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Alcon Launches the Ngenuity 3D Visualization System

Alcon, a division of **Novartis**, has launched the **Ngenuity 3D** visualization system, a platform for digitally assisted vitreoretinal surgery (DAVS). The system is designed to enhance visualization of the back of the eye for an improved surgeon experience. Alcon is launching the system in collaboration with **TrueVision 3D Surgical**, a California-based company specializing in digital 3D visualization and guidance for microsurgery. The Ngenuity 3D system allows retinal surgeons to operate looking at a high definition 3D screen. This microscope-free design is engineered to improve surgeons' posture and may reduce fatigue. Offering an immersive panoramic surgical view, the Ngenuity 3D system allows the operating team to see exactly what the surgeon is seeing in real-time, and is designed to facilitate collaboration and teaching in the operating room. More information can be found at <https://www.novartis.com/news/media-releases/alcon-launches-ngenuityr-3d-visualization-system-designed-further-enhance>.

Surgeons Use Robot To Operate Inside Eye

Surgeons at **John Radcliffe Hospital** in Oxford have successfully performed the world's first robotic operation inside the eye. After completing the operation, **Professor Robert MacLaren** said, "Current technology with laser scanners and microscopes allows us to monitor retinal diseases at the microscopic level, but the things we see are beyond the physiological limit of what the human hand can operate on. With a robotic system, we open up a whole new chapter of eye operations that currently cannot be performed." The procedure was necessary because the patient had a membrane growing on the surface of his retina, which had contracted and pulled it into an uneven shape. More information can be found at <https://www.theguardian.com/technology/2016/sep/10/robot-eye-operation-world-first-oxford-john-radcliffe>.

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First Response to Anti-VEGF Predicts Macular Edema

A series of 60 patients presented at the **16th EURETINA Congress** suggests for patients with BRVO secondary to macular edema, some features seen on spectral-domain OCT can predict long-term response to anti-VEGF therapy. **Kumar Saurabh, MD**, from the **Aditya Birla Sankara Nethralaya Eye Care Hospital** in West Bengal, India said, "Looking for spectral-domain OCT prognostic factors, like ellipsoid zone, external limiting membrane, and foveal bulge, is more informative one month after the first anti-VEGF injection in branch retinal vein occlusion than at the first visit prior to the first injection." More information can be found at <http://www.medscape.com/viewarticle/868680>.

Fewer Visits for Aflibercept Injection With Observe and Plan

Irmela Mantel, MD, from the **University of Lausanne** in Switzerland presented results at **EURETINA 2016** of a study that shows an "observe-and-plan" regimen for scheduling aflibercept injections improves visual acuity in patients with wet AMD, and could improve the efficiency of clinics treating these patients. Dr. Mantel said, "The take-home message is that the observe-and-plan regimen in neovascular AMD allows for good visual results with the usual number of injections, yet with a strongly reduced number of visits." The study was based on 2-year data for 99 eyes. During the first 12 months, the mean number of injections was 8.7 and the mean number of ophthalmic evaluations was 3.8. During the second 12 months, the mean number of injections was 6.5 and the mean number of ophthalmic evaluations was 2.8. More information can be found at <http://www.medscape.com/viewarticle/868656>.

Handheld Device Created by Duke Researchers Improves Imaging of Children's Retinas

A team of **Duke** researchers has designed a handheld probe capable of imaging the retinas of children in higher definition than ever before. They hope the high-definition imaging will be able to better identify the onset of certain vitreoretinal diseases and study juvenile retinal development. **Francesco LaRocca, PhD**, the principal author of the study, which included researchers from the **Pratt School of Engineering** and the **Duke Eye Center** who helped craft the device, explained that bulky machines requiring stillness and intense focus on the part of children are likely to fail because of a child's limited attention span. A handheld, portable probe removes the need for intense concentration and allows clinicians to image the retinas of children more effectively. More information can be found at <http://www.dukechronicle.com/article/2016/09/handheld-device-created-by-duke-researchers-improves-imaging-of-childrens-retinas>.

