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*Innovation becomes a (champagne?)
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celebrate this year's diagnosis,
therapy and surgery stars
– as nominated by you.

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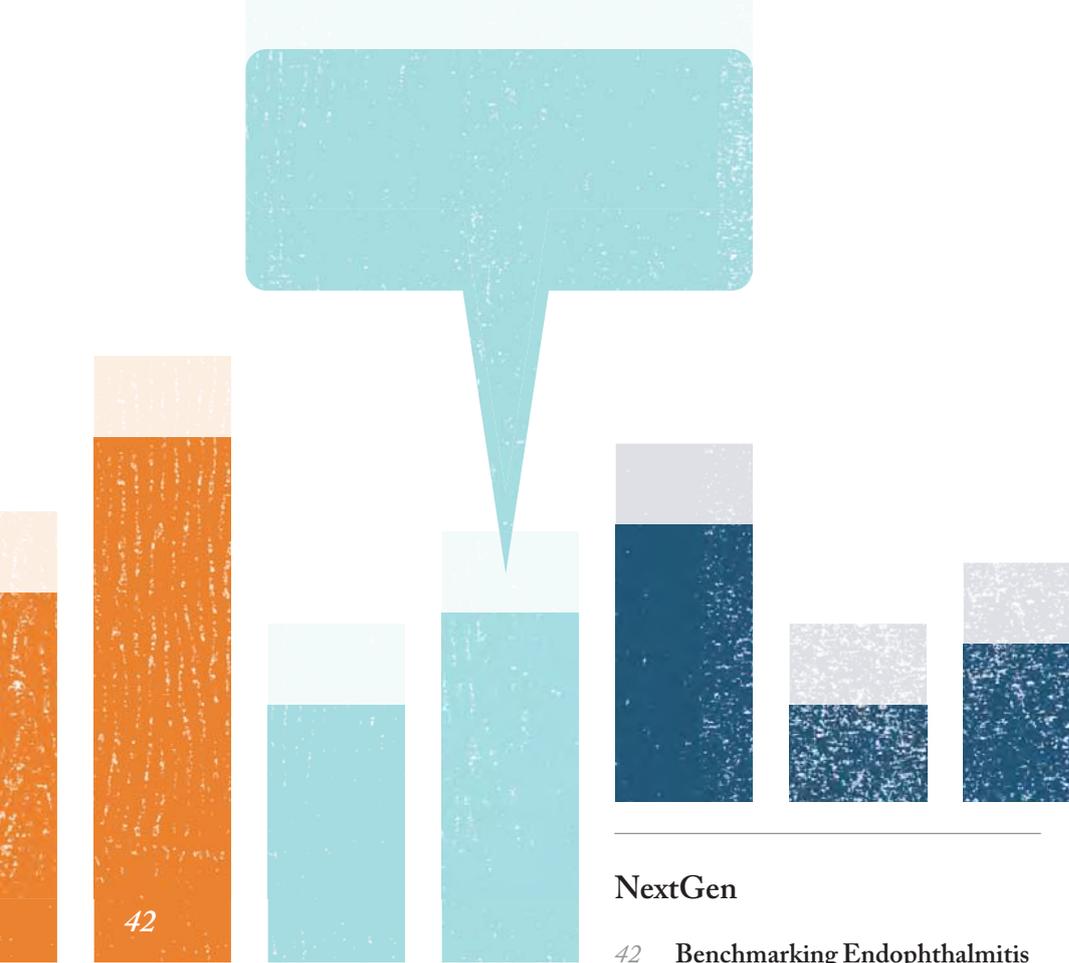
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In Practice

30 **Small Incision Femtosecond Refractive Lenticule Assisted CXL in Corneal Ectasia**

CXL is the only intervention that can slow or halt the progression of corneal ectatic disorders like keratoconus. These disorders thin the cornea – but if the cornea is too thin, CXL can't be performed. Hemlata Gupta and colleagues propose a smart work around that should make you SMILE.

34 **Anti-Spin Doctor**

Florian Kretz reports his early experiences with the Miniflex toric IOL – including which patients are likely to benefit, the additional pre-procedural biometry steps that should be taken, and the rotational stability of the lens.

NextGen

42 **Benchmarking Endophthalmitis**
We examine the last five years of the endophthalmitis literature to see who the major contributors are, what their research foci are, and what types of publications they produce in order to get a grip on where the trends might lead us.

Profession

46 **Lighting the Way for Corneal Cross-Linking**
The Light for Sight foundation provides ophthalmologists around the world with CXL training and ensures that no young patient must go without treatment, writes Nikki Hafezi.

Sitting Down With

50 **Christoph and Thomas Bosshard,**
Oertli Instrumente AG,
Berneck, Switzerland.



