from the reserve-trained forces who reach the battle scene in no time and fight off the enemy. Whenever there is war, there is destruction and dust and smoke. Likewise, our body is defended by specialized miniature guards called cells, which patrol the borders of our body. On spotting any invading foreign agent, these cells fire at the invader, invite reinforcements, and successfully fight off the enemy. The dust, smoke, and destruction in the warzone are the outcome of this fight, which we call inflammation. The dust and smoke in the eye have nowhere to go and create dust haze in the eye, which makes the vision blurry. As the border guards protect our territory, the inflammation is for our own protection."

I explain the concept of autoimmune inflammation, "You may have heard of the policemen who become rogue and start shooting at their own people because they cannot tell the difference between the enemy and their own people". Invariably, they have heard of this. When I ask them how they prevent the rogue cops from killing their own people, the answer is often prompt, "Take away their guns". Here, I introduce the concept of corticosteroids, akin to taking away the guns from our own cells. How long can we allow our border patrols to go without firearms and let our borders go unprotected? If the enemy spots our border patrols without their guns, it is tempted to invade our territory. This is the concept of opportunistic infections. In the same vein, I explain the concept of IMT. Rather than taking away their guns, you keep the rogue cops pushed down (using IMT) so that they are not able to shoot at their own people. "When do we allow the rogue cops to raise their heads again or return their arms?". "When we are certain that they are no longer rogue. This we do by slowly releasing the pressure on them." Patients invariably understand that a rogue is a rogue forever. No matter what you do, they will remain rogue and, given a chance, will kill our own people. They must be kept down for a long time, which may be a lifetime. Thus, introducing the need for a long-term IMT is understood and complied with by the uveitis patients.

b. Could you share an example of a particularly challenging uveitis case and how you worked with the patient to address their concerns and provide effective care?

I want to share a vignette of my interest in the uveitis field. I was given a fundus camera by my chief more than 40 years ago. There was a young girl named SR,



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who was often sent to me for a fundus photograph. She had large, pigmented scars in the macula of her right eye from recurrent posterior Uveitis. At each recurrence, she had been treated with oral corticosteroids by the senior consultant, who did not believe that the ocular toxoplasma infection happened in India. A paper appeared around that time on the role of oral clindamycin in toxoplasma (Lakhanpal et al. Clindamycin in the treatment of toxoplasmic retinochoroiditis. Am J Ophthalmol. 1983 May;95(5):605-13). Looking at this young girl, I was quite convinced that she had a toxoplasma infection. When she presented next with a recurrence. I treated her with oral clindamycin, to which she responded promptly with insignificant scarring. It dawned upon me then that there needed to be more understanding of posterior Uveitis in India. For several years, I used a 35mm color slide of her fundus picture in my presentations to introduce the subject of infectious posterior Uveitis.

5. Patient-Doctor Dynamics in the Era of AI:

a. With the rise of artificial intelligence and telemedicine, how do you envision the patient-doctor relationship evolving in ophthalmology?

b. What do you believe are the strengths and limitations of AI in medicine, and how can ophthalmologists adapt to this changing landscape while maintaining the human touch in patient care?

Answer: Introducing any disruptive technology comes with much apprehension, especially how it will impact the patients. When the electronic medical record (EMR) was first introduced in the US and other Western countries, it was found highly upsetting by both the patients and the doctors. For the doctors, it disrupted their workflow as most of the consultation time was spent on data entry. We were all used to making line diagrams or sketches of the cornea or fundus with color coding, which was impossible in the then EMRs. The doctors spent most of the consultation time looking at the computer and hardly ever made eye contact with the patient. Patients leaving after the consultation, when quizzed, were highly dissatisfied. Artificial intelligence (AI), another disruptive technology, has now solved this problem to a large extent. Many of the EMR vendors now have incorporated AI in their software. While the doctor is examining and talking to the patient, the AI automatically enters data, creates a record of the conversation and examination, suggests diagnoses based on the record generated, and provides a handy decision support tool. AI, in that sense, is a big hit with doctors worldwide. For some elderly patients who have a challenge in under-

standing the complexities of the disease, AI is generating easy-to-understand information from the EMR in a user-friendly interface. This has allowed doctors to focus on patient care and overall satisfaction for the patient. Moreover, AI has allowed the standardization of data formats and interoperability of EMR of different vendors for seamless flow of information.

To my limited understanding, in ophthalmology, AI essentially involves training the computer software on data, e.g., the visual data, most commonly the fundus pictures of the glaucomatous optic disc, diabetic retinopathy, age-related macular degeneration, or vascular occlusion and normal fundus images as determined and labelled by the experts in the field. AI involves training the software to recognize patterns, features, and abnormalities in these images. These annotated images help the AI learn what to look for and make more precise diagnoses.

After training, the AI model is validated on a separate dataset to assess its performance. The sensitivity and specificity of the program are calculated during this phase. These days, AI software is integrated into imaging devices/cameras to assist in real-time diagnosis or image analysis. The AI is useful in other visual disciplines like radiodiagnosis, ECG interpretation, dermatology, and pathology. Besides, it can analyze and make sense of the humongous text and numerical data in no time. AI can perform data quality checks and alert doctors to potential inconsistencies or errors in patient records.

It is advantageous as a telemedicine tool for screening in inaccessible and remote areas or communities with limited access to specialists. It is not a replacement for doctors or specialists but works as an efficient assistant. The data generated by AI is, at best, suggestive and requires to be validated by a physician.

AI can search and analyze the relevant literature as part of the support system. However, Open AI chat GPT fails to provide an accurate bibliography/references. Based on a large language model, it anticipates and creates fake references that look real. The references supplied by AI as of now must be rechecked and confirmed on PubMed or similar search engines. Be aware the training data for the AI tools is somewhat outdated, so it does not give you up-to-date information. Although Bill Gates, the co-founder of Microsoft, believes that the development of AI has reached a plateau, it is just the beginning of a new disruptive era in medical practice. All current and future doctors must adopt AI tools in their practices to remain relevant.

Interview: The Legend of Ophthalmology...

