Fall 2024/Winter 2025 Newsletter

RETINA ASSOCIATES OF KENTUCKY
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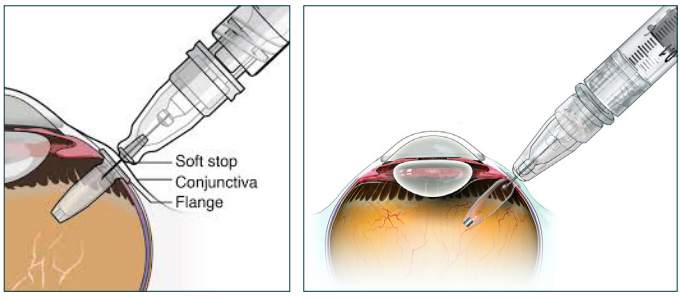
Susvimo: A Game-Changer in Wet AMD Management—Insights from a Retinal Surgeon

Neovascular (wet) age-related macular degeneration (AMD) continues to be a leading cause of vision loss among individuals aged 50 and older. As a retinal surgeon, I've witnessed firsthand the profound impact this condition has on patients' quality of life. The rapid progression of wet AMD, characterized by the growth of abnormal blood vessels beneath the macula, can lead to severe vision deterioration if not promptly and effectively treated.

For years, the cornerstone of wet AMD management has been frequent intravitreal injections of anti-vascular endothelial growth factor (VEGF) therapies. While these injections have been instrumental in preserving vision, they come with significant challenges. Patients often face the burden of monthly or bi-monthly clinic visits, which can be taxing due to age-related mobility issues, transportation difficulties, and the sheer frequency of appointments. This regimen not only strains patients but also places a considerable load on healthcare systems, leading to overcrowded clinics and stretched resources.

Moreover, the repetitive nature of these injections can lead to treatment fatigue. Patients may begin to miss appointments or become less compliant with their treatment plans, risking disease progression and potential vision loss. Recognizing these challenges, the ophthalmic community has been in search of innovative solutions to alleviate the treatment burden while maintaining, or even improving, therapeutic outcomes.

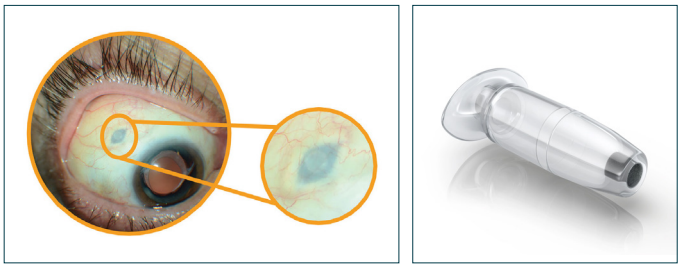
Enter Susvimo (port delivery system with ranibizumab), a groundbreaking advancement approved by the FDA in 2021. Susvimo offers a novel approach by providing a continuous, long-term delivery of ranibizumab through a surgically implanted, refillable reservoir. This system has the potential to revolutionize wet AMD treatment by significantly reducing the frequency of therapeutic interventions.



The Susvimo implant is a small, durable device placed in the sclera during an outpatient surgical procedure. Roughly the size of a grain of rice, it's designed to release ranibizumab consistently over several months. The implant's refillable nature means that, instead of monthly injections, patients may only need to visit the clinic for a refill-exchange procedure approximately twice a year. This minimally invasive process involves replenishing the drug reservoir without removing the implant, offering a significant reduction in treatment burden.

By maintaining steady-state drug levels, Susvimo addresses the peaks and troughs associated with periodic injections. Continuous delivery ensures that therapeutic concentrations of ranibizumab are consistently present in the eye, potentially leading to improved and sustained visual outcomes. This method not only enhances efficacy but also improves patient compliance by simplifying the treatment regimen.