Hemlata Gupta

Hemlata Gupta is a surgeon specializing in cataract and refractive surgery with 12 years of experience in the field. A rising star in Indian ophthalmology, she practices at the Centre for Sight, Delhi, India. Hemlata has a special interest in refractive surgery, and has presented papers and given instructional courses at both national and international conferences.

Hemlata and her colleagues discuss refractive lenticules as a safer, more effective way of administering collagen cross-linking to thin corneas on page 30.



Florian Kretz

One of The Ophthalmologist's Top 40 under 40 cadre, Florian is a lead surgeon at the Eyeclinic Ahaus-Raesfeld-Rheine, Ahaus Germany, as well as a consultant ophthalmologist and research fellow at the International Vision Correction Research Centre Network and David J. Apple International Laboratory for Ocular Pathology at the Department of Ophthalmology, University Hospital Heidelberg. When not in the clinic, lab, office, or on the autobahn, Florian enjoys spending time with his wife and young family. Kretz shares his experience using toric IOLs to correct corneal astigmatisms during cataract surgery on page 34.



Nikki Hafezi

Nikki Hafezi is the Managing Director and CEO of GroupAdvance Consulting and EMAGine SA, which provide business development and fundraising advice to companies in the medical technology field, and develop, manufacture and market medical products to address unmet ophthalmic needs. She is also in charge of business strategy and development at the ELZA institute, a new eye hospital and research center in Zurich. Her current focus is translating CXL technology to treat infectious keratitis into clinical applications.

In this issue, she discusses the work being done by the Light for Sight Foundation to reduce preventable blindness among children and adolescents with keratoconus, on page 46.



Keith Barton and Kuldev Singh

Keith Barton runs a joint glaucoma/uveitis clinic at Moorfield Eye Hospital. His research interests include secondary glaucomas, particularly the etiology & management of uveitic glaucoma. He is Editor-in-Chief of the British Journal of Ophthalmology and Chairman of the International Glaucoma Association.

Kuldev Singh is president of the American Glaucoma Society and an advisor to the International Society of Glaucoma Surgery. His research interests include glaucoma and cataract surgical trials, epidemiology, genetics and health care delivery in underserved communities. His clinical practice focuses on medical, laser and surgical management of glaucoma and cataract.

Keith and Kuldev judge this year's candidates for the Ophthalmologist's Innovation Awards on page 19-25.



Lighting the Way for Corneal Cross-Linking

The Light for Sight foundation provides ophthalmologists around the world with CXL training and ensures that no young patient must go without treatment

By Nikki Hafezi

Keratoconus, the progressive thinning and bulging of the cornea, is one of the most common causes of severe visual impairment in young people. A disorder that affects as many as one in every 1,500 people, keratoconus can lead to focusing difficulties, higher-order aberrations and corneal scarring. But it's possible to reduce the impact of this potentially debilitating disease with proper diagnosis and early corneal collagen cross-linking (CXL) treatment to halt its progression. The best time to treat keratoconus is early in

At a Glance

- Keratoconus, a progressive disease that involves corneal thinning and bulging, affects a significant portion of the population, particularly in patients with Down syndrome
- The disease is best treated early, but a lack of screening and awareness often prevents this
- Light for Sight's mission is to increase keratoconus awareness among healthcare providers and ensure that children and adolescents have access to treatment
- The foundation accomplishes this goal by making connections, providing training, and seeking industry support – an ongoing task



the disease, before significant changes in corneal shape and thickness take place – but to do this, we must overcome two obstacles: one, the lack of routine systematic screening for children and adolescents, and two, a lack of childhood keratoconus awareness among health care professionals.

Although research has shown that eye rubbing and hormonal influences both increase the prevalence of keratoconus, one of the highest documented incidence rates is among the Down syndrome population. Thanks to increased expression of collagen genes on chromosome 21, patients with Down syndrome often show altered collagen characteristics – typically an unusual degree of laxity and elasticity. In ophthalmology, the collagen of the cornea shows similar characteristics – and in the cornea, hyperelasticity presents as the thinning and deformation typical of keratoconus. As many as one in 67 patients with Down syndrome has keratoconus, an incidence over 20 times higher than that of the general population.

With the knowledge that awareness presents an obstacle to early treatment,

“We chose the name Light for Sight to reflect that goal – a reference to the use of ultraviolet light to perform CXL, the only surgical intervention proven to arrest progression of keratoconus.”

and that the Down syndrome population has a higher prevalence of keratoconus, my colleagues and I founded Light for Sight – a nonprofit organization whose mission is to combat preventable blindness among



children and adolescents with keratoconus. We chose the name Light for Sight to reflect that goal – a reference to the use of ultraviolet light to perform CXL, the only surgical intervention proven to arrest progression of keratoconus. Light for Sight has been operating for over four years and has brought keratoconus awareness and treatment to both specialized patient groups and the public.

