

# ASIA-PACIFIC EyeWorld

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The News Magazine of the Asia-Pacific Association of Cataract & Refractive Surgeons **APACRS**

## **Refractive Surgery in the Asia-Pacific**

**Technological changes, the on-going face-off  
between microkeratomes and IntraLase and where  
refractive surgery in the region will all go from there**

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**Asia-Pacific Association of Cataract  
and Refractive Surgeons (APACRS)**



# Letters from the Editors



Dear Friends

The cornea provides most of the focusing power of the eye. Although only 0.5 mm thick, this tissue has been the focus of many innovations and advances in ophthalmic surgery in recent years. In this issue of EyeWorld Asia-Pacific, we look at some of the recent developments that have taken place in corneal surgery.

Commencing with the anterior surface and changes to corneal curvature, the technique of creating a flap during LASIK with a femtosecond laser as an alternative to a mechanical microkeratome offers significant benefits. Femtosecond flap creation is more predictable and potentially safer but surgeons once again face a new learning curve. The round table in this issue focuses on some of the issues related to femtosecond creation of flaps during LASIK and

contains valuable insights as well as suggestions to surgeons considering the transition to "bladeless" LASIK surgery.

The loss of corneal transparency due to endothelial failure is a major cause of loss of vision. Penetrating keratoplasty has been the mainstay of treatment for corneal decompensation for many years. Although successful in the majority of cases, wound healing, suture management and astigmatism prolong the visual recovery and may result in an undesirable refractive outcome. DSAEK is a revolutionary surgical technique that allows a thin layer of donor endothelium to be inserted through a small incision, addressing these limitations. The technique has been refined and many technical issues appear to have been resolved. This issue of EyeWorld Asia-Pacific presents a regional perspective on DSAEK as an important alternative to penetrating keratoplasty.

Finally in some situations penetrating keratoplasty is no longer a viable option. The replacement of a scarred cornea with a traditional Osteo-Odonto-Keratoprosthesis may be sight saving but is a daunting procedure. There have been several new types of keratoprosthesis developed for patients who are no longer suitable candidates for penetrating keratoplasty. The pros and cons of the different types of keratoprosthesis are discussed with an Asia-Pacific perspective.

For those who were unable to attend we have included a brief summary of activities from our annual APACRS meeting held recently in Hanoi. The meeting proved to be an outstanding success. A highlight of the meeting was the 2007 APACRS Lim Lecture, which was delivered by Kimiya Shimizu from Japan. The topic focused on the delivery of intraocular lenses through small incisions and we were very fortunate to have a surgeon who has contributed so much to phacoemulsification and small incision surgery present his insights and experience, which we share with the readership in this issue.

As we draw to the conclusion of the calendar year it is timely to reflect on the success of the publication of EyeWorld Asia-Pacific. We continue to offer a global perspective on Cataract and Refractive surgery but I am delighted that the contribution from the region has continued to increase to a point where the majority of the content of this issue originate from our region.

I would also on this occasion like to extend my gratitude to the outstanding staff at our head office in SNEC who make this publication feasible as well as the excellent cooperation we have received from the publishers of EyeWorld. I extend to them and all of you my best wishes for the festive season and look forward to continued growth and excellence for EyeWorld Asia-Pacific in the New Year.

Warmest regards

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Asia-Pacific Association of Cataract  
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Dear Friends

It has always been a pleasure to address our readers as the managing editor of the Indian Edition of EyeWorld.

The cover feature for this issue is: Refractive surgery in the Asia-Pacific. Along with this a lot of interesting articles highlighting the current trends in cataract surgery, retinal updates for anterior segment surgeons and the evolution of lamellar corneal surgeries will generate interest of other specialists as well.

Since its introduction in 2002, the use of the femtosecond laser for laser in situ keratomileusis (LASIK) has steadily increased. The advantages of the femtosecond laser over mechanical microkeratomes have been seen over this period in corneal flap creation. These advantages include a lower standard deviation in the central thickness of the cornea and better visual outcomes in the early

postoperative period. Furthermore, with the Intralase refractive surgeons are able to more accurately specify the thickness of the corneal flap, as well as to adjust the flap dimensions in order to create a flap custom-made for the needs of the patient and the type of excimer laser in use. Now we are also seeing a steady increase in the number of Intralase units in the Asia-Pacific region. For all those patients who are unsuitable for laser-based refractive correction including surface ablation procedures, use of Phakic IOLs, especially ICLs, is increasing. Predictable and stable refractive outcomes are produced by this procedure. But of course we all have to be better aware of the problems attached to these new procedures before they are accepted by a wider base of practitioners.

Recent developments in anterior lamellar keratoplasty enable targeted replacement or augmentation of corneal stroma. The concept of lamellar keratoplasty (LK) is that of targeted lamellar replacement of corneal tissue while retaining normal cornea. This could be anterior or posterior depending on the part of the cornea removed and replaced with donor tissue. However, penetrating keratoplasty (PK) remains the most common procedure, largely because lamellar surgery is more technically demanding and time consuming, and interface haze often results in sub-optimal visual outcomes. Advances in surgical techniques such as deep anterior lamellar keratoplasty (DALK) and Descemet's-stripping automated endothelial keratoplasty (DSAEK) have expanded the application of lamellar surgery to endothelial replacement. These procedures have achieved visual results approaching those of penetrating keratoplasty while reducing the rate of rejection and improving long-term graft stability. As research continues, LK promises to be an increasingly important option for the corneal surgeons. We are already seeing a gradual acceptance of these procedures by cornea specialists all over the world including the Asia-Pacific region.

Ever since Kelly and Wendel introduced macular hole surgery, it has been the subject of various studies. With the advent and subsequent widespread availability of widefield stereoscopic viewing systems, it is no longer the domain of few select retina specialists. Recent reports published by Spears et al in the American Journal of Ophthalmology (AJO) have raised concerns over the risk of reopening macular holes after cataract surgery in a previously vitrectomized eye. Cataract surgeons should make patients at risk aware of this possibility.

The ESCRS recommendation to administer intracameral cefuroxime at the time of surgery is a newer concept that is still to gain popularity among ophthalmologists, but the results are promising.

The recently introduced FOURIER Domain OCT (SD OCT-1000, Topcon Corporation, Tokyo, Japan) is another splendid addition to the existing armamentarium of diagnostic modalities. Ophthalmologists have yet to unravel the possibilities of this technology in the domain of research and investigative ophthalmology.

I believe with the diversity of the topics that have been covered in this issue all of us including retina specialists will find it a highly informative and educational read.

I conclude this with the agelessly elegant and universally acclaimed quote: "Whatever be the apparent diversity of things, it is wisdom to analyze and perceive the basic truth of this matter. The enlightened man will be able to lay here the one central substance of all things of this world."

Season's Greetings and I wish you all a Happy New Year!

Dr. S. Natarajan  
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