Ideal candidates for Susvimo are patients with wet AMD who have previously responded well to anti-VEGF therapies but find the frequency of injections challenging. Those experiencing treatment fatigue or struggling with compliance due to the demands of regular clinic visits may benefit greatly from this innovative system. It's important, however, to carefully select patients for whom the implant is appropriate. Contraindications include active ocular infections or inflammation, and certain systemic health conditions may necessitate a more cautious approach.



As with any surgical intervention, there are risks associated with the implantation of Susvimo. Potential complications include infection (such as endophthalmitis), bleeding, or vitreous hemorrhage. Device-related issues like implant dislocation is also possible, though advancements in surgical techniques and comprehensive post-operative care have helped mitigate these risks. Patient education is critical; ensuring patients understand how to care for their implant and recognize signs of complications is essential for successful outcomes.

The role of referring eye doctors is critical in the adoption of Susvimo. Optometrists and general ophthalmologists are often the first to identify patients who may be suitable candidates. Recognizing signs of treatment burden, such as missed appointments or expressed frustration with frequent injections, can prompt timely referrals to a retinal specialist.

Collaboration between referring doctors and retinal specialists enhances patient care. Open communication allows for shared management plans and ensures that patients receive comprehensive, coordinated treatment. By working together, we can streamline the referral process and provide patients with access to cutting-edge therapies like Susvimo.

RAK has been actively involved in the development and clinical trials involving this device. We've been involved since the phase two clinical trials and enrolled patients in both the AMD and DME phase 3 clinical studies. In our experience, the introduction of Susvimo has been a significant advancement in the management of wet AMD. Patients appreciate the reduced frequency of treatments and the convenience it brings to their lives. Clinically, we've observed promising outcomes that suggest continuous drug delivery may offer advantages over traditional injection schedules. In the phase 3 ARCHWAY study, 93% of patients preferred the SUSVIMO device over intravitreal injections.

By reducing the treatment burden and potentially enhancing visual outcomes, we can improve the quality of life for those affected by wet AMD. If you have patients who might benefit from this therapy or if you have questions about the implant and its application, please don't hesitate to reach out.

Together, we can make meaningful strides in the fight against vision loss caused by wet AMD. Let's collaborate to provide our patients with the best possible care, leveraging advancements like Susvimo to transform their treatment experience.

Case example is continued on the next page.

Case Example: Susvimo

Submitted By:
John W. Kitchens, MD

My first patient to receive SUSVIMO after FDA approval initially presented to us in 2016. At that time she was an 80-year-old whose chief complaint was "distortion in her right eye." On presentation she was 20/40 and had signs of an occult choroidal neovascular membrane that was subfoveal. We initiated treatment with aflibercept 2mg. As we attempted treat and extend dosing, she would have worsening subretinal fluid and symptomatic decreased vision at five weeks post treatment. This continued for a total of four years at which time she was still receiving injections on a monthly basis. She readily agreed to be the first patient in the world to undergo implantation of the SUSVIMO device post approval.

The surgery went well and her vision improved to 20/25 two weeks after the procedure. She did not require additional treatments until the six month visit when her implant was refilled. After the first refill, we saw her back seven months later and she still was doing well with no leakage. We refilled her a second time at this point and she returned eight months later. At that visit, she had active leakage and so we decided to treat her more conservatively every six months going forward. After two additional refills, she is now 20/25 and says she is seeing better than she ever has. Her case is a great example of the benefits of sustained disease control reducing treatment burden while improving her vision.

