

1: "Inside-out" approach to posterior polar cataracts | Ophthalmology Magazine

A posterior polar cataract presents a special challenge to the phaco surgeon because of its predisposition to posterior capsular dehiscence during surgery.1,2 Osher et al1 reported a 26% (8/31 eyes) incidence of posterior capsular rupture during surgery in eyes with a posterior polar cataract.

Saudi Journal of Ophthalmology: Official Journal of the Saudi Ophthalmological Society <https://www.sjoo.org>: Rui Hiramatsu, Kunimi Fujisawa One of the greatest issues facing the cataract surgeon today is accurate prediction of post-operative refractive error. With use of intraoperative autorefractometry IOAR, such errors can be detected and post-operative refractive errors avoided. An year-old woman was admitted for right eye phacoemulsification, with aimed at Bruno Zuberbuhler, Gianluca Carifi A heterogeneous group of conditions can cause changes to the intraocular lens IOL during or after implantation in uneventful cataract surgery. Disposable forceps were found to be the source of the pigmented marks when used to hold the lens during the injector loading process. At the slit-lamp examination, the pigments were located in the centre of the lens optic, easily detectable A case report in a tertiary eye hospital in Saudi Arabia. This late postoperative complication can occur a decade or later after implantation. The deposits are composed of IOL materials that tend to aggregate centrally. There is a relative paucity of the literature on snowflake degeneration of IOLs. Symptoms can range from mild visual disturbance to significant loss of visual acuity. In cases of opacification after IOL implantation, the different diagnosis should include snowflake degeneration to prevent surgical intervention such as lens exchange or explantation unless clinically warranted A retrospective analytical study. To determine whether anterior capsule polishing during cataract surgery done by phacoemulsification has any effect on the rate of posterior capsule opacification. The medical records of patients who underwent cataract extraction by phacoemulsification with foldable square edge hydrophilic PCIOL between April and March were reviewed. The study included eyes of patients who underwent phacoemulsification with foldable square edge hydrophilic IOL in the bag implantation with anterior capsular polishing Myopia has been identified as a risk factor for globe perforation during regional anaesthesia for cataract surgery. We conducted this study to evaluate efficacy of single injection percaruncular peribulbar anaesthesia for phacoemulsification in patients with axial myopia. Eighty patients with axial myopia received percaruncular peribulbar anaesthesia and were evaluated for incidence of major or minor complications. To study the histopathological findings of the early cases of failed DSAEK grafts and to analyze the causes of graft failure. Retrospective study of 13 failed DSAEK grafts four grafts submitted alone with no host cornea of 12 patients. The histopathologic features are correlated with the clinical and operative findings. A review of current literature and the experience from an initial installation. Safety and accuracy of the procedure are paramount and techniques should remain under constant review. Recently, the introduction of the femtosecond laser to assist cataract surgery has provided ophthalmologists with an exciting tool that may further improve outcomes. We review the existing literature and discuss the installation and initial experience of a femtosecond laser into our practice. Arif O Khan Hereditary pediatric cataract on the Arabian Peninsula does not follow the same epidemiological patterns as described for Western populations. This article describes selected genetic causes for inherited pediatric cataract in the region. Retrospective interventional case series. The medical reports of six eyes of four RP patients with capsule bag fixated posterior chamber IOL dislocation were retrospectively reviewed. Pre-operative data included demographics, systemic or ocular disorders, history of trauma, previous intraocular surgery and pre-operative visual acuity Recent evidence suggests that useful visual outcome can be achieved in most of the cases if they are handled meticulously. Key factors leading to improved visual outcome are absolute control of preoperative inflammation with diligent use of immunomodulatory drugs, meticulous surgery along with early detection and care of postoperative complications. Modern technologies in the intraocular lens designs and materials have contributed to the success The surgeon needs to adhere to special surgical strategies to minimize the risk of a posterior capsule rupture. Hatem Kalantan Posterior polar

