

Video Presentation 1

10 June 2006, Saturday, 1600 - 1745 Hrs

Room 312, Level 3

V3001

USING THE SOVEREIGN WHITESTAR FOR BIMANUAL MICROINCISION PHACOEMULSIFICATION OF CATARACTS IN CHALLENGING AND COMPLICATED CASES

I. HOWARD FINE¹

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Purpose: To review specific cases of cataract surgery in which bimanual microincision phacoemulsification provides the best clinical outcomes.

Method: Certain cataract cases treated with coaxial phacoemulsification do not yield optimum clinical results. Such cases include posterior polar cataract, posteriorly subluxed cataract, mature cataracts with zonular dialysis, cataracts with posterior capsule rupture, cataracts with iris coloboma and zonular defect and refractive lens exchanges in patients who underwent previous RK.

Results: Case studies and patient outcomes using bimanual microincision phacoemulsification to treat various challenging and complicated cataracts and patients who've been previously treated with laser vision correction procedures will be analyzed.

Conclusion: Numerous complicated cataract cases are best handled through bimanual microincision phacoemulsification. Determining which cases are not suitable for coaxial phaco is key to achieving optimum clinical outcomes.

V3002

MODIFIED PHACO PRECHOP

RAMACHANDRAN K NAIR¹, MINU MATHEW MATHEN¹

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Synopsis: Phacoemulsification using least ultrasound energy is least harmful to the corneal endothelium. This course will describe a new technique of modified phaco prechop (MPP) in which soft to firm cataracts can be divided in to smaller pieces without the use of phaco energy. The already described phaco prechop used a special instrument to do the prechopping. In the MPP technique a new phaco chopper is used to perform the prechopping along with the phaco needle without the use of ultrasound energy. So there are no new instruments involved when compared to standard coaxial phacoemulsification. Chopping soft cataracts in standard phaco chop technique is difficult because maintaining a good hold on the nucleus with the phaco needle is not easy due to the softness of the nucleus. This problem is also solved in the MPP

technique. The procedure will be described in detail in this video. A comparison between standard phaco technique and MPP technique in similar grades of cataracts will be presented highlighting the learning curve, complication rates, effective phaco time and the average phaco energy used.

V3003

COMBINED SUTURELESS SURGERY – DO IT ONCE, DO IT RIGHT

JONY CJ CHANG¹, YH CHANG¹, SY CHIANG¹

Tri-Service General Hospital, Taipei, Taiwan¹

Purpose: To describe our clinical experiences and to investigate the feasibility of clear corneal phacoemulsification combined with transconjunctival sutureless vitrectomy (TSV), combined sutureless surgery (CSS), for patients with both clinically significant cataract and vitreoretinal diseases.

Method: Patients with clinically significant cataract and vitreoretinal diseases were enrolled in this study. Similar cases in diagnosis and severity were matched and randomly assigned to the study or the control groups. CSS was performed on the patients in the study group. Patients in the control group underwent combined surgery with clear corneal phacoemulsification and the existing 20-gauge vitrectomy system, providing a comparison between the control and the study groups regarding duration of the surgical procedures and postoperative ocular irritation. The additional outcome measures in the study group were pre- and post-operative best corrected visual acuity (BCVA), intraocular pressure (IOP), and intra-operative and post-operative complications.

Results: There is no case in the study group required sutures to close the corneal, conjunctival, or scleral opening. Mean total operative time was significantly greater for the control group (44 minutes and 8 seconds) than for the study group (36 minutes and 9 seconds). Compared to the control group, foreign body sensation in patients of the study group was considerably reduced and was clinically significant. Postoperatively, the BCVA improved by 2 or more lines in 8 eyes (80%). The mean preoperative IOP was 16.1 mm Hg (ranging from 13 to 19.8 mm Hg), whereas the mean IOP on the first postoperative day was 12.7 mm Hg (ranging from 8.5 to 16.4 mm Hg).

Conclusion: CSS appears to be quite efficient, practical and safe. Therefore, this type of procedure would be a good option for selected cases with both cataract and vitreoretinal diseases.

V3004
BIMANUAL PHACO WITH A DIFFERENCE

JOHN JULIAN SMILES¹

Corinna Eye Clinic, Canberra, Australia¹

Purpose: To demonstrate the author's response to the challenge of a subluxating lens during cataract surgery.

Method: Charles Kelman's technique of posterior levitation is employed and surgery proceeds using a variation of bimanual phaco.

Results: An anterior chamber lens is successfully implanted.

Conclusion: Posterior levitation is an effective technique when confronted with a sinking cataract. Once stabilised in the safe zone a novel method is presented of proceeding to controlled emulsification and implantation.

V3005
CAPSULAR TENSION RING — AN ESSENTIAL TOOL FOR PHACOEMULSIFICATION

NAVNEET SHAMSUNDAR TOSHNIWAL¹

Navneet Hospital, Solapur, India¹

Purpose: To demonstrate the significance of CTR in zonular weakness noticed or occurred during Phacoemulsification.

Method: Duration of study is from September 2003 to August-2005. Total no of 1813 Phacosurgeries done in Navneet Hospital, Solapur, India. Total CTR used -61, CTR used in preexisting subluxated cataract -24, CTR used in zonular weakness noticed or occur during surgery -37. Simple CTR used by Macpherson forcep, by Injector or shooter. Sizes – Diameter of 12 mm compressible to 10 mm i.e. 12/10 or 13/11 or 14.5/12 Ctr is introduced before Nucleus delivery, during Nucleus management, I/A of epinucleus and cortex, after insertion of IOL.

Results: All patients who were successfully implanted with CTR, achieved stabilization and recentration of capsular bag with well centered PCIOL in bag. In two cases, 2 CTR has been inserted in the same case. Direction of CTR is extremely important which depends on site of zonular weakness. Many of these situations and all technique of inserting CTR has been described in detail. There is no specific complications related to CTR.

Conclusion: CTR is one of the Essential Tool for phacoprocedure. Injector Technique of introducing CTR has changed the scenario of complicated phacoprocedure. [CTR should be kept ready in OT prior to all Phacoemulsification surgeries].

V3006
IS MICS SUITABLE FOR ROCK HARD, MATURE AND HYPERMATURE CATARACTS?