A word of caution. As was with the computers, if your input data is garbage, you get garbage as output, and so is the with the AI. The input data has to be accurate to obtain accurate and pertinent results. Doctors must be able to generate high-quality descriptors and critical disease-defining keywords for their patients' ailments for the AI to create accurate and valuable information. Remember that these clinical skills will be learned only in the clinics.

AI is crucial in introducing EMR in healthcare, improving data accessibility for research, enhancing data security, improving user interfaces, automating tasks, and providing decision support. However, it's vital to implement AI solutions thoughtfully, with a focus on both patient and doctor needs, and ensure that healthcare professionals are trained in the effective use of these technologies.

Q 6. Message to Young and Budding Ophthalmologists:

a. What words of wisdom or advice would you like to share with young and aspiring ophthalmologists who are just starting their journey in the field of Ophthalmology?

b. Are there any specific values, principles, or qualities that you believe are essential for success and fulfillment in this profession?

Answer:

It would be best if you started your journey of becoming an ophthalmologist with enthusiasm, dedication, and a commitment to excellence, and you'll find it a gratifying and fulfilling career. It is a challenging, fascinating, and ever-evolving field but at the same time, full of opportunities. Now is the time to be an ophthalmologist!

1. Choose a subspecialty: You should master any one subspecialty of your choice, and there will be no reason to regret your decision. The time to be contented with being a comprehensive ophthalmologist is over. Refraction and prescribing glasses as a vocation (Your bread and butter, we were taught!) for ophthalmologists belong to the fossil age.

2. Move with the times. You have to remain up to date both with skills and knowledge. The world is moving so fast that if you are a laggard, you will become irrelevant sooner rather than later. You must attend upskilling workshops and meetings as frequently as possible in your subspecialty. Keep yourself well informed. There are plenty of online resources. Those who don't read daily get outdated very soon.

3. Keep pace with the changing technology: Half-life

of all technology-driven practices is progressively shrinking. Starting or maintaining a fresh solo practice is no longer viable. You have to learn the art of group practice with the like-minded. You must start planning your future when you still have 2-3 years. There are practice management courses offered at various conferences where you can learn the intricacies of starting a practice. Academic institutions worldwide need to pay more attention to this aspect, which must be rectified by asking seasoned people to lecture on weekends.

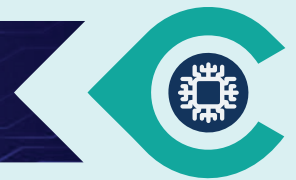
4. Only hope for an academic career if you have it: If you are desperate to get into an academic institution, it has its own challenges. The opportunities are few, and it is highly competitive. Be realistic. If you really believe you have it in you, go for it. It is not a time pass vocation. If you are curious and passionate about research, then only you should pursue this career path.

5. Know your limits: Don't be shy of seeking help when facing a challenge, either with a diagnosis or a complication. Know your limits; if the patient is not responding to your treatment, seek expert help. You should never sleep over an unsolved, challenging case. I have yet to come across an expert who will decline to help. When you refer a patient, actively seek the feedback of your referral.

6. Learn communication skills: How you communicate with the patients determines whether you succeed or fail in your practice. Learn and practice it now! No amount of advertisements in the newspapers and media can compensate for rude behavior by you or your staff. Always remember, while patients have many choices, you have no choice and depend heavily on word-of-mouth publicity by your patients and generous feedback on practice portals. Adopt an empathetic and compassionate approach towards your patients.

7. Maintain a healthy work-life balance: Practicing ophthalmology can take a heavy toll on your personal life, health, and happiness. Do not neglect your own care. A healthy body and mind can prevent physician burnout, a commonplace phenomenon.

8. Be grateful: Be grateful to your parents and teachers who helped you become what you are today. Be grateful to your patients because you exist because of them and not vice versa.



“20 years ago, all of this [AI] was science fiction. 10 years ago, it was a dream. Today, we are living it.”

Jensen Huang
Co-founder and CEO NVIDIA.

Commentary: Is “AI” just a “BUZZ” word?

“ Dr Parul Ichhpujani

Editor of the Book: Artificial Intelligence and Ophthalmology:
Perks, Perils and Pitfalls [Current Practices in Ophthalmology]
2021; <https://doi.org/10.1007/978-981-16-0634-2>

Artificial intelligence (AI) is the simulation of human intelligence processes by machines. Applications of AI include natural language processing (NLP), expert systems, speech recognition and machine vision.

It is well recognised now that an integration of ophthalmology and AI has the potential to objectively revolutionize screening, diagnosing and management patterns of various ocular diseases. AI based Applications can make great contributions to provide support to patients in remote areas by sharing expert knowledge and limited resources.

The specialty that utilizes AI the most is radiology. Majority of ophthalmic diagnoses is also image-based, so a lot depends on the use of computers for analyzing and quantifying various parameters in the images. Medical image processing using AI aims to extract features that might be difficult to assess with the naked eye. There are two types of features, the semantic feature defined by human experts, and the agonistic feature defined by mathematical equations. With increased access to big data and analytics and advancements in the neural networking, the computers have helped in learning the combinations and permutations of important features for appropriate “disease labelling”. Diagnosis and evaluation of ocular surface disease, keratoconus, glaucoma, diabetic eye disease, exudative and dry age-related macular degeneration, geographic atrophy and even retinal dystrophies as well as cataract surgery biometry, are all good targets for AI. This is being used for inbuilt softwares of various ophthalmic devices as well as in teleophthalmology.

The IDx-DR (Digital Diagnostics) became the first AI device granted FDA clearance for diabetic retinopathy screening in 2018, followed by the EyeArt system (Eyenuk), the first FDA-cleared system to screen for vision-threatening diabetic retinopathy in 2020.

Application of AI-based machine learning classifiers beyond image-based diagnoses shows promising potential, for example to evaluate high-volume electronic patient record data to detect trends/patterns in clinical features and diagnoses. AI platforms have expanded and elucidated prior hypotheses that the eye is truly the window to the rest of the body. The retina holds predictive power in evaluating cardiovascular health, anemia, multiple sclerosis, and other neurodegenerative disorders such as Alzheimer’s and Parkinson’s disease.

However, data protection and privacy, algorithmic fairness, informed consent and cybersecurity and an optimal liability framework are key issues that need to be taken into account for an ethically AI-based healthcare system.