Figure 1

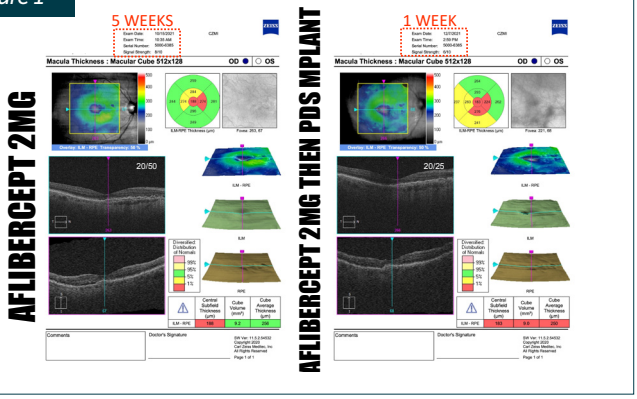


Figure 2

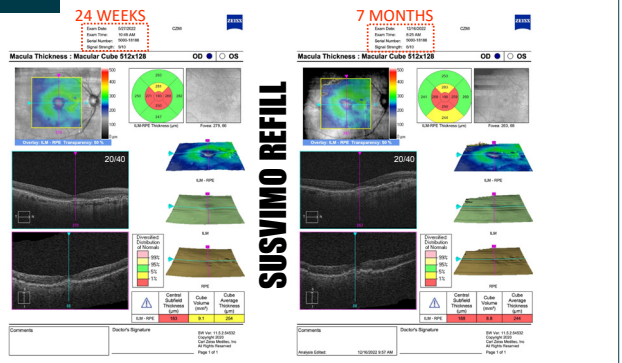


Figure 3

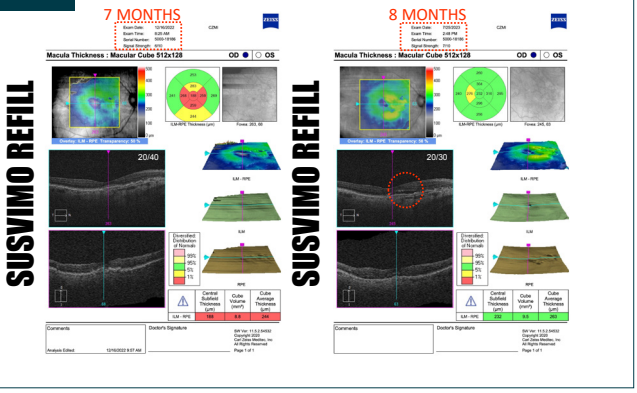
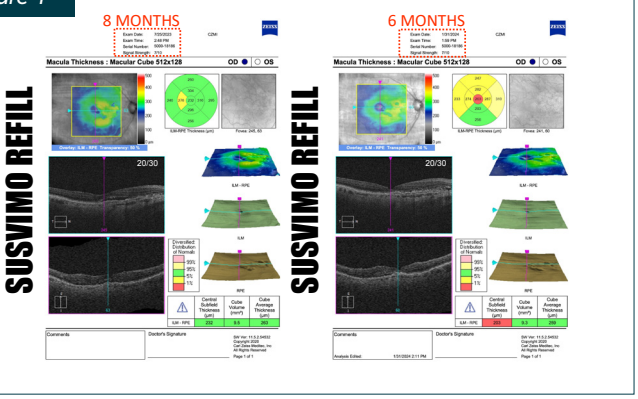


Figure 4



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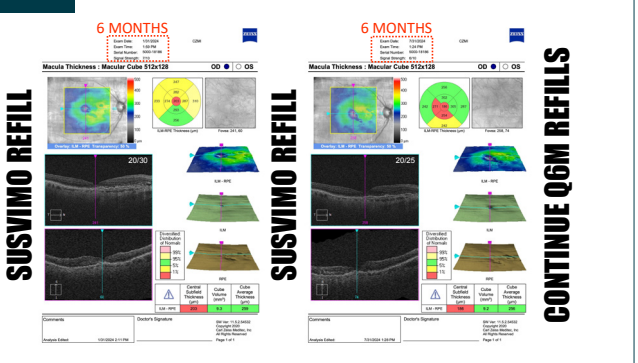

"Her case is a great example of the benefits of sustained disease control reducing treatment burden while improving her vision. She is now 20/25 and says she is seeing better than she ever has."