PURENDRA BHASIN¹, PRIYAMVADA BHASIN¹

Ratanjyoti Netralaya, Gwalior, India¹

Purpose: Micro Incision Cataract Surgery or Bimanual phaco has brought with it a debate whether the technique is a successful in all grades of cataracts with its full advantages as is performing the case by routine coaxial phaco.

Method: Bimanual phaco is performed in grade 4 nucleus hardness, in mature and hyper mature cataracts. The technique is found to be superior to the coaxial phaco in terms of followability and control during different steps of phaco. This is possible because of the small tight incision and separation of the irrigating and aspirating systems in two hands. The technique of making incision, capsulorrhexis, hydro procedures and nucleus fragmentation is highlighted in the video.

Results: MICS can be successfully performed in Mature, Hyper-mature and even in Rock Hard cataracts.

Conclusion: Micro Incision Cataract Surgery, a very promising option in phacoemulsification is a suitable for various kinds of cataracts.

V3007
SILICONE-COATED SOFT I/A TIP FOR CATARACT SURGERY

UDAY DEVGAN¹

UCLA Jules Stein Eye Institute, Los Angeles, California, United States¹

Purpose: The video will illustrate the many benefits of a silicone-coated soft Irrigation/Aspiration (I/A) tip for cataract surgery.

Method: Intra-operative video is shown to highlight the benefits of using a silicone-coated soft I/A tip during cataract surgery. The benefits are due to the soft nature of the silicone-coating and the gentle, yet gripping surface that it provides.

Results: The soft I/A tip allows a greater margin of safety since it prevents metal from contacting the posterior capsule and is therefore less likely to rupture it. The gripping nature of the tip allows it to be used for more efficient removal of lens cortex as well as for manipulation of the intra-ocular lens.

Conclusion: The silicone-coated soft I/A tip provides an increased margin of safety and more utility during cataract surgery.

V3008
WHEN THE CAPSULE BREAKS — 25 GAUGE PARS PLANA ANTERIOR VITRECTOMY FOR THE CATARACT SURGEON

UDAY DEVGAN¹

UCLA Jules Stein Eye Institute, Los Angeles, California, United States¹

Purpose: The video teaches the technique of using small incision, 25 gauge instrumentation to perform a suture-less pars plana anterior vitrectomy when the capsule breaks during cataract surgery.

Method: Performing a pars plana anterior vitrectomy is physiologic since it draws the prolapsed vitreous back into the vitreous cavity where it belongs. Performing a pars plana anterior vitrectomy with the 25 gauge small incision instruments provides for excellent vitreous clean-up while being minimally invasive. It can be performed with no sutures, no cautery, and no need for an MVR blade.

Results: The 25 gauge small incision instrumentation allows for complete clean-up of prolapsed vitreous, and performing it via the pars plana is a physiologic technique that aids in preventing further vitreous prolapse.

Conclusion: Vitreous prolapse through a broken capsules in cataract surgery can be effectively managed using 25 gauge small incision instruments to perform a pars plana anterior vitrectomy.

V3009
DECREASING PHACO TIME & ENERGY WITH ADVANCED POWER MODULATIONS

UDAY DEVGAN¹

UCLA Jules Stein Eye Institute, Los Angeles, California, United States¹

Purpose: To illustrate how advanced phaco power modulations can decrease phaco time and energy during cataract surgery.

Method: Animations will be shown to explain the concept of basic and advanced power modulations, including pulse, burst, hypersettings, duty cycles, and rise-times. Methods to implement these upgrades into surgical techniques will be illustrated.

Results: Decreasing the phaco time and energy leads to less corneal endothelial cell damage, less inflammation, and less corneal edema. This enables the patient to experience clear vision immediately after surgery.

Conclusion: Advanced phaco power modulations can be used to effectively decrease phaco time and energy in cataract surgery.

V3010
CUSTOM SHAPED “TOP HAT” PENETRATING KERATOPLASTY USING A FEMTOSECOND LASER

DOUG KATSEV¹, FRANCIS PRICE², WILLIAM CULBERTSON³, ROGER STEINERT⁴

Sansum Santa Barbara Medical Foundation, Santa Barbara, United States¹, Price Vision Group, Indianapolis, United States², Bascom Palmer Eye Institute, Miami, United States³, University of California Irvine, Irvine, United States⁴

Purpose: To demonstrate and evaluate a novel procedure: top hat shaped penetrating keratoplasty performed using a femtosecond laser.

Method: A multi-center clinical evaluation of the use of IntraLase Femtosecond Laser to perform advanced shaped penetrating keratoplasty was performed. Candidates for penetrating keratoplasty were enrolled in this IRB approved clinical study. Recipient and donor corneas were resected by first performing a large diameter (8.5-9.5 mm) cylindrical cut from the anterior chamber into the stroma. This was followed by a horizontal lamellar resection at approximately mid corneal depth and a smaller diameter (7.0-8.5 mm) cylindrical cut from the lamellar plane into the corneal surface. Sutures were then placed to secure the graft. Visual outcome and topographies were collected.

Results: IntraLase femtosecond laser was effective in creating resections even at deep tissue and through non-transparent corneas. After the laser procedure, the central corneal tissue could be separated very easily from the corneo-scleral rim. Suturing the graft to the recipient eye was straightforward and simple due to the matching edges of the tophat configuration. Wound leakage was not a problem because of the self-sealing properties of the wound edge.

Conclusion: Shaped penetrating keratoplasty using femtosecond laser is a feasible procedure. This procedure provides patients with more stable structural result and yield more rapid and better visual rehabilitation compared to PK.

V3011
THE SANDWICH TECHNIQUE FOR IRIS-FIXATED PHAKIC INTRAOCULAR LENS IMPLANTATION

BURKHARD DICK¹

University of Bochum, Germany¹

Purpose: To describe a new technique of implantation of the Artisan/Verisyse phakic intraocular lens (PIOL).

Method: After PIOL insertion into the anterior chamber, a bolus of a high viscosity ophthalmic viscosurgical device (OVD) is placed over the optic, separating it widely from the endothelium.

Results: The technique decreases the chance of endothelial damage during enclavation.

Conclusion: A bolus of a high viscosity OVD placed on the anterior surface of the Artisan/Verisyse PIOL may make enclavation safer.