AI is not just a buzz word. We have begun the journey “well”, although robust clinical validation is required to support general adoption of AI solutions within ophthalmology practice. AI will re-weave the fabric of clinical practice, but rest assured specialists cannot be replaced.

The “doctor-AI team” is the new effective way to be.



LET'S TALK AI with

Prof S S Pandav

AI in Ophthalmology/ Medicine

Q1: How has artificial intelligence transformed the landscape of ophthalmology, and what specific areas have seen the most significant impact?

SSP: AI is a powerful tool that has the potential to transform practice of medicine, including ophthalmology, significantly. It is already offering new ways and technology to enhance diagnosis, treatment and patient care in general. There are many areas where AI is likely to have great influence such as analysis of fundus pictures for a number of retinal disorders like diabetic retinopathy, age related macular degeneration. It is already proving useful in screening for diabetic retinopathy and glaucoma. AI based systems can provide intelligent interface for patient education where patients queries about disease and health as well as information about the services.

Q: AI can analyze vast amounts of patient data to develop personalized treatment plans. How can this approach benefit patients, and what are the limitations in personalizing treatments in this field?

AI can analyse vast amount of data than human brain can apprehend. It can find clues and patterns in the data that even a trained observer can miss. AI can consider a number of parameters, such as medical history, genetic history, life style, clinical findings, previous and concurrent illnesses etc., in an individual patient and can help arrive at correct diagnosis and suggest treatment based on unique characteristics of each patient.

On the downside, AI recommendation must be supported by clinical evidence and validated for effectiveness and safety. There would also be issues regarding its availability and cost as well as legal and ethical issues.

Q. What are some of the key ethical considerations when implementing AI in ophthalmology? How do you address concerns related to data privacy, bias, and transparency in AI algorithms designed for medical applications?

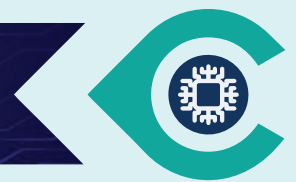
SSP: I think patient safety, privacy and fairness are key issues. We have to ensure that all patient data is handled securely and complying with the privacy regulations. Robust techniques should be used to anonymize data to hide patient identity.

Training of the AI model should be done on carefully selected datasets to avoid bias. The training data should have equitable distribution of constituent populations / groups for it to be useful. Also the patients should be informed about the implications, potential benefits and risks in choosing an AI based intervention.

Integration with Clinical Practice:

Q: How do AI solutions in ophthalmology integrate into the everyday workflow of ophthalmologists and eye care professionals?

AI is still new to us, so careful consideration is required on how to integrate AI in the clinics. It can be used in many ways. It can act as an educational tool to doctors as well as patients. It



LET'S TALK AI with Prof S S Pandav, AI in Ophthalmology/ Medicine...

can provide intelligent systems for providing information about hospital or specific diseases to the patients. AI can be integrated with the EMR system to provide AI generated insights in addition to patient records. AI can also provide real time decision support by analysing data as it is entered and provide feedback for better diagnosis and management.

Q2: Telemedicine has gained prominence in recent years. How is AI contributing to remote eye care, especially in underserved areas or during times of crisis? What do you see as the future of AI-enhanced teleophthalmology?

SSP: Tele-ophthalmology is very useful when patients cannot visit the clinic. I played a big role during COVID 19 pandemic in providing eye care services remotely. AI can be integrated into teleophthalmology to analyse images automatically and create reports from data entered at the remote location, enabling us to triage patients, plan treatment and also monitor progress.

Q: What skills or knowledge do medical professionals need to effectively work with AI tools?

SSP: Apart from familiarity with the user interface, which is important, medical professionals using AI should have basic understanding of AI concepts, how AI is integrated in their own workflow, ability to critically evaluate AI generated output and communicate it with other stake holders. They should also be aware of the data security and legal issues.

Q: How do patients typically respond to the integration of AI in their eye care? What role does patient feedback play in the development and refinement of AI systems in ophthalmology?

Integration of AI in Ophthalmology is likely to increase with time. It may be hidden to the patient, so it is the responsibility of the

Ophthalmologist to tell patients if AI based systems are used for decision making, In our setup patient response is likely to be determined by patients trust in the treating doctor and the hospital. Generally it is seen as an advancement over the existing practices, providing more accurate information more efficiently and help improve management of problem at hand. Patient feedback is very important and tells about the usability and utility of the system. It helps create systems that are user-friendly and not only align with patients expectations but are also useful clinically. Base on the patient feedback the interphase or the model itself can be fine-tuned.

Future Directions and Research:

Q: Are there any projects or developments in AI-driven ophthalmology that you are particularly excited about?

SSP: There are a number of projects, in the department, at various stages such as screening for diabetic retinopathy in the community. Application of AI in specific conditions such as retinal disorders, glaucoma is happening at a rapid pace. I am particularly excited about the study of AIs utility in a community setting to pick up various Ophthalmic conditions. It will be interesting to see if a fine-tuned model can be used screen for eye diseases where there is a lack of Health care professionals.

Case summary: Pediatric corneal transplant

“ Dr. Ashok Sharma MS, Dr. Rajan Sharma MD

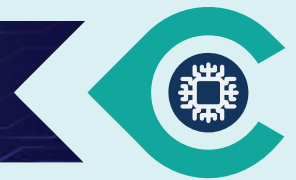
Penetrating keratoplasty a miracle for an infant with sclerocornea, microcornea and microphthalmia



Visual rehabilitation of infants and neonates with congenital corneal opacity is a challenging task. Incidence of congenital corneal opacity is 6 per 100000 new borns. Peter's anomaly is the commonest cause. Sclerocornea occurs less often, but it is associated with ocular and systemic abnormalities. Penetrating keratoplasty(PKP) in infants and neonates is not only technically difficult outcome is less favorable at long term follow-up. In sclerocornea the results are less favorable than Peter's anomaly. We describe a child who had micro-ophthalmia, micro cornea, sclera cornea, opaque cornea and nystagmus operated at 5th and 7th month of age has clear graft and normal activities at 6 years follow-up.

