

79th AIOC 2021: All India Ophthalmological Society

PHACOEMULSIFICATION IN CHALLENGING SITUATIONS: MANAGEMENT OF POSTERIOR POLAR CATARACTS

Dr Angshuman Goswami, Kolkata

In his presentation, Dr Angshuman discussed the general features of posterior polar cataract and mentioned that it is congenital and a dominantly inherited disorder with variable expressivity. It can be sporadic, with a positive family history in 40-55% of the cases.

The symptoms include light scattering, increasing glare, difficulty in reading fine prints, difficulty in vision in bright light. Dr Angshuman discussed the significance of posterior polar cataract and said that it is located at a point where it affects a person's vision earlier than in other types of cataract. There is strong adherence of the opacity to the weak posterior capsule. Additionally, there is a high rate of intraoperative PC rupture, he emphasized. He discussed the preoperative examination which includes usual cataract work up, slit lamp biomicroscopy, ultrasound biomicroscopy (UBM), anterior segment optical coherence tomography (OCT), and Pentacam. While discussing the preoperative counseling, he stated that there is a possibility of the nucleus dropping intraoperatively due to a posterior capsule rupture. It has a long operative time and the visual recovery is delayed. He also discussed the surgical techniques, and explained the inside out technique of Vasavada with transverse trenching. He also elaborated on the important surgical dos and don'ts.

EPITHELIAL TO MESENCHYMAL TRANSITION IN RETINOBLASTOMA TUMOR: A NEW INTERVENTION TARGET

Dr Gagan Dudeja, Bengaluru

Presenting a study, Dr Gagan Dudeja said that the findings of the study demonstrated for the first time the role of ZEB1 and ABCB1 in epithelial mesenchymal transition (EMT) and drug resistance in retinoblastoma tumorigenesis. EMT suppression can halt metastasis propensity and reverse chemoresistance in retinoblastoma. He said that it is a new therapeutic intervention target since antifibrotics are already clinically available. There is a role of ZEB1 transcription factor and Wnt signalling pathway in driving EMT in retinoblastoma. The currently available drugs and small molecules can be repurposed for blocking EMT, he further said.

EMT is associated with tumor metastasis and drug resistance in cancers. Dr Dudeja undertook a study, co-authored by Dr Thirumalesh MB, to evaluate the EMT markers in retinoblastoma and *in vitro* model and understand the signalling mechanism associated with retinoblastoma metastasis.

MANAGEMENT OF SEVERE CORNEAL THINNING AND PERFORATIONS IN ADVANCED PUK PATIENTS USING BANANA GRAFTS

Dr Amit Gupta, Chandigarh

Dr Amit Gupta spoke about peripheral ulcerative keratitis (PUK), which is a corneal disorder of grave concern. He said that PUK often progresses circumferentially and may progress to severe corneal thinning or melt leading to perforation and cause considerable ocular morbidity. Larger peripheral melts and perforations are much more challenging, while smaller perforations are easier to manage surgically.

Recurrences are commoner compared to scleritis alone and also occur earlier (within 2 years). Most patients require surgical intervention. He mentioned various available surgical options for PUK such as conjunctival resection/peritomy, cyanoacrylate adhesive, conjunctival flaps, amniotic membrane grafts, tectonic lamellar graft, penetrating corneal grafts and patch grafting. He further said that sutureless (fibrin glue-assisted) semi-annular tectonic lamellar grafts are effective and they are also relatively simple to perform and have excellent long-term outcomes.

PATTERN ERG

Dr Bibbhuti Kashyap, Ranchi

Dr Kashyap discussed about pattern ERG (pERG) during his presentation. He stated that pERG assesses the central retinal response to a structured nonluminance stimulus. It provides useful information in the distinction between macular dysfunction and optic nerve dysfunction.

He explained that the net retinal illumination remains constant and only a redistribution of the pattern of light and dark areas is made. He discussed the types of pERG, namely transient pERG and steady state pERG. He detailed the requirements for ERG as: positioning

of patient at 100 cm, light adapted patients, nondilated pupils, fixation (excessive blinking to be avoided), appropriate optical correction for 100 cm viewing distance, and 100-300 artefact free sweeps.