V3012

TIPS AND TRICKS FOR IMPLANTATION OF THE FOLDABLE IRIS-FIXATED PHAKIC IOL

BURKHARD DICK¹

*University of Bochum, Germany*¹

Purpose: The video demonstrates the surgical procedure of the implantation of foldable iris-fixated phakic intraocular lenses for the correction of myopia.

Method: Using animations and surgical scenes the procedure is shown.

Results: By adopting these tricks and tips intraocular surgery is facilitated.

Conclusion: The video helps the experienced as well as the beginning surgeon to enter the field of foldable phakic lens implantation.

Video Presentation 2 – Best of Video Presentations

11 June 2006, Sunday, 1600 - 1730 Hrs

Room 312, Level 3

V3013

BIMANUAL PHACO-CHOP FRAGMENTATION FOR DROPPED NUCLEUS

BIJU RAJU¹, **NSD RAJU**¹, **ANJU S RAJU**¹

*Ranjini Eye Care, Cochin, India*¹

Purpose: This video presentation describes a new bimanual technique to remove dropped nucleus.

Method: Using the dual mode infusion illumination cannula adequate vitrectomy is done. The nucleus was then lifted up with the fragmatome and then chopped using a standard chopper. The resultant smaller nuclear fragments are removed bimanually using the framatome and the chopper. Perfluorocarbon liquid was used to protect the macula from the impact of the nuclear fragments in one case with very hard nuclei.

Results: This method of bimanual phacofragmentation was used to remove dropped nuclei in 5 eyes. These eyes had undergone a complicated phacoemulsification procedure and primary intraocular lens implantation. One case had a grade 4 nuclei. 2 cases had 2 quadrants of the nuclei and one case had a single grade 5 nuclear

fragment. The postoperative visual acuity ranged from 20/25 to 20/80. Two patients had vision less than 20/40. One of them had chronic CME and macular hole and the other had dry age related macular degeneration. There were no intraoperative complications. The surgical time required is less than the conventional technique.

Conclusion: Bimanual phaco chop fragmentation is safer and faster than the conventional phacofragmentation technique.

V3014

AN INTERESTING INTERMITTENT PROPTOSIS – ONCE IN A LIFE TIME EXPERIENCE

ARNAB BISWAS¹, **PARTHA BISWAS**¹

*Anandalok Hospital, Kolkata, India*¹

Purpose: Seeing is believing. Have you ever seen a eye ball coming out and going back in a willfull dynamic oscillatory motion? Is it a myth or a reality? Well, my friends this is indeed true. I would like to share my experience on this very strange and rare phenomenon.

Method: A young man walks into our outpatient department with complaints of intermittent diplopia while eating. We examine and investigate the patient. What we find is a dermoid cyst in the temporal fossa, which has eroded through the lateral orbital wall into the orbital cavity. Thus when the man contracts his temporalis muscle during mastication, it presses on the dermoid, the fluid filled cyst transmits the pressure into the orbital cavity which causes a dramatic intermittent proptosis and diplopia.

Results: We surgically explored the cyst, traced the opening in the lateral orbital wall, enlarged the opening and removed the cyst in toto. A post operative CT scan reveal the total removal of the dermoid. Over the next two weeks the patients symptoms totally disappear and he begins a new life and a new journey.

Conclusion: This is a once in a lifetime experience, if not once in many lifetime. I do not know if I will ever come across this case again. You will really cherish this video of how this man presented to us, what we planned, and how we managed him. Just have a look at this video.

V3015

POSTERIOR POLAR CATARACT PHACOEMULSIFICATION: A NEW CONCEPT

ROHIT OM PRAKASH¹

*Dr. Om Prakash Eye Institute, Amritsar, India*¹

Purpose: The purpose of the study is to evaluate the efficacy of a redefined surgical technique in the management of posterior polar cataract phacoemulsification based on physics principles.

Method: The present study was conducted on eighty-one consecutive patients of posterior polar cataract with no preexisting capsular defect. In this video and animations assisted presentation, the author will present based on vector laws of physics how the technique becomes more predictable in managing posterior polar cataracts. Change in hydrodissection technique with no hydrodelineation puts less stress on the thinned out posterior capsule [PC], which would be amply demonstrated, based on physics principles. The technique for division of the nucleus and its rotation, management of nucleus having variable nuclear sclerosis would be shown with animations and videos. The relevance of dry aspiration of the cortex would be explained.

Results: This understanding of the phacodynamics acting on the PC helps us to evade the fallacy which most share that leaving the epinucleus during hydrodelineation falsely protect the PC. The physics principles substantiated by the surgical results prove that the large shearing force predisposes the PC rupture rather than protecting it.

Conclusion: The excellent results of this method of posterior polar cataract phacoemulsification based on simple physics principles adequately vindicates the need for the change in approach to posterior polar cataract phacoemulsification.

V3016

MECHANICAL DELINEATION IN SITU — A NEW APPROACH FOR HARD CATARACTS

KUMAR J DOCTOR¹

Doctor Eye Institute, Mumbai, India¹

Purpose: To make Phacoemulsification safe, easy and always reproducible in dark, brown and black cataracts.

Method: Hydro procedures are essential to make Phacoemulsification safe. Hydro delineation is separation of the epinucleus from the dense endo nucleus which further reduces the phaco mass. Hydro delineation is not possible in all cases as the epinucleus is adherent to the endonucleus. A new technique to mechanically separate the epinucleus from the endonucleus with the chopper is demonstrated in the video. This is safe effective technique to create an epinuclear cushion in the bag to protect the posterior capsule. The technique can be easily approved in all types of cases.

Results: Phacoemulsification with this new approach of mechanical delineation in situ is always reproducible making the procedure safe.

Conclusion: Mechanical delineation in situ with the help of a sharp tip chopper to create an endonuclear capsular bag, performed in black cataracts prevents all the complications in such cases. This technique is easy and always reproducible.

V3017

MANAGEMENT OF IRIS PROLAPSE IN CATARACT SURGERY

UDAY DEVGAN¹

UCLA Jules Stein Eye Institute, Los Angeles, California, United States¹

Purpose: To explain how the fluid and pressure dynamics are responsible for iris prolapse during cataract surgery, and how to effectively manage iris prolapse.

Method: Intra-operative video along with anatomical animations will illustrate that the prolapse of the iris through the surgical incision during phacoemulsification occurs when there are mismatched pressure and fluid gradients within the eye.