Case: A female baby aged 4.5 month presented with bilateral congenital corneal problem since birth. Examination under general anaesthesia, revealed micro cornea, micro ophthalmia and total opaque cornea (Sclerocornea). Child was evaluated by pediatrician, pediatric anaesthetist. Parents were counseled regarding complexity of surgery and possible outcome. They were also explained difficulties of visual rehabilitation due to amblyopia, long monitored follow-up and the need of frequent EUAs.

Child underwent PKP in the right eye on 11th October 2017. The child was given acetazolamide, digital massage and intravenous mannitol. Corneal diameters were 8.5 mm (H) and 8.0 mm (V). Host cornea was trephined using 6.0 mm diameter disposable trephine. Donor cornea button 6.5 mm was punched from endothelial side. During surgery child was hyperventilated, to keep vitreous pressure low. Donor button was sutured using sixteen 10 'o' nylon interrupted sutures. Parents were advised to instill topical steroids 10 times for 10 days, and then it was gradually decreased. Immediate post-operative period was uneventful. Child gained useful vision started recognizing objects. Encouraged by the visual outcome in right eye parents, planned to get the left eye operated. The left eye surgery was performed on 9th March 2018. Both horizontal and vertical corneal diameters were 8.00 mm. Host corneal trephination was done using a 6.00 mm diameter trephine. A 6.5 mm diameter donor was sutured. Pre operative and intra



Pediatric corneal transplant...

operative measures similar to right eye were taken. Post-operative period was uneventful (Fig 1). Child had significant improvement of vision in the left eye also.

Child has been on regular follow up. At 6 years follow-up her both corneal grafts were clear (Fig 2). Her IOP are normal. On 11th Nov 2023 her visual acuity in OD was 6/24 (-0.50/-3.75X145) and in OS 6/36 (-0.50/-4.50X180). She has achieved binocular N8 near visual acuity. She has started reading and writing comfortably (Fig 3). She is also able to play and enjoy her childhood with her friends.

Discussion: Infants and neonates with congenital corneal opacities due to sclerocornea may have associated micro-ophthalmia and micro-cornea. Major challenge in to identify the anatomical landmarks, measure diameter of cornea and size of donor cornea.

During surgery positive vitreous pressure is a major issue in neonate and infants. Also described as Vis-tergo (VAT). This has been graded 0-4 VAT. Grade 0 no pulsation grade 1, iris prolapse beyond corneal incision grade 3 and expulsive hemorrhage grade 4. In our patient VAT grade 2 was observed and managed successfully.

In our case, positive vitreous pressure was kept in control with medical measures alone. Use of Flieringa's ring, host corneal flap, preplaced mattress sutures and pars plana vitrectomy have been recommended to control VAT. We did not use any of these techniques in our patient.

We wish to emphasize that with early, meticulous surgery and monitored follow-up gratifying results of PKP may be obtained in neonates and infants with sclerocornea and multiple congenital ocular anomalies.

Sclerocornea, Microphthalmia, Microcornea : Clear Graft

R/E
H D 8.5 mm
V D 8.0 mm
Graft 6.0 mm
DOS 11.10.17
Clear Graft



L/E
H D 8.0 mm
V D 8.0 mm
Graft 6.0 mm
DOS 09.03.18
Clear Graft

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Latest advances:



Myopia, commonly known as near-sightedness has seen a dramatic rise in prevalence over recent decades emerging as a global public health concern. The global prevalence of myopia is 23% and has almost doubled over the past 20 years.^{1,2} In our country the prevalence varies from 4 to 20% in school going children. It is expected that 50% of the population would be myopic by the year 2050 and amongst these the prevalence of high myopia is expected to quadruple to 10%.¹ Besides optimal refractive correction, the progression of axial myopia itself must be tackled when we consider the retinal vision threatening complications of high myopia.

Managing Myopia In Children

“ Dr. Kajree Gupta, Prof Jaspreet Sukhija

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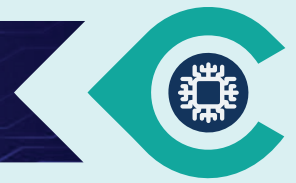
Myopia progression has been linked to heredity with higher progression in those whose parents are high myopes and if both parents are myopic. Besides genetic predisposition, younger age of onset of myopia, higher baseline refractive error and environmental factors such as low Vitamin D levels, decreased time spent outdoors, increased use of electronic gadgets and increased near work also contribute.

Workup of a patient with myopia includes detailed history including family and lifestyle history, as well as ocular examination on slit lamp and indirect ophthalmoscopy. Best corrected visual acuity, cycloplegic refraction and axial length measurement on the same machine should be done at regular intervals to detect progression. Dynamic retinoscopy is also done to detect accommodation lag. An increase in cycloplegic refractive error by > 0.5 DS in a year constitutes significant progression. Numerous strategies have been devised to combat this axial elongation.

BEHAVIOURAL INTERVENTIONS : Lifestyle modification includes encouraging outdoor activities upto 120 min/day, exposure to sunlight (60 min/day), limiting screen time, implementing regular breaks during near work tasks (20 second break after near work of 20 min by looking at a distance of 20 feet) and appropriate reading

distance (25 inches from screen). Educating patients and parents plays a crucial role to adopt these measures and decrease progression.

PHARMACOLOGICAL INTERVENTIONS : Atropine is a non-selective muscarinic antagonist drug. Low dose atropine has been demonstrated to be the most effective method of myopia control in the ATOM studies. Although the exact mechanism is not known, it is postulated to act through numerous mechanisms by inhibiting sclera fibroblast proliferation and preventing axial elongation of the eyeball. Atropine 0.01% is available commercially easy to administer, economically feasible with minimal side effects such as photophobia, blurred near vision, and minimal rebound on stopping the drug. It is used as once daily regimen at night. Though there is significant decrease in progression, some are non-responders and may require twice daily dosing. Recently, a slightly higher dose atropine 0.05% has been shown to be most effective in the phase 3 of LAMP study.⁵ It is still not commercially available but could be a part of step-up therapy in the near future.



Managing Myopia In Children...