A Message of Gratitude

To our valued colleagues in the eye care community, we thank you for your support and entrusting us with the care of your patients. **We look forward to our continued collaboration!**

Case Study: Retinal Arteriolar Macroaneurysm

Submitted By: **Sara LeMay, OD** – Seeing Patients in Ashland and Paintsville
Peer Reviewed By: **Dr. Aaron M. Ricca, MD**

CASE PRESENTATION

(Figure 1) A 69 year old female presented with complaints of a sudden-onset scotoma and blurred vision in her left eye for two days. She denied floaters, flashes, pain or previous head trauma. Her medical history was notable for hypertension that is poorly controlled on a single agent, hypercholesteremia that is well controlled on a single agent. She also reports a medical history of rheumatoid arthritis, and chronic obstructive lung disease.

EXAMINATION

The best-corrected visual acuity in the right was 20/20 and in the left eye was 20/40. There was no afferent pupillary defect. Confrontation visual fields were full to finger count in both eyes and extraocular muscle movements were full in all positions of gaze. Intraocular pressures were within normal limits in both eyes.

The dilated fundus examination was performed and in the right eye there was arteriole constriction and arteriovenous nicking. In the left eye there was arteriovenous nicking and a multilayered hemorrhage involving the preretinal, intraretinal, and subretinal space overlying an arteriole. On spectral domain optical coherence tomography (SD-OCT) imaging in the left eye there was a hemorrhagic neurosensory detachment and intraretinal fluid detected ***(Figure 2)***. A fluorescein angiography was ordered, but due to blockage from extensive overlying hemorrhage a focal lesion was not able to be identified ***(Figure 3)***.

This patient was diagnosed with a retinal arteriole macroaneurysm in the left eye. After review of management options which included observation, photocoagulation, and intravitreal anti-vascular endothelial growth factor (anti-VegF) therapy, the patient was treated with intravitreal anti-VegF due to the macular hemorrhage. This hypertensive patient was also referred to her primary care physician to be evaluated for optimal blood pressure control.

DISCUSSION

Retinal arteriolar macroaneurysm (RAM or RAMA) is an acquired dilation of a retinal arteriole usually within the first three orders of bifurcation. Typically this occurs in the sixth and seventh decade of life, and hypertensive women make up the majority of cases. The superior temporal artery is the most commonly reported site when vision is affected.

It is possible for a patient to present with an asymptomatic RAM, however, there can be a decline in central visual acuity due to retinal edema, hemorrhage, or exudation. Patient's with a RAM can present in three clinical forms:

Quiescent: Seldom does the patient have symptoms; this can be a incidental detection on examination.

Hemorrhagic: Rapid vision deterioration (in the case of above patient) with a characteristic multi-layered hemorrhage that involves the vitreous, preretinal, intraretinal, and subretinal spaces.

Exudative: Defined by lipid deposition in a circinate pattern and has a more gradual course than hemorrhagic.

In the example case, the patient had an extensive hemorrhage due to the rupture of the RAM which presented diagnostic challenges. The pathognomonic sign that confirms diagnosis is detection of the saccular or fusiform dilation of an arteriole wall. However, important diagnostic clues can lead to the correct diagnosis, such as hypertensive retinopathy signs in the contralateral eye, and the multi-layered hemorrhage concentrated over a arteriole bifurcation in the affected eye.

A RAM can involute spontaneously however treatment for this can be beneficial in the presence of associated macular edema, intraretinal exudate or hemorrhagic neurosensory detachment. The risk of permanent vision loss has been shown to increase when hemorrhages in the sub macular space produced morphological damage to the retinal pigment epithelium and photoreceptors. Subretinal blood is toxic to the retina and can cause severe, irreversible damage.

There are several treatment options for a RAM but there is not a consensus on which one is most effective. Observation is recommended in patients that are asymptomatic without vision threatening findings. Other treatment options for patient's with exudation and hemorrhage include: focal laser photocoagulation, intra-vitreal anti-VegF, yttrium aluminum garnet (YAG) laser membranectomy, and/or pneumatic displacement in office. A clinician might also consider a surgical intervention of pars plana vitrectomy, tissue plasminogen activator (TPA) and gas fill for pneumatic displacement. Clinical presentation guides the clinician on the most effective treatment option.