Results: By equalizing the pressure gradients, the flow of fluid and movement of ocular structures such as the iris can be effectively minimized. While other factors such as wound architecture and iris tone/position will also contribute, the primary cause of iris prolapse is the mismatched pressure gradients. The physics behind this is explained in the video and techniques to manage iris prolapse in even the most difficult cases are addressed.

Conclusion: Iris prolapse during cataract surgery can be effectively managed by equalizing the fluid and pressure gradients within the eye.

V3018

TRYPAN BLUE ASSISTED DEEP SCLERECTOMY

AJITA SASIDHARAN¹, REDDY JK¹, MINIJA CK¹

Sankara Eye Centre, Coimbatore, India¹

Purpose: To demonstrate the outflow of aqueous humor through Schlemm's canal intraoperatively by injecting trypan blue dye into the anterior chamber through a paracentesis and noting the egress of trypan blue stained aqueous through the trabeculo-Descemet's membrane during deep sclerectomy surgery for open angle glaucoma.

Method: Deep sclerectomy is a very successful alternative to trabeculectomy in primary open angle glaucoma and is a non-penetrating surgery with low complication rate. A fornix based conjunctival flap is made and a superficial flap of 1/3 scleral thickness of 4 × 4 mm size is made. A parabolic shaped deep scleral flap is dissected of near full thickness, 1mm within the boundaries of the superficial flap. On dissecting, the dark underlying uveal tissue is seen. On further anterior dissection the outer wall of the Schlemm's canal is removed and the cut end of the Schlemm canal is seen. The lining membrane, the inner wall of Schlemm's canal is peeled off. A paracentesis is made and 0.03% trypan blue is injected into the anterior chamber. The egress of trypan stained aqueous through Schlemm's canal is confirmed by the staining of a

white cellulose sponge with the dye. Post operatively the trypan staining of the anterior lens capsule was seen, which disappeared after the third post operative day.

Results: The egress of trypan blue proves the egress of aqueous intraoperatively through the trabeculo-Desemet's membrane. The patient had good control of IOP post-operatively with a pale diffuse functioning bleb.

Conclusion: Deep sclerectomy is a very successful low risk procedure in POAG. Use of trypan blue intraoperatively confirms efficacy of the procedure. The absence of staining could allow the surgeon to convert to a penetrating filtration procedure.

V3019

TORIC IMPLANTABLE CONTACT LENS FOR CORRECTING HIGH MYOPIC ASTIGMATISM

SANG-HYUN CHO¹, CHUN-GI JOO¹

*Ophthalmology, Medical College, Catholic University of Korea, Seoul, Republic of Korea*¹

Purpose: To introduce implantation of Toric implantable Contact Lenses for correcting high myopic astigmatism.

Method: In this video, we introduce the efficacy of Toric implantable Contact Lenses for correcting high myopic astigmatism and the surgical techniques of implanting Toric implantable Contact lens.

Results: By implantation of Toric implantable Contact lenses, we have got successful result in correcting high myopic astigmatism.

Conclusion: In high myopia patient who cannot get a refractive surgery using laser, A implantation of Toric implantable Contact lenses can be a substitute to correct astigmatism as well as high myopia.

V3020

WHAT'S BEYOND THE BLUE-BLOCKED LIFE?

BURKHARD DICK¹, ANJA HERRMANN¹, THOMAS KAUFFMANN¹

*University of Bochum, Germany*¹

Purpose: To demonstrate the visual impression at different illuminations with "blue" light"-blocked IOL using special camera technology.

Setting/Venue: University Eye Hospital Bochum, Germany.

Methods: Two identical high-resolution broadcast cameras were used simultaneously. An original lens from Hoya with its specific UV-blocker was used in one camera, while the original blue-blocking lens was inserted in the optical pathway of the second camera. Both cameras operate simultaneously, with the image of the non-tinted IOL on the left and the image of the yellow IOL on the right.

Results: The yellow IOL reduces some optical chromatic aberration by blocking blue light. A slight enhancement of contrast sensitivity and a reduction in glare was observed with the yellow IOL. Only distinct differences in the image of the non-tinted IOL and the yellow IOL were detected.

Conclusions: Blue-light blocking IOLs trade off rod-mediated visual function for protection against retinal phototoxicity.

V3021

PEDIATRIC CATARACT SURPRISES

GERD U. AUFFARTH¹, TANJA M. RABSILBER¹, MIKE P. HOLZER¹, DRAGANA VUCIC¹, ANNE C HUNOLD¹, MARIA SANCHEZ¹

*Dept. of Ophthalmology, University of Heidelberg, Heidelberg, Germany*¹

Purpose: To show some surprises and complications in pediatric cataract surgery and how to overcome them.

Method: Special case reports on unusual intraoperative findings including some tricks will be shown. A capsulorhexis technique consisting of anterior capsule staining with vision blue in order to reduce anterior lens capsule tension resulting in a very controllable "normal" CCC.

Results: In more than 30 consecutive cases the new CCC technique was successful. The video shows cases of pupillary membrane, membranaceous cataract and several cases of capsulorhexis improvements with this new technique.

Conclusion: Pediatric cataract surgery is demanding but very rewarding. With these new CCC techniques described here, cataract surgery in this age group is very successful.

V3022

THE OSTEO-ODONTO KERATOPROSTHESIS FOR END-STAGE CORNEAL DISEASES — A TOOTH FOR AN EYE

DONALD TAN¹, JULIAN THENG¹, ANDREW TAY², ERIC LYE², ANAND PARTHASARATHY¹, ANDREA LIU³

*Singapore National Eye Centre, Singapore*¹, *National Dental Centre, Singapore*², *Singapore Eye Research Institute, Singapore*³

Purpose: The management of severe ocular surface diseases and end-stage dry eye disorders such as Stevens Johnson syndrome and chemical burns with conventional keratoplasty or keratolimbal allografting remains unsatisfactory. The Osteo-Odonto Keratoprosthesis (OOKP) is a form of keratoprosthesis surgery designed to treat the most severe of these cases, and good outcomes with long-term retention have been reported. We present the surgical video of our first case, and the clinical results of 14 Asian patients within our Singapore OOKP Program.