OPTICAL INTERVENTIONS : These are based on theory of peripheral hyperopic defocus and accommodation lag as a stimulus for axial elongation and myopia progression. When a myopic patient focuses an image on the retina with appropriate refractive correction, the image is focused at the fovea, but creates a peripheral hyperopic defocus. This acts as a stimulus for eyeball to elongate, leading to myopia progression. The theory of accommodation lag is based on reduced accommodative response of myopes compared to emmetropes. Poor accommodation creates a foveal hyperopic retinal blur which again induces axial elongation of the eyeball.

SPECTACLES : Bifocals and Progressive Addition Lenses (PAL) are used in patients with accommodation lag. Though they are easily available, they have not found to be very effective. To reduced peripheral hyperopic defocus, a number of unique designs are available including spectacles with Defocus Incorporated Multiple Segment (DIMS), spectacles with aspheric lenslets, and prismatic bifocals. These are customized to the individual taking into account peripheral refraction and aiming towards peripheral myopic defocus. Although they have been found to be effective, high cost and decreased availability have limited their use.

SOFT CONTACT LENS : Bifocal and multifocal soft contact lens have different zones in the contact lens which treat the myopia and create a peripheral myopic defocus. They are available as concentric zones of rings with positive power addition or peripheral gradient design which produce constant peripheral myopic defocus which increases from centre to periphery. These have been shown to be effective in decreasing myopia progression but high cost and decreased availability with cumbersome application and removal in children have hindered their use. Extended Depth of Focus (EDOF) contact lens with myopic induced aberrations have also been used and shown to be similarly effective.

ORTHOKERATOLOGY : These are rigid contact lenses applied at night which produces a flattening of the central cornea and steepening of the mid peripheral cornea, accompanied by epithelial thickness changes which creates a peripheral myopic defocus. Daytime correction is not required to be worn after these lenses. Although they have been found to be effective, decreased availability, requirement of skilled professionals for fitting, and risk of infection have limited their use.

Considering the numerous strategies available, treatment should be started in those with documented progression. Although atropine therapy has been found to be most widely studied for its efficacy, optical treatment is also gaining wider acceptance. In non responders combination therapy or a change in modality of treatment may be required. A tailored approach depending on rate of progression, affordability, availability and ease of use after discussing with the patient is of utmost importance for compliance. Myopia progression constitutes a multifaceted challenge and effective management requires a holistic approach.

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What’s new in classification of Retinopathy of Prematurity ?

Understanding the ICROP Third Edition

“ Authors –Dr. Ashutosh Gupta, Dr. Deeksha Katoch | Advanced Eye Centre, PGIMER, Chandigarh

Retinopathy of prematurity (ROP) is a vasoproliferative disease affecting the retinal vessels of premature infants and can lead to severe visual impairment if not identified and treated at the right time (1). At birth, most preterm babies have an immature retina, defined as retinal vessels not reaching the ora serrata and the caliber of vessels is normal i.e showing a dichotomous branching pattern. After birth in 2-3 weeks, ROP starts manifesting and can be seen on fundus examination. This complex and variably progressive nature of ROP warrants a robust description of the disease and its classification into various severities, which helps clinicians to properly document, prognosticate and treat the disease.

The International Classification of Retinopathy of Prematurity is a consensus statement that creates a standard nomenclature for classification of retinopathy of prematurity (ROP). It was initially published in 1984, expanded in 1987, and revisited in 2005. The most recent revision of ICROP was published in 2021 (2). The main goals of the ICROP 3 committee were to address earlier components of the classification that were subjective and open to interpretation; discuss imaging innovations that allow identification and comparison of levels of disease severity; explain the new understanding of ROP pathophysiology with therapies that interfere with VEGF bioactivity and introduce the conditions of regression and reactivation.

Summary of key changes in the recent revision.

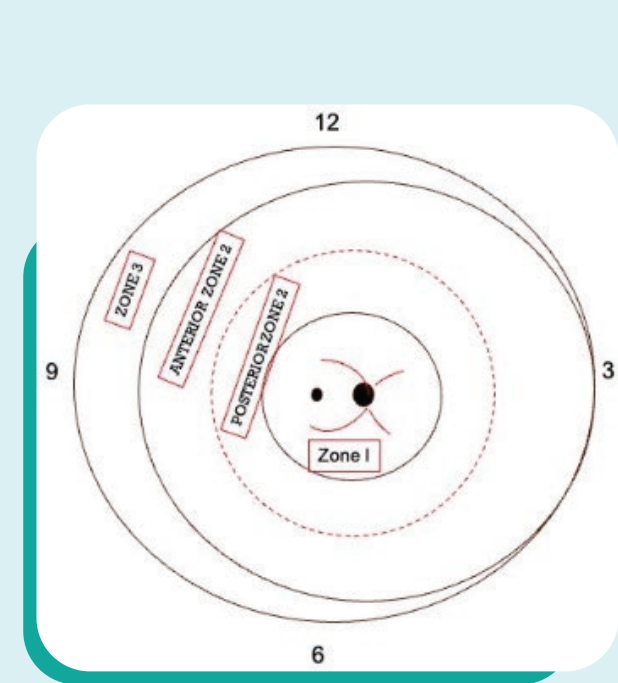


Figure1 : Representative photograph depicting zones of ROP

Addition of a new zone of ROP - ROP is mapped onto three concentric zones of the eye—zone 1 (most posterior), zone 2 (middle), and zone 3 (most anterior). ROP is classified by the most posterior zone of involvement.

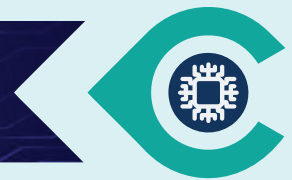
ICROP-3 added a subdivision of zone II anterior to zone I. The committee defined an area of 2 disc diameters peripheral to the zone I border as posterior zone II to indicate potentially more worrisome disease than ROP in the more peripheral/anterior zone II (Figure 1).

Definition of notch. A notch is an incursion of ROP from one zone into another. The term “notch” is added to describe the zone into which the posterior most incursion of ROP is present. (Figure 2)

For eg: A notch that extends into zone 1, with most of the vascularization in zone 2, is now labelled as “zone 1 secondary to notch.

New subclassification for stage 5: Stage 5 has been classified as

Stage 5A- optic disc is visible by ophthalmoscopy (open-funnel detachment).



What's new in classification of retinopathy of prematurity ? Understanding the ICROP Third Edition...