Taking treatment to Tehran

Down Syndrome International, a patient organization based in London, contacted us on behalf of one of their members. The Tajikistani family has a son with Down syndrome and suspected keratoconus. They knew that he needed ophthalmic care to preserve his already limited sight, but they had no access to a corneal

specialist. Time was of the essence, and traveling would be difficult due to political conditions and visa requirements – so Light for Sight began by locating corneal surgeons near Tajikistan. The foundation ultimately contacted Hassan Hashemi, head of the Noor Eye Institute in Tehran, Iran.

Hashemi recommended that the family travel to his clinic's headquarters in Tehran, rather than one of the subsidiaries in Afghanistan, so that he could provide the best possible care. But that raised another obstacle – they had extremely limited funds for travel, lodging and treatment. When Hashemi heard this, the Noor Eye Institute didn't stop at providing treatment; not only did the clinic still accept the patient, but it also agreed to cover all of his medical costs. After his

treatment, the mother wrote, "I don't know how to thank everyone who helped. [My son] felt sick, ate poorly, and did not sleep well. Now he sleeps well, which is most important. [...] He is much more responsive than before with gestures."

Despite all of the geographic, political and financial barriers, the Light for Sight ambassadors were able to step forward and support the wellbeing of patients and their families. "All of the many people who made the connections to the hospital in Iran, all of the people who donated money, an enormous thank you for helping us," said our patient's mother. And that's the goal of our foundation: to provide services to those who might not otherwise have access, so that we can eliminate keratoconus as a cause of treatable vision loss. Thanks to the generosity and philanthropic spirit of our



ambassadors, we were able to achieve that goal with our Tajikistani patient.

Advocating for awareness

One of the newest Light for Sight ambassador groups is also one of our most active. Led by Miltos Balidis, director of corneal and refractive services at Protipo Ophthalmiatrio in Thessaloniki, Greece, the team created a media campaign to increase the awareness of eye problems – including keratoconus – among the Down syndrome population. They strategically launched the campaign on March 21st, World Down Syndrome Day.

The team contacted national television outlets and other media sources to bring more awareness to their work. They organized a mini-symposium in

Thessaloniki on the launch date, inviting international corneal experts to speak on their area of expertise. The program was split into a scientific session, mainly focused on keratoconus and CXL, and an accessible session for health care providers, patients and their families. Conducted at the office of the regional Down syndrome patient organization, television and radio stations translated, recorded and broadcast the ophthalmologists' presentations and the question-and-answer sessions. The audience consisted of Down syndrome patients and their families, vision healthcare specialists and general healthcare professionals. And the campaign didn't stop there – the Thessaloniki-based group have now been invited to three local schools to screen children and adolescents for keratoconus.

“The foundation also works in Tanzania, where it focuses on bringing new resources to a population with limited access to specialized vision care.”



“Training the trainers” in Tanzania
Light for Sight’s mission isn’t limited to patients with Down syndrome. The foundation also works in Tanzania, where it focuses on bringing new resources to a population with limited access to specialized vision care. Sheraz Daya, the chairman and medical director of London’s Centre for Sight, initially approached Light for Sight to ask what he could do to support our international efforts. He also mentioned that he was about to leave for his annual trip to Tanzania, where he visits Comprehensive Community Based Rehabilitation in Tanzania (CCBRT) to examine and treat patients. The hospital, which initially started as a rehabilitation center for patients with cataract, is now the largest indigenous provider of disability services in the country – and we

immediately saw an opportunity to bring CXL to our Tanzanian colleagues.

Light for Sight worked with industry partners to obtain a CXL device. Thanks to a generous donation from the (former) IROC Innocross AG, we were able to provide a lamp for CCBRT. The goal was not just to provide care – Sheraz was there to train his local colleagues on the device during his trip and then leave it with the hospital so that they could provide CXL as a part of routine patient care after his departure. During his 2013 trip to Tanzania, Sheraz was able to screen 45 cornea patients, perform nine corneal grafts, and lead a full-staff training session so that the work could continue in his absence.

What did we learn from this experience? First, that training others to perform

CXL, or any procedure, will have a more lasting effect than simply providing the treatment; and second, that you should never be afraid to ask for industry support for humanitarian initiatives that show promise and long-term benefits.

We’re pleased with the impact that Light for Sight has had so far in raising awareness of, and bringing treatment to, keratoconus patients. But the work never ends with a mission like ours, so we hope to continue providing CXL training and treatment to ophthalmologists, patients and families for many years to come.

Nikki Hafezi is the co-founder of Light for Sight 21, managing director of GroupAdvance Consulting GmbH and the CEO of EMAGine AG, and is based in Zug, Switzerland.