Method: OOKP surgery involves a radical two-stage procedure – in stage 1, a canine tooth is removed, modified to receive an optical PMMA cylinder, and implanted into the cheek. The entire ocular surface is denuded and replaced with a full thickness buccal mucosal graft. Stage 2 surgery, performed 2-4 months later, involves retrieval of the tooth-cylinder complex and implanting it into the cornea, after lifting of the buccal mucosal flap, corneal trephination, iris and lens removal and anterior vitrectomy. Concurrent glaucoma and vitreo-retinal procedures may also be performed at either stage, if required.

Results: In February 2004, the Singapore National Eye Centre embarked on its OOKP program, in collaboration with the National Dental Centre. We have now performed OOKP surgery on 14 patients, 13 of whom have completed Stage 2 surgery, with the longest follow-up being 20 months (mean follow-up = 7 months). To date, no significant or sight-threatening keratoprosthesis related complications have occurred. 5 patients have attained 6/6 vision, 4 have attained vision between 6/9 and 6/18 (2 eyes had retinal detachment), 2 eyes with glaucomatous optic neuropathy have attained 6/60 and 6/120 and the remaining eye has 6/30 vision due to optic tilt away from the macula.

Conclusion: OOKP surgery appears to be a highly promising procedure which has the potential to restore excellent vision to the most severe cases of end-stage corneal disease, when all else has failed. Longer follow-up of these cases is currently underway.

V3023

LATERAL THINKING FOR CORNEAL SURGEONS... LITERALLY!

DONALD TAN¹, ANAND PARTHASARATHY¹, ANDREA LIU¹
Singapore National Eye Centre, Singapore¹

Purpose: Studies on corneal graft survival in high risk grafts have shown that survival rates are low, and the 1999 Australian Corneal Graft Registry has revealed that the 10 year survival for penetrating keratoplasty is only 59%. We present the management of 4 one-eyed patients faced with the prospect of high risk grafts, in which a logical, alternative and holistic approach, resulted in a safe alternative to conventional penetrating keratoplasty.

Method: Four patients with angle closure glaucoma presented with complete blindness from glaucomatous optic neuropathy in one eye, and poor vision in the remaining eye from corneal decompensation or a previous failed graft. Instead of performing a high risk allograft transplant in the remaining eye, we used the healthy corneas from the blind eyes for the fellow eye, thus obviating the risk of allograft rejection and graft failure in the seeing eye. To replace the defect in the blind eye, we used lamellar grade cadaveric corneal tissue, together with a Gunderson conjunctival

flap to prevent subsequent painful bullous keratopathy.

Results: In all 4 patients, clear, healthy clear grafts resulted in the seeing eye, with good best-corrected vision ranging from 6/9 (n=2), to 6/12 and 6/21. In one patient (with a previous failed graft and ocular surface failure, autologous limbus was also transferred successfully. Satisfactory endothelial cell counts were obtained postoperatively in all 4 eyes.

Conclusion: Autotransplantation using the healthy cornea from a blind eye to restore vision in the remaining eye with corneal decompensation is a viable and safe option, as compared to conventional penetrating keratoplasty with its risks of graft failure from allograft rejection. Careful surgical planning and execution of this elegant procedure ensures visual success in the long term in these one-eyed patients.

Video Presentation 3

12 June 2006, Monday, 1600 - 1730 Hrs
Room 312, Level 3

V3024

MICROPULSE AND BURST-THE ULTRASOUND MODES FOR THE PRESENT AND THE FUTURE – A THERMAL IMAGING PRESENTATION

GALLI LAKSHMI NARAYANAN ARUN KUMAR¹, ARUMUGAM PALANIRAJ¹, PRABHAKAR BEENA¹, SUBBAIAH SIVAGNANAM¹
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Purpose: This analysis was performed to study the heat generated during the emulsification of the cataract during regular Phaco Surgeries and Bimanual Phaco Surgeries with different Ultrasound Modes like the Continuous, Pulse, Micropulse and Burst.

Method: This study was done during regular Phaco and Bi-manual Phaco Surgeries on Human Eyes. The rise in the Phaco Tip Temperature was analyzed using a Highly Sensitive Infra-red Camera "FLIR". The camera was placed at a distance of 1 feet from patients eye to be operated. This camera provides Real Time Thermal Still as well as Video Images which were later on processed in detail to study the rise in temperature during the different steps of the Phaco surgery like Nucleus sculpting and Emulsification with different Ultrasound Modes. This study was performed with the Galaxy Cold Phaco Peristaltic and Venturi Phacoemulsification Systems.

Results: With the Continuous and Pulse Ultrasound modes the rise in the Phaco Tip Temperature was between 40 to 49 degrees centigrade for a 60 to 70% Ultrasound Power. With the Burst and Micropulse Cold Phaco (with a reduced ON TIME and a long OFF TIME) Ultrasound modes the temperature rise never exceeded 38 degree centigrade for 100% Ultrasound Power. The past studies in different countries with different phaco machines have proved that

corneal wound burn occurs at or above 45 degrees centigrade.

Conclusion: This analysis clearly shows that the Burst Mode and the Micropulse Cold Phaco Mode with a REDUCED ON TIME and a LONG OFF TIME is safe to be used in any grade of cataract as the Phaco Tip Temperature never exceeds 38 degree centigrade in Phaco and Bimanual Phaco Surgeries. This study compares the different Ultrasound Modes whereas most of the previous studies done throughout the World compared between different Ultrasound Machines. This study is presented as a narrated Video Presentation.

V3025

BIMANUAL PHACO WITH ULTRATHIN FOLDABLE INTRAOCULAR LENS IMPLANTATION MADE EASY

GALLI LAKSHMI NARAYANAN ARUN KUMAR¹, ARUMUGAM PALANIRAJ¹, PRABHAKAR BEENA¹, SUBBIAH SIVAGNANAM¹
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Purpose: Bimanual Phaco has now been refined and standardized. Bimanual Phaco Surgery just needs a small learning curve from regular Phaco Surgery. Recent modifications like the Micropulse mode in the Phaco machines and the Irrigating Choppers and Ultrathin Foldable Lenses have made it a reality.

Method: Galaxy Cold Phacoemulsification Systems was used by us. No Air Pump was used by us. Instead we used a Blood Transfusion Set and set the Irrigation Fluid Bottle Height to 4 feet from the patients eye level. We designed a Turbo Irrigating Chopper which gave us an outflow of 70 to 75 cc per minute. Cataracts of Grade I to Grade IV were operated by us. Under Topical anaesthesia, a 1.4 mm incision was made for the Phaco Tip and another 1.4 mm incision was made for the Irrigating Chopper. The chamber stability during the surgery was excellent. Following emulsification of the nucleus the Irrigating Chopper incision was extended to 1.8 mm and Acryfold Hydrophilic Ultrathin Foldable Lens was implanted.