Stage 5B- optic disc is not visible secondary to retrolental fibrovascular tissue or closed-funnel detachment.

Stage 5C- stage 5B with anterior segment abnormalities (anterior lens displacement, marked anterior chamber shallowing, iridocapsular adhesions, capsule-endothelial adhesion with central corneal opacification, or a combination thereof).

Broader definition of plus disease. "ICROP-3 considers plus disease as a spectrum of changes in the dilation and tortuosity of retinal veins or arteries".

It now uses all of zone I to identify plus disease rather and includes the less severe form as pre-plus form.

Broader definition of aggressive ROP. Aggressive-posterior ROP was added to the ICROP in 2005 to describe a rapidly progressive form of ROP located in zone I or posterior zone II.

Aggressive ROP (A-ROP) has replaced the term aggressive posterior ROP (AP-ROP) to allow focus on the disease evolution and morphology rather than location. The hallmark of A-ROP is rapid development of pathologic neovascularization and severe plus disease without progression being observed through the typical stages. Eyes with A-ROP often demonstrate a form of stage 3 disease that may appear as deceptively featureless network of so-called flat neovascularization.

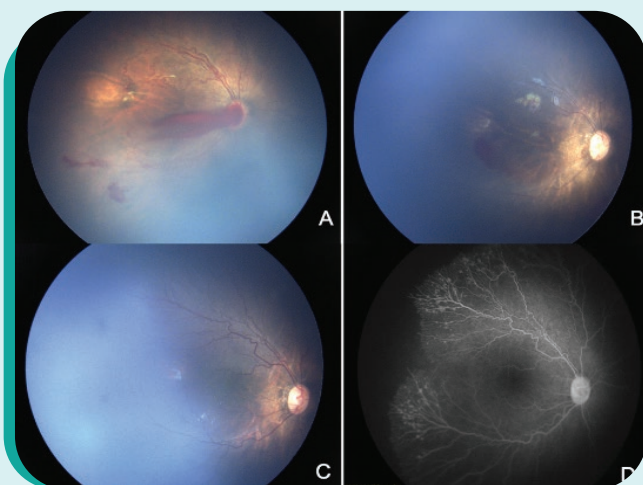
Description of reactivation. The most important addition in ICROP 3 is a description of disease reactivation. This was important due to increasing use of Anti-VEGF agents in

Therapy of ROP. ICROP-3 recognizes that reactivation is more common with Anti- VEGF than laser photocoagulation.

Signs of reactivation range from development of a new self-limiting demarcation line to reactivated stage 3 with plus disease, growth of new blood vessels where the previous ridge of ROP occurred and tufts of neovascular tissue in the posterior retina. Reactivation after anti-VEGF treatment also includes vascular dilation, tortuosity.(Figure 2)

Documentation of reactivation should specify presence and location(s) of new ROP features, noted by zone and stage using the modifier reactivated.

Clarification of regression. The first visible signs of regression are typically vascular and tend to occur more rapidly after anti-VEGF therapy (as early as 1-3 days) than after laser photocoagulation (approximately 7-14 days) or during spontaneous regression (3,4).



A preterm infant born at 30 weeks POG, Birth weight 1200g, Twin delivery with ventilation x 10 days, CPAP x 7 days, thrombocytopenia, anaemia was diagnosed with zone 1 AROP (A). The infant was treated with anti-VEGF injection following which regression of acute phase of disease (B) occurred. Reactivation in posterior zone 2 with return of vascular dilatation and tortuosity and fluorescein angiography confirming persistent avascular retina (D) which required laser photocoagulation leading to disease regression.

These signs include decreased plus disease, where components of vascular dilation and tortuosity may become uncoupled (e.g., after anti-VEGF injection, reduced vessel dilatation can occur before reduced tortuosity, which may or may not occur), and vascularization into peripheral avascular retina, which can occur spontaneously or after anti-VEGF treatment. Other clinical signs of regression include involution of tunica vasculosa lentis, better pupillary dilation, greater media clarity, regression of the ridge and resolution of intraretinal hemorrhages.

Definition of persistent avascular retina. Introduced into the lexicon by ICROP-3, persistent avascular retina (PAR) means that blood vessels failed to grow upto the ora serrata. There may be a higher risk of PAR after anti-VEGF than after spontaneous regression. (Figure 2)

What's new in classification of retinopathy of prematurity ? Understanding the ICROP Third Edition...

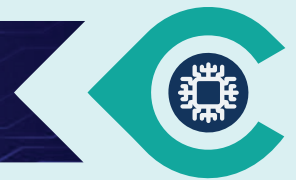
Long-term sequelae. Patients with a history of premature birth, even without a history of ROP, exhibit a spectrum of ocular abnormalities that may lead to following permanent sequelae :

- Late tractional, rhegmatogenous, or, rarely, exudative retinal detachments .
- Retinal detachment occurring in the absence of signs of ROP activity should not be designated as being the result of reactivation but rather as a sequela. (5).
- Retinoschisis from chronic traction of involuted stage, may progress without retinal detachment into the macula and may threaten visual field and visual acuity.
- Persistent avascular retina is prone to retinal thinning, holes, and lattice like changes and may be associated with retinal detachments later in life.
- Macular anomalies including smaller foveal avascular zone and blunting or absence of the foveal depression. These may be related to the degree of acute-phase ROP and may be more apparent with fluorescein angiography or OCT imaging.
- Glaucoma. Eyes with history of ROP can demonstrate secondary angle-closure glaucoma later in life.

Conclusion: ICROP3 provides guidance for future advances in the clinical management of and research on ROP based on advances in technology, pathophysiology, imaging, and an increased incidence of ROP worldwide, especially in emerging countries.

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Recent advances in Oculoplastics

“ Dr. Aditi Mehta Grewal MD | Consultant, Grewal Eye Institute, Chandigarh

Oculoplasty is the ophthalmic subspeciality which deals with management of disorders around the eyes, such as eyelids, lacrimal gland and drainage system, orbit as well as allied facial structures. The era of general ophthalmologists performing eyelid malposition surgery or dacryocystorhinostomy has been surpassed by the current era where specialty trained oculoplastic surgeons are expanding their horizons and taking this specialty to newer heights. This article highlights some paradigm shifts in management of complex oculoplastic diseases.