He discussed in detail about different electrodes. In terms of reporting, he emphasized that it would be ideal if each laboratory has its set of normal values for its own equipment and population. He mentioned that pERG is detectable in NPL eyes and helps distinguish central macular dysfunction from peripheral macular dysfunction. Other uses include early glaucoma detection, ocular hypertension, monitoring drug toxicity and monitoring therapeutic success.

THERAPEUTIC CARE AFTER CATARACT SURGERY

Dr Shreyas Ramamurthy, Coimbatore

During his presentation, Dr Shreyas discussed about the ESCRS study which showed a 5- to 7-fold decrease in endophthalmitis rates. However, a major criticism of the study has been a high incidence of endophthalmitis in the control group (0.35%). He mentioned that a study by Sharma et al (2015) evaluating intracameral (IC) cefuroxime found no difference in the incidence of endophthalmitis after cataract surgery.

Dr Shreyas mentioned that IC moxifloxacin is a fourth-generation quinolone with a wide-spectrum of activity against Gram-positive and Gram-negative organisms. It is preservative free and is commercially available in India.

He discussed a study by Haripriya and colleagues (2016) stating that there were 0.08% cases of postoperative endophthalmitis in the group that did not receive IC moxifloxacin (charity), 0.02% cases in the group that received IC moxifloxacin (charity) and 0.07% cases in the private patients' group that did not receive IC moxifloxacin. He detailed another study by Haripriya et al (2017) which noted that without IC moxifloxacin, PCR increased the endophthalmitis rate to 0.48%, while IC moxifloxacin reduced the endophthalmitis rate with PCR to 0.21%.

Comparing moxifloxacin with cefuroxime, Dr Shreyas said that 1 mg/0.1 mL cefuroxime is insufficient to kill sensitive *Staphylococcus aureus*. 0.5 mg moxifloxacin is sufficient to kill resistant *S. aureus*.

Dr Shreyas outlined the complications of postoperative inflammation after cataract surgery stating that the early complications include posterior synechiae, pupillary block and acute rise of IOP, while late complications

include posterior capillary opacity and cystoid macular edema.

He mentioned that 0.1% dexamethasone is one of the strongest anti-inflammatory agents. Discussing about the combination of moxifloxacin and dexamethasone, he said that using combination therapy has several advantages, including improved patient compliance, reduced medication cost, decreased complexity of dosing, increased likelihood of receiving proper dosage and positive impact on clinical outcomes.

PIGMENTED FUNDUS LESIONS

Prof Bertil Damato, UK

Early treatment of choroidal melanoma enhances any opportunities for conserving vision, the eye and life itself, but it can be difficult to distinguish small melanomas from nevi. Delivering a talk at the ongoing AIOC, Prof Bertil Damato said that the likelihood of malignancy in melanocytic choroidal tumors can be estimated according to: Mushroom shape, Orange pigment, Large size, Enlargement and Subretinal fluid (MOLES). Each of these features is scored between 0 and 2 and tumors are categorized as common nevus, low-risk nevus, high-risk nevus and probable melanoma according to whether the sum total of the 5 scores is 0, 1, 2 or 3 or more, respectively.

He further recommended that the MOLES acronym and scoring system should avoid patients with benign nevi from undergoing unnecessary care while preventing delays in the diagnosis and treatment of patients with malignant melanoma.

AJCC STAGING FOR RETINOBLASTOMA: ONE SYSTEM PREDICTS BOTH GLOBE SALVAGE AND PATIENT MORTALITY

**Dr Paul T Finger, Ankit Tomar, USA, AJCC
Ophthalmic Oncology Task Force**

The American Joint Committee on Cancer (AJCC) is the only classification validated to predict both metastasis and globe salvage, emphasized Dr Paul T Finger in his presentation. It accounts for the extent of both intraocular and extraocular retinoblastoma, he said. AJCC includes TNMH - characteristics of the Tumor, lymph Nodes, Metastasis and Heritable trait. AJCC is periodically updated to include the latest medical evidence. This staging system is accepted by both the AJCC and the Union for International Cancer Control (UICC), joining ophthalmic oncology into the world of general oncology, he added.