Results: The visual rehabilitation of the patients was excellent on the first post-operative day itself. The optical quality and centration of the Ultrathin Foldable Lenses was found to be good. The long term follow up of these patients upto 6 months post-operatively showed no change in the induced astigmatism as well as the Ultrathin Foldable lenses quality was found to be excellent.

Conclusion: With these modifications and instrumentation Bimanual Phaco can be performed on any grade of cataract with the advent of Cold Phaco Technology and the learning curve is short for an experienced Phaco Surgeon and Ultrathin Foldable Lenses that can be implanted through 1.8 mm incision makes it a complete surgery. This Narrated Video will demonstrate the modifications and instrumentation used by us in making Bimanual Phaco a Luxury.

V3026

EYECARE IN LEPROSY

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Purpose: Leprosy is still quite prevalent in some parts of India. They mostly ostracized by the society, so they remain far away from medical care. We organized eye camps and operated on them for cataract to restore their vision and thus try to reduce their handicap.

Method: It's a social responsibility of an ophthalmologist which we cannot shun off. This video will depict a small endeavour of an ophthalmologist from rural India.

Results: 350 patients were examined in the screening camps. 80% had ocular involvement half of which were non-leprotic. Age-related cataract, keratomalacia, bilateral cataract, old perforated corneal ulcer etc.

Conclusion: Inaccessibility to specialist eye care could help to reduce ocular morbidity in these cases. The striking success of MDT could be negated by this socio-medical problem as many leprosy patients continue to develop ocular complication regardless of MDT.

V3027

INSTRUMENTATION AND ADJUVANTS IN DIABETIC VITRECTOMY

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Purpose: To demonstrate the use of various instrumentation techniques and adjuvants in Diabetic Vitrectomy.

Method: An array of intraocular instruments including vitreous cutters, scissors, forceps, lasers and adjuvants are often used in diabetic vitrectomy. Surgical techniques including en bloc dissection, delamination and segmentation are used. We demonstrated these techniques and the indications for their use in this video.

Results: The appropriate instruments and adjuvants at different stages of diabetic vitrectomy enhance visualization and minimize complications.

Conclusion: Proper selection of instruments and adjuvants in diabetic vitrectomy are necessary for good surgical outcome.

V3028

EXOPHTHALMOMETRY – PRINCIPLES AND APPLICATIONS

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Purpose: To describe the principles and technique of exophthalmometry.

Method: Exophthalmometry is a useful diagnostic test in all cases of orbital disorders. It measures the displacement of the eye in relation to the lateral orbital rim. With a wide range of measuring devices available today, it is important that clinicians adopt a standardized method of using them in diagnosis.

Results: This video shows different types of orbital displacement and elaborates the use of the Hertel and Luedde exophthalmometers. Types of exophthalmometry, factors affecting measurements, sources of error with different exophthalmometers and ways of avoiding them are also demonstrated.

Conclusion: This video is intended for the general ophthalmologist to get accustomed with the standardized technique of exophthalmometry.

V3029

THE ‘EYELID LIFT’ ADJUSTABLE PTOSIS SURGERY

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Purpose: To describe the technique of ‘Eyelid lift’ Adjustable Ptosis Surgery.

Method: The surgical techniques for the repair of ptosis have refined over the past few decades. There still remains a significant amount of unpredictability, and re-operation rate due to the limitations of various nomograms to calculate post-operative lid height. Steps of the surgery are described sequentially highlighting crucial steps.

Results: We describe a modified technique of post-operative suture adjustment where the eyelid is “lifted” to the desired height by tightening the cardinal sutures. This technique eliminates the need of frost suture, does not require anaesthesia for suture adjustment, and provides simultaneous creation of eyelid crease. It allows the surgeon to avoid the effects of intraoperative local anaesthesia, epinephrine, recumbent position and gravity on the post-operative eyelid height.

Conclusion: Adjustable suture is an alternative to intra-operative calculations of levator resection and eyelid height placement during ptosis surgery.

V3030

PTOSIS SURGERY BY LEVATOR RESECTION THROUGH ANTERIOR APPROACH WITH ADJUSTABLE SUTURE

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Purpose: Post-operative lid position after surgery is variable. This shortcoming can be overcome with sutures that can be adjusted postoperatively

Method: After incision through skin and orbicularis oculi, dissection is continued to separate LPS aponeurosis from Muller’s muscle 10-12mm above the tarsal plate and then LPS was mobilized from common sheath. 3 double armed 6/0 vicryl suture are placed through LPS aponeurosis, passed in and out through the tarsal plate, with one end passing through upper lip of skin incision and one end through lower lip. A single throw bow-knot is tied after setting the lid height which also closes the wound. Patient is seen after 24 hours, lid sutures are adjusted and tied securely at the required height. Follow up period was 1 year.

Results: Result was satisfactory.

Conclusion: LPS resection via the anterior approach with adjustable suture is a good technique for fruitful result.

V3031

SIMPLE MODIFICATIONS FOR SUCCESSFUL PHACOEMULSIFICATION

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Purpose: To demonstrate modifications by the author for making different steps of phaco emulsification easy and safe.

Method: Small modifications in instrumentation to make them more ergonomically designed, small modifications in the technique to make it simpler, little innovative ideas which help the surgeon in capsulorrhexis, nucleus management, iol insertion and making the procedure a pleasure.

Results: These steps help in safe completion of phacoemulsification.

Conclusion: Safe and uncomplicated phacoemulsification in all cases is possible.

V3032
MANAGEMENT AND IMPLANTATION OF ACRIFLEX 62
TOR-I – FIRST CUSTOMIZED TORIC IOL

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The video demonstrate a new IOL-Design. The production technology alloweds customized asymmetric aberration reduced optics with no polished surface with sharp edges on optics (6,2mm) and 4 haptics. Diagnostic management, implantation technique and the results of the first 45 cases are demonstrated.

