

VBS 2018: SIX ON THE BEACH

PART 3 OF OUR THREE-PART COVERAGE.

Tips and tricks are the topics of conversation in the final three talks we chose to highlight from the sixth annual meeting of the Vit-Buckle Society (VBS). To wrap up our coverage of this year's meeting, Rehan M. Hussain, MD; Laura L. Snyder, MD; and Akshay Thomas, MD, MS, share highlights from presentations by Dimitra Skondra, MD, PhD; Rishi Singh, MD; and Yewlin Chee, MD, on managing diabetic retinal detachments, developing and integrating the latest technologies into the OR, and performing secondary vitrectomy following open globe injury.

The fellows we selected to summarize these presentations did an excellent job rounding out our coverage of the sixth annual VBS meeting. We look forward to seeing what next year's meeting will have to offer.

—R.V. Paul Chan, MD, MSc; Anton Orlin, MD; AND Aleksandra Rachitskaya, MD

TIPS AND TRICKS FOR MANAGING DIABETIC TRDs



By Rehan M. Hussain, MD

Dimitra Skondra, MD, PhD, of the University of Chicago, shared some tips and tricks for managing patients with diabetic tractional retinal detachments (TRDs). She began by noting the importance of having a good view for these complex surgeries. For this reason, Dr. Skondra noted, she has a low threshold for referral for cataract surgery before performing vitrectomy. Dr. Skondra said that she is cautious when performing combination phacoemulsification-vitrectomy because corneal edema can cause the view to deteriorate. "Placing 50% dextrose on the cornea with sodium chondroitin sulfate-sodium hyaluronate (Viscoat, Alcon) overlying it can improve the view," she stated. Once medical clearance has been obtained for surgery, Dr. Skondra administers an intravitreal injection of bevacizumab (Avastin, Genentech) 2 to 4 days preoperatively to reduce intraoperative bleeding, which can make these cases more challenging.

REMOVE TRACTIONAL FORCES

To remove tractional forces, Dr. Skondra advised meticulous removal of membranes and the hyaloid using hybrid 23- and 27-gauge instrumentation, along with a delaminating blunt spatula, vertical Grieshaber membrane peeler-cutter scissors (Alcon), and internal limiting membrane forceps. "It is not necessary to peel absolutely every membrane," she pointed out. "It is acceptable to leave residual fronds as long as they are disconnected from other fronds and traction is released." Dr. Skondra noted that a high magnification macular lens can be useful for optimal visualization in broadly adherent plaques over the arcades and the disc. "Be patient and persistent," she advised. "If you create a retinal break, remove the plaques and relieve traction. If it is not possible to remove



During her presentation at VBS Dr. Skondra offered pearls for treating patients with diabetic TRDs.

Photo courtesy Kevin Caldwell

plaques and relieve traction around the break, then you can perform a focal retinectomy."

Larger retinectomies may be needed, Dr. Skondra noted. Gentle diathermy is used to mark retinal breaks and to stop bleeders. Sometimes it can be useful to temporarily reduce IOP to 15 mm Hg for a few seconds at the end of the procedure to see if there are any residual occult bleeders that may need additional diathermy.

REMOVE THE HYALOID

Dr. Skondra emphasized the importance of removing as much of the posterior hyaloid as possible because it can be a scaffold for postoperative proliferation. She stains with triamcinolone

acetamide injectable suspension 40 mg/mL (Triesence, Alcon), sometimes multiple times, after she has finished peeling membranes and plaques because there is usually more hyaloid than one realizes, especially between residual fronds. Dr. Skondra also uses a Finesse Flex Loop (Alcon) to mobilize adherent hyaloid remnants. “As with all patients with proliferative diabetic retinopathy, complete panretinal photocoagulation is essential,” she said. She uses scleral depression with an endoilluminated flexible curved laser to make sure there is good coverage of the anterior retina.