Surgical diagram and before after of frontalis flap advancement for severe congenital right eye ptosis

Eyelid: Ptosis

While the traditional surgeries for ptosis correction include anterior (eyelid crease) approach for levator palpebrae superioris resection in moderate ptosis, and tarso-frontal sling suspension for severe ptosis, the newer surgeries for moderate ptosis include posterior (conjunctival) approach for white line levator resection and frontalis muscle advancement flap for severe ptosis.



Before after pictures following treatment of tear trough and midface with lower G prime hyaluronic acid filler

Lacrimal: Dacryocystitis

The management of chronic dacryocystitis includes external (skin incision) approach for dacryocystorhinostomy. Nowadays, the endoscopic DCR surgeries are equivalent, if not better, with a completely scarless surgery in order to achieve anatomical and functional resolution, while avoiding any damage to the Horner- Duverney's muscle.

Aesthetics: Eye bags

Traditionally surgical eyelid blepharoplasty addresses the lower eyelid fat bags. However, as the aesthetic concerns in the younger age group are rising, non-surgical hyaluronic acid-based fillers are being employed to provide camouflage of the lower eyelid bags and achieve aesthetic results with less down time.



Before after of right floor and medial wall fracture with porous polyethylene and nasal cartilage graft. Note the correction of enophthalmos and globe dystopia

Trauma: Maxillofacial Trauma

The combined management of orbital fractures in conjunction with ENT and maxillofacial colleagues has allowed a four-hand approach from orbit and sinuses to release all trapped soft tissue and reconstruct the orbit and facial bones with correction of diplopia, enophthalmos and if needed, simultaneous decompression of optic canal as vision preserving and functional restorative surgery. Navigation guided, imaging-based surgery helps in precise localization and has enhanced the safety of surgeries.

Recent advances in oculoplastics

Orbit: Tumours and Thyroid eye disease

From the traditional eyelid split and sub brow incisions, we have moved to minimally invasive eyelid crease or transconjunctival routes to approach the lesions of the orbit. Cryoprobe assisted extraction of soft vascular tumours can help achieve complete tumour removal with scarless recovery.

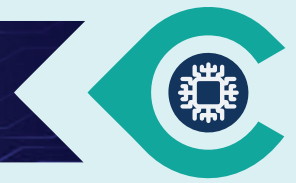
Orbital decompression for thyroid disease has been simplified with the use to ultrasonic aspirators (CUSA, Sonopet), which is similar to phacoemulsification but specifically designed for soft tissue lesions.



Platelet Rich Plasma and
Microneedling for periocular
Rejuvenation

Facial Rejuvenation: Skin to bone

Mechanical and energy-based devices have revolutionised the aesthetic practice which forms an essential component of oculoplasty. Platelet rich plasma and growth factor therapy helps address periocular pigmentation and skin texture. Intense Pulsed Light offers relief not only from dry eye but also provides a photo-facial for smoothened skin texture. Microneedling with and without radiofrequency helps address skin laxity and leads to dermal collagen induction especially in the delicate midface region.



Beyond Ophthalmology

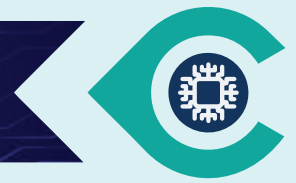


“ Dr. Manpreet Kaur
Ex-senior Resident AEC, PGIMER

Beyond Ophthalmology...



“ Dr. Swechya Neptune
Senior Resident AEC PGIMER



Beyond Ophthalmology...



“ Dr. Sonali Kaundal

Junior resident, Ophthalmology, GMCH sector 32

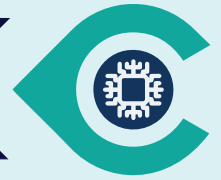
November 2023

Beyond Ophthalmology...



“ Dr. Sonali Kaundal

Junior resident, Ophthalmology, GMCH sector 32



Empathy lost; Vision gained!

“ Dr. Hitisha Mittal

Pediatric Ophthalmology, Strabismus,
Neuro-Ophthalmology Division PGI, Chandigarh

A Resident's life is a gold mine full of emotions and experiences that a non-Medico cannot fathom experiencing in a lifetime. Every day of Residency is a roller coaster of emotions, both good and bad, and its over whelming for most of us to talk about it. But acknowledging an emotion makes us only human and keeps us grounded. So, here is a small anecdote from my residency days at my Alma Mater-PGIMER, Chandigarh.

This elderly lady had just undergone a successful cataract surgery and was waiting for her ride back to the recovery room. The entire operating team was busy running between patients and medicines and machines, and her confused and anxious look caught my eye. Without putting much thought into it, I sat beside her to ask if she was okay. In that moment, it was merely an opportunity for me to sit down for a few seconds before I had to run again. But she immediately grabbed my hand and started telling me how nervous she was during the entire procedure and how eager she was to see her son's face once again.

She had bilateral brown cataract and had been suffering with poor vision for quite some time. This was her chance to see her family's happy faces again! Soon she will undergo the same procedure for her other eye and the world shall be bright again!

This brief 2-minute conversation that I happened to have with her was probably the most rewarding part of a tiring 12 Hour long on-the-toes OT.

A major part of our profession is patient counselling which is often missed out in high volume centres.

Humanity is lost in numbers and files. But In order to finish a list of 50 patients with Perfection and No room for error, we must work at an ultra-fast speed and with highest level of efficiency. Some aspects of humanity will have to be sacrificed and some threads of empathy will be broken. It might not be desirable, but it is inevitable.

There are multiple instances where we, as doctors, fail to extend the warmth that our patients desire. But is it really our fault? An empty vessel cannot feed a hungry human. Similarly, over worked and burnt-out doctors cannot radiate what they lack! But still, we try.