Figure 1

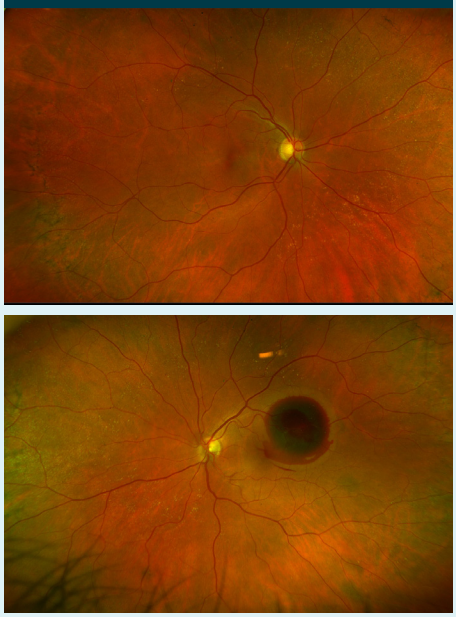

Figure 2

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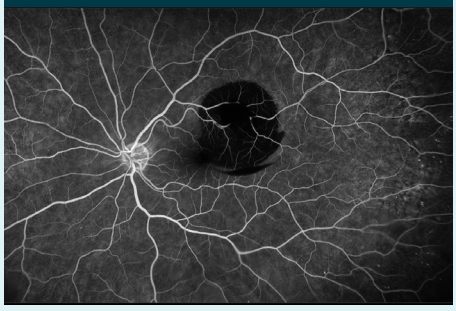
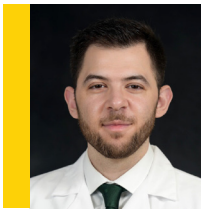


Meet Our Fellows

Retina Associates of Kentucky is proud to partner with the University of Kentucky to offer a joint fellowship program offering excellent post-residency fellowships in diseases and surgeries of the retina.

Aleksandr Kruglov, MD

Aleksandr Kruglov, MD graduated with honors in 2014 with a Bachelor of Science (Physics) and Bachelor of Commerce from Queen's University in Kingston, Ontario. He received his medical degree in 2019 from SUNY Upstate Medical University in Syracuse. Dr. Kruglov continued his education in Memphis, TN, completing his ophthalmology residency at the Hamilton Eye Institute UTHSC in 2022 and went on to St. Jude Children's Research Hospital for fellowship in Ocular Oncology. Dr. Kruglov has published several peer reviewed articles and presented at the American Association of Ophthalmic Oncologists and Pathologists in 2022.



Fareed Rifai, MD

Fareed Rifai, MD graduated in 2015 with a Bachelor of Science in Biochemistry, and a minor in Chemistry and Psychology from the University of Miami. Dr. Rifai moved to Mobile, Alabama and received his medical degree in 2019 from the University of South Alabama College of Medicine. He then moved to New Orleans, Louisiana to do a preliminary year in Internal Medicine at Tulane University. He remained in New Orleans to complete his ophthalmology residency at Tulane where he was selected as Chief Resident by peers and faculty during his senior year. He was awarded the Outstanding Research Presentation honor at the annual O'Brien's Research Day as a second-year resident, an honor given to one resident a year.

Paras Vora, MD

Paras Vora, MD graduated from Washington University in St. Louis in 2015 with a Bachelor of Science in Biomedical Engineering and Computer Science. Dr. Vora then relocated to Lexington, KY, obtaining his medical degree in 2020 from the University of Kentucky College of Medicine. Dr. Vora continued his education at the University of Kentucky, completing his residency in the Department of Ophthalmology and Visual Sciences. He was awarded the Mark Gross Research Award along with the Development and Innovation Award during this time. Dr. Vora has also been the recipient of the Outstanding Leadership and Community Service Award from the University of Kentucky.

Come Visit Us!

If you would like to observe any of our physicians in clinic or the operating room, please contact Marisa Riding, Practice Liaison, at mriding@retinaky.com. **We look forward to hosting you!**

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