WRAPPING UP

At the completion of surgery, Dr. Skondra uses a long-acting gas tamponade (14-16% C₃F₈) and instructs patients to maintain prolonged facedown positioning for 2 to 3 weeks in almost all cases—both TRDs and TRDs combined with rhegmatogenous retinal detachments (RRDs). She also mentioned that she rarely uses silicone oil, even in complex combined TRD-RRDs, limiting its use to when extensive inferior retinectomy is needed (about 5% of cases).

“Long-acting gas tamponade with prolonged facedown positioning can protect an eye from secondary retinal detachment caused by microscopic retinal breaks that may form intraoperatively, postoperatively, or from laser spots, while panretinal photocoagulation laser scars form a barricade effect,” Dr. Skondra stated. She frequently administers 125 mg intravenous methylprednisolone sodium succinate (Solu-Medrol, Pfizer) and sub-Tenon triamcinolone acetamide injection after surgery to help control postoperative inflammation and prevent fibrin formation.

With these techniques, Dr. Skondra noted, she has achieved an impressive 98% primary reattachment rate with one surgery, and approximately 72% of patients in a large series of complex diabetic TRDs had postoperative visual acuity of 20/200 or better.

3D VISUALIZATION SYSTEMS WITH HEADS-UP DISPLAYS ALLOW EVERYONE IN THE OR TO HAVE AN AUGMENTED VIEW OF THE ACTION AND OPTIMIZE THE EDUCATIONAL EXPERIENCE FOR THOSE NOT PERFORMING SURGERY.

—RISHI SINGH, MD

TIPS AND TRICKS FOR MAXIMIZING YOUR 3D VIEW AND EXPERIENCE



By Laura L. Snyder, MD

Rishi Singh, MD, of the Cole Eye Institute, spoke about how to get the

most out of 3D surgical viewing systems. Dr. Singh has found many ways to practically incorporate a multitude of machines in the OR to maximize the educational experience of fellows and residents while also providing cutting-edge care for patients. The first and perhaps most important component when upgrading an OR, he said, is to be aware of the technologies available.

Dr. Singh highlighted advances in multispectral diagnostic equipment that have flowed from the clinic to the operating suite. Integration of intraoperative OCT brings real-time data directly into the surgeon’s view to

facilitate difficult peels and dissections. Similarly, 3D visualization systems with heads-up displays allow everyone in the OR to have an augmented view of the action and optimize the educational experience for those not performing surgery.

Specifically, 3D visualization allows an ultrawide field of view while maintaining high definition resolution imaging that can be adjusted to highlight and enhance visualization of different retinal layers without high levels of endoillumination that can risk retinal toxicity. Video capabilities also allow trainees to review cases later with their mentors and receive practical feedback. Many other presenters at the VBS meeting also said they utilize 3D viewing software when operating or training fellows in the OR, and several presented excellent quality videos to demonstrate techniques.

Naturally, technology comes with a cost. Both financial and practical considerations must be taken into account in deciding when and how to incorporate these options into the OR setup. If the cost of purchasing a new scope versus transitioning to a heads-up display is an issue, Dr. Singh suggested considering a third option: upgrading the current microscope with 3D equipment. This offers the advantage of prolonging the microscope’s lifespan while updating

▶ DR. SINGH’S RECAP ◀



▶ [BIT.LY/SINGH0918](https://bit.ly/singh0918)

the OR with more modern technology. Dr. Singh emphasized the importance of spending time with the new equipment before using it in a case. OR staff should arrange the new viewing platform around an empty stretcher to minimize the time needed once the patient is in the room and to maximize the anesthesia personnel's access to the patient. Correct positioning of the scope at the beginning of each case is also paramount to augment visualization and maintain excellent depth of focus throughout the case.

Retooling an OR is a time-consuming process that requires enthusiasm, foresight, and a team approach, Dr. Singh said, but ultimately, it can enhance patient outcomes and the education of the next generation of retina surgeons.