cataract is a rare form of congenital cataract. It is usually inherited as an autosomal dominant disease, yet it can be sporadic. Five genes have been attributed to the formation of this disease. It is highly associated with complications during surgery, such as posterior capsule rupture and nucleus drop. The reason for this high complication rate is the strong adherence of the opacity to the weak posterior capsule. Different surgical strategies were described for the handling of this challenging entity, most of which emphasized the need for gentle maneuvering in dealing with these cases Mehrdad Mohammadpour, Reza Erfanian, Nasser Karimi A critical step in phacoemulsification as well as extracapsular cataract extraction is making a window in anterior capsule wall i. Continuous Curvilinear Capsulorhexis CCC has become recognized as the standard method of anterior capsulectomy. Techniques employed for CCC have undergone sustained evolution. The present review evaluates elementary principles of CCC. Management of CCC in the presence of small pupil and pseudoexfoliation syndrome is discussed. Main differences of pediatric CCC from its adult-style counterpart and finally several techniques of rescue of an extending capsulorhexis are also reviewed Dilraj Singh Grewal, Satinder Pal Singh Grewal Since the Scheimpflug principle was first described over a century ago, there has been a great interest among ophthalmologists for the use of Scheimpflug camera in anterior segment imaging. Scheimpflug imaging has since advanced significantly and modern day instruments provide comprehensive imaging and topographic data of the anterior segment. In this article the clinical applications and limitations of Scheimpflug imaging in modern cataract surgery patients are discussed. This article reviews recent work on assessment of lens transparency for cataract grading and integrity, using preoperative lens density measurements to help predict phacoemulsification parameters, its utility in challenging situations like capsular bag distension syndrome and traumatic cataract and assessment of density of the posterior capsule for objectively quantifying posterior-capsule opacification To use optical coherence tomography OCT to measure corneal power and calculate intraocular lens IOL power in cataract surgeries after myopic and hyperopic laser vision correction LVC. Corneal power was measured with a Fourier-domain OCT system. The intravital repeatability of OCT corneal power measurement was evaluated by the pooled standard deviation of repeat scans Office measurement of AL can be difficult in young children and infants and must often be done under anesthesia in an eye that is unable to cooperate with precise fixation and centration. Contact A-scan measurements yield shorter AL, on average, than immersion A-scan measurements in pediatric eyes. This difference is mainly the result of the anterior chamber depth rather than the lens thickness value. During intraocular lens power calculation, if globe axial length is measured by the contact technique, it will result in the use of an average 1-D stronger IOL power than is actually required Wolfgang Haigis The introduction of new intraocular lenses IOLs , industry marketing to the public and patient expectations has warranted increased accuracy of IOL power calculations. Toric IOLs, multifocal IOLs, aspheric IOLs, phakic lenses, accommodative lenses, cases of refractive lens exchange and eyes that have undergone previous refractive surgery all require improved clinical measurements and IOL prediction formulas. Hence, measurement techniques and IOL calculation formulas are essential factors that affect the refractive outcome

2: Publications Authored by Abhay R Vasavada | PubFacts

Cataract Update Approaches to a posterior polar cataract Abhay R. Vasavada, MS, FRCSa,†; Viraj A. Vasavada, MSA; Shetal M. Raj, MSA Abstract Posterior polar cataracts present special challenges to the cataract surgeon.

He complains of severe glare when driving at night. The patient states that he has never worn glasses and hopes to minimize his dependence on them postoperatively. The slit-lamp examination is consistent with posterior polar cataracts Figure 1. Keratometry readings reveal 4. What is your surgical approach to a posterior polar cataract? Would you place a toric IOL in the event of a posterior capsular breach? What would your plan of action be for this particular patient? Topography ideally with iTrace [Tracey Technologies, Houston, TX] shows latent regular astigmatism that is expected to manifest postoperatively but is masked by lenticular astigmatism. With success, I would target emmetropia in his left eye. I consider posterior polar cataracts to be cortical-capsular adhesions without elasticity in the adhesion ring and not posterior capsular agenesis. Routine phaco forces easily rupture the posterior capsule, a complication I have avoided in 58 consecutive cases. First, I prevent deepening or shallowing of the anterior chamber until adhesion releases. Second, I avoid overfilling the anterior chamber, lower the bottle, and lift the iris off the peripheral capsule before engaging phaco foot position 1. Then, I raise the bottle to avoid iris retropulsion. Next, I fill and stabilize the chamber with viscoelastic when removing instruments. I only hydrodelineate the endonucleus, and I avoid both hydrodissection and all rotation of nuclear material. For soft lenses, as in this case, I employ a Rosen phaco splitter to excavate by layers toward the plaque while aspirating the inner nucleus with the phaco tip little or no ultrasound required. If the posterior capsule ruptures, the anterior capsulorhexis is a critical backup. When the complication is recognized early, it is possible to convert posterior capsular tears they start centrally into true posterior continuous curvilinear capsulorhexes, which will permit routine implantation of a toric lens. I will slowly and gently insert the IOL into the bag and rotate the lens to the proper angle before permitting its haptics to open. If the posterior continuous curvilinear capsulorhexis fails, then I will forward capture the optic through the anterior capsulorhexis with the haptics in the bag. I would stress that toric IOLs will not fully correct his astigmatic refractive error and that a postoperative laser vision correction enhancement will likely be required. The increased risk of posterior capsular rupture must be addressed as well. The patient needs to understand that, should this complication occur, he will receive a conventional monofocal lens and his astigmatism will have to be addressed with laser vision correction. Posterior polar cataracts increase the risk of capsular rupture due to the fusing of the cataract with the posterior capsule. Instead, I would perform hydrodelineation and use a cannula to inject fluid between the nucleus and the epinucleus. I would then proceed with gentle phacoemulsification of the nucleus but leave behind the epinucleus to help protect the capsule. Finally, I would draw cortical remnants from the periphery toward the center to minimize shearing forces on the weakened central capsule. If the capsule were torn, I would not implant a toric IOL, because precise positioning and long-term stability are critical with these lenses. Rather, I would implant a three-piece conventional monofocal IOL, its haptics in the sulcus and its optic captured behind the capsulorhexis. Residual astigmatism would be addressed with laser vision correction. Because the risk of posterior capsular rupture is significantly higher in these cases, ophthalmologists must alter their surgical technique. Hydrodissection should be avoided in favor of gentle, slow hydrodelineation, which can be performed at multiple depths in the lens. I would be careful not to overinflate the anterior chamber, which could blow out the posterior capsule. Viscodissection might also be helpful. I would use the slow-motion phaco technique described by Robert Osher, MD, and leave the posterior lenticular material until the end of surgery. The next clinical issue is astigmatic management. Because of the posterior polar cataracts, I would have two plans of attack. If the posterior capsule were violated during removal of the posterior polar cataract, then a toric IOL could not be used. Instead, I would implant a three-piece IOL in the ciliary sulcus, possibly with bagsulcus fixation by capturing the optic beneath an intact anterior capsule. Slight modifications in the length of the