Ampio Reports Peer-Reviewed Publication on the Potential Clinical Use of Ampion

Ampio Pharmaceuticals has announced publication of an article in *Biochemical Biophysical Research Communications* discussing the use of **Ampion** in the treatment of diseases such as diabetic macular edema and wet AMD. **Dr. David Bar-Or**, Ampio's chief scientific officer, said, "We reported an important positive effect of Ampion on stabilization of alpha tubulin (a cytoskeleton protein involved in trafficking molecules inside the cell and important in controlling vascular permeability) in retinal endothelial cells, and described the mechanism of action of Ampion and a resulting decrease in leakage of fluid through these cells." More information can be found at <http://www.prnewswire.com/news-releases/ampio-reports-peer-reviewed-publication-on-the-potential-use-of-ampion-in-new-clinical-indications-300324887.html>.

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Prognostic Tests at 1 Month Foretell Macular Edema Outcome

Damian McNamara | September 12, 2016

UPDATED September 14, 2016 // COPENHAGEN — For patients with macular edema secondary to branch retinal vein occlusion, some features seen on spectral-domain optical coherence tomography can predict long-term response to anti-VEGF therapy, a case series of 60 patients suggests.

"Looking for spectral-domain OCT prognostic factors — like ellipsoid zone, external limiting membrane, and foveal bulge — is more informative 1 month after the first anti-VEGF injection in branch retinal vein occlusion than at the first visit prior to the first injection," said Kumar Saurabh, MD, from the Aditya Birla Sankara Nethralaya Eye Care Hospital in West Bengal, India.

In addition, "the higher the reduction in central foveal thickness 1 month after the first anti-VEGF injection, the better the outcome," Dr Saurabh told *Medscape Medical News*.

He presented data from his series here at the European Society of Retina Specialists 16th EURETINA Congress.

The 60 treatment-naïve patients with macular edema secondary to branch retinal vein occlusion were treated with intravitreal bevacizumab 1.25 mg/0.05 mL injections as needed. All presented with a central foveal thickness of at least 300 μ m.

One month after the first injection, the patients underwent spectral-domain optical coherence tomography. Dr Saurabh then assessed the integrity of the external limiting membrane and ellipsoid zone and the thickness of the foveal bulge. Mean follow-up was 16 months.

When he stratified patients by foveal bulge thickness, he found better 16-month outcomes in those who had a reduction from baseline central foveal thickness of more than 25% at 1 month.

The extent of the reduction is a useful prognostic marker, Dr Saurabh reported.

Table 1. Outcomes at 16-Month Follow-up by Central Foveal Thickness at 1 Month

Outcome	$\leq 25\%$ Reduction (n = 23)	$> 25\%$ Reduction (n = 37)	P Value
LogMAR best corrected visual acuity	0.46	0.25	.03
Dry macula	39%	76%	.005

Certain features seen at 1 month on spectral-domain optical coherence tomography also predict 16-month outcomes.

Table 2. Predictors at 16-Month Follow-up by Best Corrected Visual Acuity at 1 Month

Predictor	$< 20/40$ Vision (n = 23)	$\geq 20/40$ Vision (n = 37)	P Value
Intact external limiting membrane	22%	78%	.001
Intact ellipsoid zone	48%	76%	.02
Foveal bulge	9%	32%	.03

"The idea of looking early is good. The study shows that people with a 25% or more reduction will do better," said session moderator Marc de Smet, MD, from the University of Amsterdam.

This could help us plan better.

"You can get a good sense pretty early if someone is going to be a responder or not. This could help us plan better," he told *Medscape Medical News*.

Current practice is to administer three initial doses and then assess response, which can take 6 to 8 months. "If you identify a response sooner, you can switch to a different agent earlier," Dr de Smet explained.

Dr Saurabh has disclosed no relevant financial relationships. Dr de Smet is a consultant for Allergan.

European Society of Retina Specialists 16th EURETINA Congress. Presented September 9, 2016.

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