**And maybe, this is not the worst thing because in the end;
Even if EMPATHY is lost, VISION is gained! The pot is always half full, right?**

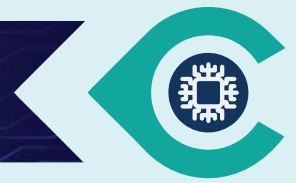
My Embroidery Journey



After tackling my NEET PG exam, I found solace in embroidery, a hobby my granny recommended to ward off result-related stress. She imparted basic stitches like stem, chain, and satin. Pinterest became my embroidery guide, unveiling a world of stitches- roses, leaves, Danish knots, French knots, and blanket stitches. My embroidery ventures extend to diverse items-socks, t-shirts, and handkerchiefs. The joy of transforming a plain tee into a uniquely patterned style fuels my desire to delve deeper into this craft. Despite diving into Ophthalmology, my dream field, embroidery remains my relaxation haven

“ Dr. Arshita Chaudhry

Junior Resident, Ophthalmology, GMCH, sector 31, Chandigarh



Behind the Lens



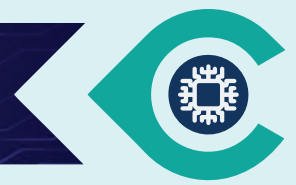
“ Dr. Rajesh Dhull

Senior Resident, GMSH Sector 16 , Chandigarh

Behind the Lens



“ Dr Khushdeep Abhaypal
Senior Resident, AEC, PGIMER, Chandigarh



Story: "The Unseen Truth: A Father's Love and a Child's Sacrifice"

“ Dr. Khushdeep Abhaypal | Senior Resident AEC, PGIMER



In the world of ophthalmology, we often witness the delicate balance between hope and reality, vision and loss. Our clinic, like many others, is a place where patients come seeking answers, solutions, and sometimes, the truth. Today, we share a poignant story that revolves around a 7-year-old boy named Aditya, who, in the aftermath of a firecracker injury during Diwali, had been hiding a profound truth from his father.

In the world of ophthalmology, we often witness the delicate balance between hope and reality, vision and loss. Our clinic, like many others, is a place where patients come seeking answers, solutions, and sometimes, the truth. Today, we share a poignant story that revolves around a 7-year-old boy named Aditya, who, in the aftermath of a firecracker injury during Diwali, had been hiding a profound truth from his father.

Last Diwali, as the sky was illuminated with colorful firecrackers, the lives of Aditya and his family were forever altered. A stray firecracker had exploded near Aditya, causing severe damage to his right eye. The family's joy turned into despair, and Aditya's father, Anand, was consumed by anger and grief, believing that someone had deliberately harmed his beloved child. He was determined to seek justice for Aditya and make the responsible party pay for the pain they had inflicted.

Amid the whirlwind of emotions, young Aditya had been telling his father a seemingly small but significant lie. He insisted that his vision in the injured right eye was perfectly normal, despite the truth being far from it. Aditya's act was an attempt to shield his father from the sorrow of knowing the extent of his injury. He believed that if his father thought everything was fine, it would ease his pain.

As an ophthalmologist, I had the privilege of meeting Aditya and his father in our clinic. The boy's bright eyes contrasted starkly with the hidden pain and sacrifice he bore. During the examination, it became evident that there was no vision in Aditya's right eye. The tragedy of his condition was that much more profound, knowing that this innocent child had been living with a disability while feigning normalcy to protect his father's heart.

When I gently broke the news to Anand, the emotional turmoil that washed over him was palpable. He had been fighting a futile legal battle for his child, believing that someone had deliberately hit his son. The helplessness of a father who had watched his child suffer was heart-wrenching. He had invested all his hope, energy, and resources into seeking justice for what he believed was a deliberate act of cruelty.

The truth that Aditya had concealed was a revelation that transcended the medical diagnosis. It was a testament to the extraordinary love a child has for his parent. Aditya had chosen to bear the weight of his own pain to protect his father from further anguish. In his young heart, he believed that pretending to be fine was the best way to ease his father's grief.

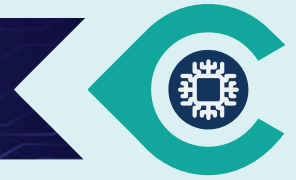
Story: "The Unseen Truth: A Father's Love and a Child's Sacrifice"...

As the truth unfolded in our clinic, it was impossible not to be moved by the depth of this sacrifice. Anand, while devastated by the reality of his son's condition, was also deeply touched by the love and selflessness that Aditya had displayed. The bond between them became stronger, and they embraced the truth together.

The moral of this story is a profound one, touching on themes of love, sacrifice, and the importance of open communication within families. Aditya's act of concealing his condition to protect his father serves as a powerful reminder of the lengths to which we might go to spare our loved ones from pain. However, it also highlights the significance of truth and honesty, even when it may be difficult or uncomfortable.

In our pursuit of justice and answers, as ophthalmologists and caregivers, we must not only focus on the physical well-being of our patients but also recognize the emotional and psychological aspects of their lives. Sometimes, the most profound insights and healing come from the most unexpected places, from the hearts of those who love and protect each other.

In the end, Aditya's story is a reminder that while love can inspire remarkable sacrifices, the foundation of any relationship, especially between a parent and a child, should be built on trust, honesty, and open communication. It is a lesson that resonates not only within the walls of our clinic but in the hearts of all who read this story.



From the editor's desk

“ Dr. Sonam Yangzes

Assistant Professor, Cornea, cataract & Refractive unit.
Advanced Eye Centre PGIMER, Chandigarh

Dear COS Community,

It is with great excitement and enthusiasm that I assume the role of the new editor for the COS newsletter. As we embark on this journey together, I want to extend my heartfelt gratitude to all the teachers and seniors who have laid the foundation for the remarkable community that we are privileged to be a part of.

The COS community is not just an assembly of individuals; it is a tapestry of diverse minds, perspectives, and talents that come together to form something truly extraordinary. In the spirit of unity and collaboration, We are committed to fostering an environment that encourages better interaction and communication among all members.

Our newsletter will be more than just a source of information; it will be a platform for sharing ideas, innovations, art, and knowledge. Each edition will aim to showcase the incredible talent and brilliance within our community, creating a space for inspiration and collaboration.

In the coming editions, we will feature stories of success, creativity, and resilience. We will celebrate the achievements of our members, share insights, and provide a platform for voices that deserve to be heard. I invite each of you to actively participate in this collective journey

Let this newsletter be a testament to the strength of our community, a medium through which we can bridge gaps, connect hearts, and inspire minds.

Looking forward to the exciting times ahead...