peripheral corneal relaxing incisions might be required if the clear corneal incisions were lengthened to accommodate a sulcus-based IOL. To measure the magnitude and axis of the corneal astigmatism, we prefer to use the values from the manual keratometer. As a part of preoperative counseling, we explain to patients the risk of a dropped nucleus, multiple surgical interventions, and residual refractive error as well as the possible need to perform an early Nd: YAG capsulotomy for intraoperative posterior capsular plaque. During phacoemulsification in such cases, we use a closed-chamber technique. Instead, after creating a central trench, we perform inside-out delineation, which is a technique for safely emulsifying polar cataracts. We then emulsify the nucleus using modest parameters and Dr. We detach the central opacity fibers in the central portion of the posterior capsule after separating the peripheral cortex circumferentially. In the event of a posterior capsular rupture, we perform an anterior vitrectomy via a bimanual limbal approach. If the long axis of the rupture were not in the vertical meridian, we would implant the AcrySof Toric IOL in the bag, because the material of this lens causes it to unfold very gently and, in our experience, not to extend the ruptured area if the IOL is implanted precisely. We find the use of intracameral triamcinolone very useful when performing an anterior vitrectomy and for confirming the absence of vitreous in the anterior chamber at the end of surgery. We suture the main and paracentesis incisions at the end of the surgery. In a few cases, we have implanted the AcrySof Toric IOL in eyes with compromised anterior and posterior capsules, and the lens was stable 1 year postoperatively. Section Editor Bonnie A. Raviv may be reached at ; tal. Arbisser is also an adjunct associate professor at the John A. She acknowledged no financial interest in the products or companies she mentioned. Arbisser may be reached at ; drlisa arbisser. Buznego may be reached at ; cbuz comcast. He acknowledged no financial interest in the products or companies he mentioned.

3: Our Approach to Phacoemulsification

by Abhay R. Vasavada, M.S., F.R.C.S., and Shetal M. Raj, M.S. Although most posterior polar cataracts tend to be on the softer side at the time of their removal, they can still be some of the more complex cataract extractions. The thinned and weakened posterior capsu.