V3033
SEVEN HABITS FOR THE SUCCESSFUL MIGRATION
TO BIMANUAL MICRO-INCISION
PHACOEMULSIFICATION

LIM TOCK HAN¹

The Eye Institute, National Healthcare Group, Singapore¹

Migrating from standard coaxial phacoemulsification to bimanual micro-phacoemulsification is not difficult. However, forming the right habits ensure successful and painless migration. These include:

- 1) minimizing phaco energy
- 2) prior practice of micro-capsulotomy forceps
- 3) using the non-dominant hand actively
- 4) performing proportionate micro-incision
- 5) raising the infusion pressure
- 6) reducing the aspiration rate
- 7) remembering the correct sequence – ‘in’fusion and ‘out’ trasound.

The 10 minute video will show how to achieve each habit painlessly.

V3034
SURGICAL CHALLENGES DURING
PHACOEMULSIFICATION IN EYES UNDERGONE
RADIAL KERATOTOMIES

SUDARSHAN KUMAR KHOKHAR¹, ANITA PANDA¹, TANUJ DADA¹

RPCentre AIIMS, New Delhi, India¹

Purpose: To highlight the hazards encountered during phaco in RK eyes.

Method: Surgical techniques of phaco in such eyes.

Results: Different surgical peculiarities and their mangement.

Conclusion: Proper planning is essential for such eyes.

Video Presentation 4

13 June 2006, Tuesday, 1600 - 1730 Hrs
 Room 312, Level 3

V3035

FULL-BED DEEP LAMELLAR KERATOPLASTY –
DETACHMENT OF DESCEMET’S MEMBRANE FROM
STROMA USING VISCOELASTIC INJECTION AFTER
POCKETING EXPOSURE BY STROMAL HOOKING
TECHNIQUE

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Purpose: To report a new surgical technique of Descemet’s Membrane (DM) exposure in entire bed for deep lamellar keratoplasty (DLKP) and clinical results after transplantation.

Method: DM was exposed in a small area at 12 o’clock around trephined margin. A beveled 27-gauge canula was inserted between the layers of DM and stroma, and viscoelastic material was injected to detach DM from the stroma reaching the entire bed. The recipient stroma in full thickness without DM was removed. A cryopreserved donor corneal button was grafted to the bed. The frequency of complete exposure of DM, complications, time for each surgery, were recorded. Postoperatively, reepithelialization, variation of graft, uncorrected visual acuity, and best-corrected visual acuity, were evaluated.

Results: In 103 eyes of 102 patients, DM was exposed in the full bed without complications in 81 eyes (78.6%), with microperforation in 21 eyes (20.4%), and with larger DM tear in one eyes (0.9%). In 102 eyes, cryopreserved donor button was used for grafting. Postoperatively, corneal button completely attached to recipient DM in 89 of 102 eyes (87.3%); and double-chamber was observed in 13 of 102 eyes (12.7%), which resolved in all 13 eyes within one month. Successful epithelialization of the grafts completed within 5 days in 102 eyes. The mean surgical time was 76 ± 19 minutes. Slit lamp identifiable stromal edema of the grafts resolved within one to three months after surgery. The postoperative mean visual acuity without correction was 20/50 and best corrected visual acuity was 20/29.

Conclusion: A new surgical procedure of full-bed DLKP was developed, enabling reliable exposure of DM in the entire bed, and easing surgical difficulty of DLKP. Cyropreseved donor cornea can be used to restore the corneal clarity and remarkably enhance visual acuity in this type of DLKP.

V3036
PRECHOP MANUAL PHACOFRAGMENTATION USING MICROVITREORETINAL BLADE

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Purpose: To demonstrate the small incision cataract surgery with intraocular lens implantation using prechop manual phacofragmentation.

Method: This video presents the step of cataract surgery using prechop manual phacofragmentation technique. After capsulorhexis and hydrodissection are performed, the endonucleus is prolapsed into anterior chamber and bisected using a MVR blade and a phaco-chopper. Pieces are extracted with two Sinsky hook through a small incision. After the cortical debris is aspirated, a 5.5-mm intraocular lens is placed into the capsular bag and the corneal wound is closed with 1- stitch suture.

Results: The author has successfully performed this procedure in more than 300 cases with grade 2-4 nuclear sclerosis with ease and safety.

Conclusion: Prechop manual phacofragmentation provides small incision cataract surgery without the need for a phaco machine.

V3037
REVISION OF PTOSIS SURGERY

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Purpose: To demonstrate the technique for revision of ptosis surgery.

Method: Video Presentation of the Technique.

Results: Revision surgery was done for 7 out of 50 patients who had undergone anterior levator resection. Revision was done one week after surgery under local anesthesia. Layers of the wound were separated and the levator attachment to tarsus identified. The amount of levator resection was readjusted according to over or under correction. Five patients had surgery for undercorrection while 2 patients had over correction.

Conclusion: Readjustment of anterior levator resection is best done one week after surgery with minimal problems.

V3038
DEEP ANTERIOR LAMELLAR KERATOPLASTY FOR KERATOCONUS

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Purpose: The video demonstrates the technique of deep lamellar keratoplasty using air injection in to the corneal stroma. Deep anterior lamellar corneal transplant retains the recipients endothelial cells with descemet's membrane . It eliminates the risk of corneal rejection associated with penetrating keratoplasty.

Method: Air is injected into the corneal stroma of the recipient to aid in the deeper dissection of the corneal lamella. Air injected into the stroma separates the Descemet's membrane. The corneal thickness is increased there by making the lamellar dissection much safer. Descemet's membrane is peeled off from the donor corneal button and sutured to the recipient's bed with 10-0 prolene suture.

Results: In all the 18 patients who underwent anterior lamellar graft for keratoconus , the post operative corneal topography shows disappearance of cone and flattening of central cornea. Specular microscopy shows average cell density of 2800 cells.

Conclusion: Deep anterior lamellar corneal grafting for keratoconus is an emerging technique for keratoconus. The post operative care is much simpler and rejection is almost unknown.

V3039
GIANT EPIBULBAR DERMOID IN NEWBORNS – HOW FAR CAN WE GO?

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Purpose: To achieve the best possible visual outcome in Epibulbar dermoids with extensive surface involvement.