TIPS AND TRICKS FOR MANAGING TRAUMA WITHOUT DRAMA



By Akshay Thomas, MD, MS

Yewlin Chee, MD, of the University of Washington, a large quaternary trauma center, discussed tips for secondary vitrectomy following open globe injury. She emphasized the importance of knowing the details of the initial injury, such as the mechanism of trauma, whether there was penetrating or perforating injury, the location of the laceration, and how it was repaired. The indications for secondary vitrectomy include persistent media opacity, endophthalmitis, progressive vitreous and/or retinal traction, and retinal detachment. She advocated for intervention within 1 to 2 weeks of the initial open globe repair.

Below are the steps she outlined for surgery.

- 1. Drainage of Choroidals.** If preoperative B-scan shows evidence of choroidals with a liquefied component, drainage of choroidals is performed. This is done by placing an anterior chamber infusion and then making a radial sclerotomy.
- 2. Placement of a Scleral Buckle.** If no choroidals are present preoperatively, a scleral buckle is often placed to support the vitreous base.
- 3. Lensectomy.** If there is a traumatic cataract impairing visualization of the posterior segment, lensectomy is performed with removal of all capsular material, which could serve as a potential nidus for anterior membrane formation if left in place.
- 4. Vitrectomy.** Dr. Chee stressed that identification of surgical planes is not always clear when vitrectomy is performed after an open globe injury. She performs vitrectomy with gradual removal of vitreous hemorrhage, layer by layer, until the retina is identified.
- 5. Membrane Peeling.** Next, membrane peeling is undertaken to help relax the retina and open a closed funnel detachment, if present.
- 6. Use of PFCL.** If a funnel detachment is present,

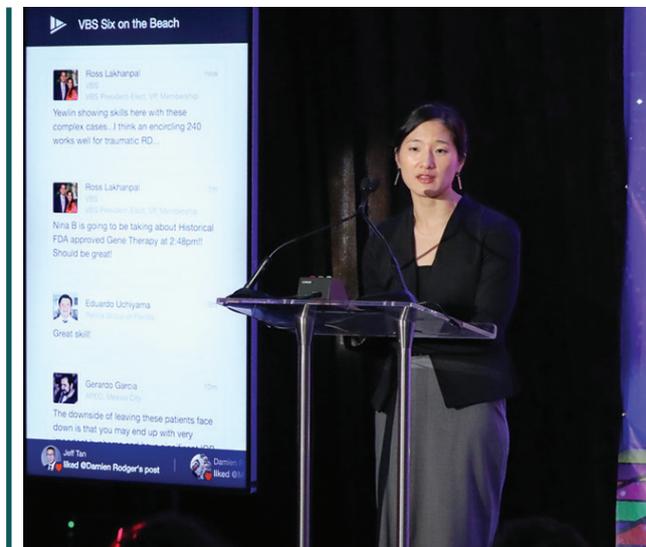


Photo courtesy of Kevin Caldwell

Dr. Chee shared eight steps for minimizing drama when performing surgery to repair an open globe injury.

perfluorocarbon liquid (PFCL) is instilled to flatten the posterior pole and allow visualization of the optic nerve.

- 7. Retinectomy Around Areas of Retinal Incarceration.** If there are areas of retinal incarceration, diathermy is applied around the edges of incarceration and a relaxing retinectomy is performed.
- 8. Finishing Up.** Before closing, the retina is completely flattened with PFCL, all retinal breaks are treated with endolaser, a fluid-air exchange is performed, and silicone oil is injected for tamponade. In eyes with minimal residual iris tissue, oil retention sutures may be placed.

Using this stepwise approach presented by Dr. Chee, secondary vitrectomy following open globe injuries may indeed be free from all drama! ■

REHAN M. HUSSAIN, MD

- Second-Year Vitreoretinal Surgery Fellow, Bascom Palmer Eye Institute, University of Miami Health System, Miami, Florida
- rhussain27@gmail.com
- Financial disclosure: None

LAURA L. SNYDER, MD

- Second-Year Vitreoretinal Surgery Fellow, Vanderbilt Eye Institute, Nashville, Tennessee
- laurasnyder08@gmail.com
- Financial disclosure: None

AKSHAY THOMAS, MD, MS

- Private Practice, Tennessee Retina, Tennessee
- akshaystomas@gmail.com
- Financial disclosure: None