Although most posterior polar cataracts tend to be on the softer side at the time of their removal, they can still be some of the more complex cataract extractions. Certain precautions can be taken such as avoiding downward pressure on the capsule, avoiding hydrodissection, avoiding excessive rotation of the endonucleus, and working within the safety of an epinuclear shell. His inside-out hydrodelineation technique is a useful method for insuring safe creation of an epinuclear shell while placing minimal stress on the posterior capsule. His step-by-step instructions should help us all lower our rate of capsule rupture in these difficult cases. Scanner available for free at your app store. Or view the video of Dr. A moderate-sized continuous curvilinear capsulorhexis is created Figure 2. A central trench is sculpted using the slow motion technique Figure 3. A dispersive viscoelastic is injected through the side port before retracting the probe to maintain a closed chamber Figure 4. A specially designed right-angled cannula is introduced through the main incision to reach the central trench Figure 5. The tip of the cannula is placed adjacent to the left wall of the trench at an appropriate depth Figure 6. Fluid is injected slowly with minimal force through the left wall of the trench Source all: Delineation is produced by the fluid traversing inside-out Figure 8. If the ring is incomplete, fluid injection may be repeated in the right wall of the trench with another right-angled cannula facing left Figure 9. A well-demarcated ring within the lens denotes the endpoint of delineation Figure A precise demarcation of the central core nucleus from the epinucleus provides a thick epinucleus bowl Figure A sketch to demonstrate inside-out delineation Source all: Posterior polar cataracts pose a unique challenge to the surgeon owing to the high risk of posterior capsule dehiscence during emulsification. It has been observed that the risk of posterior capsule rupture PCR increases with performing conventional cortical cleaving hydrodissection. The speculation is that injecting balanced salt solution in the capsular bag with an intact nucleus rapidly builds up the hydraulic pressure within the bag. This pressure is adequate to split the capsule at the site of the polar opacity as fluid passes through the area of least resistance. Other risk factors that could cause a PCR in eyes with posterior polar cataracts PPC are sudden and excessive forward movement of the iris-lens diaphragm, premature cleavage of the opacity from the capsule, or attempts to polish the central plaque opacity on the posterior capsule. To circumvent this eventuality and to facilitate nucleus removal during phacoemulsification in eyes with posterior polar cataract, we devised the inside-out delineation approach. Pre-procedure evaluation PPC has to be distinguished from the posterior subcapsular cataract. The opacity has a cone-shaped projection in the subcapsular region or central posterior cortex. The posterior subcapsular cataract is rather flat and does not have distinctly demarcated central ring opacity. PPC could also have co-existing nuclear or cortical opacities. Noting the integrity of the posterior capsule could help explain the prognosis to the patient. Rationale It is widely accepted that cortical cleaving hydrodissection should be avoided during emulsification of posterior polar cataracts as it increases the risk of posterior capsule rupture. Conventional hydrodelineation is instead performed, wherein the cannula is penetrated within the lens substance in an attempt to cause the fluid to traverse between the nucleus and epinucleus. With this there remains a possibility of fluid being injected inadvertently between the opacity and the capsule, leading to unwarranted hydrodissection. Also at times it may be difficult to introduce the cannula within a firm nucleus leading to rocking and stress to the capsular bag and zonules. With inside-out delineation fluid is injected at a desired depth, under direct vision. A precise demarcation of the central core nucleus from the epinucleus provides a thick epinucleus bowl. This bowl acts as a mechanical cushion and a barrier that protects the posterior capsule during subsequent maneuvers. Instrumentation, anesthesia, and technique A. Instrumentation Operating microscope with good coaxial illumination Dispersive viscoelastic: A specially designed gauge right-angled cannula facing the right

and the left side B. Anesthesia Peribulbar anesthesia is advisable for novice surgeons; with experience topical anesthesia could be administered. Technique A moderate-sized continuous curvilinear capsulorhexis is created Figure 1. No hydro procedure is done, and the surgeon commences phacoemulsification. A central trench is sculpted using the slow motion technique Figure 2. In nuclear sclerosis less than grade 3 grading system from grades Dispersive viscoelastic is injected through the side port before retracting the probe to avoid forward movement of the iris-lens diaphragm Figure 3. A specially designed right-angled cannula mounted on a 5 cc syringe filled with balanced salt solution is introduced through the main incision to reach the central trench. The tip of the cannula is placed adjacent to the left wall of the trench at an appropriate depth Figure 5. The plane at which the cannula penetrates the wall of the trench buried depends on the thickness of the epinucleus cushion we generate and on the density of the nuclear sclerosis. In dense nuclear sclerosis the cannula penetrates easily in the superficial plane generating a thin epinucleus cushion, as against a soft to firm nuclear sclerosis where a thick mechanical cushion of the epinucleus can be achieved. Fluid is injected slowly with minimal force through the left wall of the trench Figure 6. Delineation is produced by the fluid traversing inside-out Figure 7. If the ring is incomplete, fluid injection may be repeated in the right wall of the trench with another right-angled cannula facing left Figure 8. A well-demarcated ring within the lens is evidence of successful delineation Figure 9. Advantages of inside-out delineation Inside-out delineation can precisely demarcate the central core of nucleus Figure 10 , is easy to perform, provides superior control, and reduces stress to the zonules. Surgeons can achieve desired thickness of the epinucleus bowl that protects the opacity and the posterior capsule. It avoids inadvertent injection of fluid in the subcapsular plane. J Cataract Refract Surg. A predisposition to intra-operative posterior capsular rupture. Vasavada AR, Singh R. Phacoemulsification with posterior polar cataract. Slow motion phacoemulsification approach letter. Management of posterior polar cataract. They have no financial interests related to this article.

4: - NLM Catalog Result

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Shetal M Raj's research works | Iladevi Cataract and IOL.

6: Approaches to a posterior polar cataract - Europe PMC Article - Europe PMC

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7: Posterior Polar Cataract and Astigmatism – Tal Raviv, MD, FACS

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