Method: Case 1: An anxious mother presented her forty-days old baby with a 15mm x 15mm ugly bulbous mass obscuring the complete right cornea. Immersion B-Scan confirmed full thickness involvement. Excellent cosmesis was achieved by excision of the dermoid along with penetrating keratoplasty. Later, the graft failed and visual rehabilitation was reinforced by re-graft, contact lens wear and amblyopia therapy. Case 2: A twenty one days old baby presented with a similar pedunculated, epibulbar mass obscuring the cornea and epibulbar surface along with lateral canthus dysgenesis. Excision of the mass, penetrating keratoplasty and lateral canthoplasty was done. This graft failed and medial symblepharon developed that recurred after a repeat surgery.

Results: In case one, clear graft with optimal vision is maintained after 18 months of follow-up. But in second patient, corneal graft

failed and medial symblepharon developed, that recurred after a repeat surgical intervention.

Conclusion: Visual prognosis for extensive dermoids involving the fornices and lids is poor, and those restricted to cornea, if managed meticulously, can give a better visual and cosmetic outcome.

V3040

PEARLS FOR PTERYGIUM SURGERY

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Purpose: To show different techniques for pterygium surgeries including proper harvesting of auto conjunctival grafts.

Method: Surgical techniques.

Results: Each technique was critically evaluated.

Conclusion: Among all techniques Auto conj. graft was the most superior.

V3041

CATARACT SURGERY IN 2011

KUMAR J DOCTOR¹

*Doctor Eye Institute, Mumbai, India*¹

Purpose: To make cataract surgery, a more perfect Refractive Procedure. This film depicts a futuristic idea of how cataract surgery may be done in future (2011).

Method: The video demonstrates the possible future in Cataract Surgery. It takes you back to 5 B.C. and also to the era where surgeries were done at home bedside. The video than tells of modern surgeries done now and in the future.

Results: The movie takes you from what is done now with Bifocal/Multifocal IOLs to what may be done in near future with aqua phaco in 2011. It overcomes the limitations of the A Scan with better measuring techniques and better formulas for a smaller incision and faster visual rehabilitation.

Conclusion: Not a very far Future to a glass free world.

V3042

MANAGEMENT OF POSTERIOR LENTICONUS WITH CATARACT

EKTA MODA¹

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Purpose: To make cornea specialists aware of the dilemma in diagnosis and management of the not-so-frequent clinical entity of posterior lenticonus with cataract.

Method: A case series diagnosed as having posterior lenticonus with cataract in the paediatric age group is presented. Detailed slit lamp evaluation helped in preoperative diagnosis by the surgeon concerned. All of them were associated with amblyopia. Good surgical outcomes were achieved in all these cases through meticulous and demanding technique. This video demonstrates the slit lamp evaluation and surgical technique about how to diagnose and manage anterior and posterior lenticonus.

Results: Six patients, less than seven years of age, are undergoing aggressive amblyopia therapy. Of the remaining thirteen patients aged seven years or above, nine patients had visual acuity between 20/200 and 20/40 and four patients had vision of counting fingers close to the face associated with dense amblyopia.

Conclusion: Timely intervention by accurate clinical diagnosis and management of posterior lenticonus ensures gratifying visual results.

V3043

MICROINCISION PHACOEMULSIFICATION – TIPS, TECHNIQUES AND RESULTS

PARTHA BISWAS¹, ARNAB BISWAS¹

*B B Eye Foundation, Kolkata, India*¹

Purpose: Techniques of transition to microincision phacoemulsification or phacolit and a companion rollable intraocular lens.

Method: This video film consisting of animated surgical steps and live surgical clips will assist both the beginner and the initiated through the learning curve of microincision phaco. The video tour will address issues of proper case selection, for obtaining good visual results. The appropriate incision smoothens out instrument entry and avoids wound leak. Hydrodissection is a crucial step and different from conventional phacoemulsification. Nucleus removal technique has been demonstrated in detail. Fluidic requirements and phacoenergy modulation is the essence of surge management. Finally the intraocular lens will be discussed which will enter through a microincision.

Results: The animated surgical steps and surgical techniques achieve a smooth transition from phacoemulsification to microincision phacoemulsification.

Conclusion: This video discusses the pearls and pitfalls of every step of microincision phacoemulsification and a rollable lens implantation.

V3044

CORNEAL GRAFT INFECTION

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Purpose: To find out the outcome of keratoplasty in 310 eyes who underwent Optical PK.

Method: The eyes were studied with regards to development of graft infection. Twelve developed ulcer between 5-6 months, 1 at 9 and 1 after 14 months.

Results: Predisposing factors for graft infection were loose/broken sutures, suture abscess, exposed knot, epithelial defect raised IOP & topical corticosteroid. Almost equal number of bacteriae and fungi were isolated. After healing, graft clarity of 3+ or more achieved in 10(14.2%), 2+ in 30(43%), 1+ in 25(35.6%). Five required therapeutic PK (7.1%) and later gained clarity 2+. BCVA was 20/30–20/60 in 15(21.4%), 20/80-20/200 in 40(57.2%), <20/200 in 10(21.4%).

Conclusion: Results of keratoplasty achieved from this study was similar to that of reported studies. Meticulous post operative follow up may reduce the incidence of corneal graft infection.

V3045

MANAGEMENT OF OSSN

ANITA PANDA¹

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Purpose: Ocular surface squamous neoplasia (OSSN), requires ophthalmologists concern to a great extent because of its subsequent spread. possibility of intraocular extension or extraocular spread. The objective of this study is to highlight the efficacy of the conventional surgical technique and noninvasive mode of management by drugs for the eyes with OSSN.

Method: In a prospective study, 74 eyes of 70 patients with OSSN between March 1980 to July 2002, were evaluated and managed. Frozen section controlled excision with double freeze thaw cryo application to surgical margins and under surface of the conjunctiva was performed in 64 eyes (gr. I) and 10 eyes (gr. II) had topical 0.04% mitomycin C drops (MMC) QID. Direct conjunctival suturing in 14 eyes, amniotic membrane transplantation (AMT) in 16 eyes and lamellar keratoplasty in 34 eyes were performed. In 9 eyes limbal transplantation was done as an adjunctive procedure.

Results: All but two eyes showed clinical improvement in terms of tumor eradication. Both the eyes were operated. The histopathological study disclosed the diagnosis of granuloma. All the eyes either maintained or retained their anatomical and functional integrity.

Conclusion: Management of OSSN though tedious, can be tackled by meticulous and judicious therapy.