RETINAWS

Highlights from the symposium held during 2009 EVRS Meeting in Marrakesh, Morocco

RETINAWS was presented for the first time during the 2010 annual meeting of the European Vitreoretinal Society (EVRS). It took place on Saturday September 5, 2009 at the Palmeraie Golf Palace in Marrakesh. Below you will find a brief description of the cases presented. RETINAWS was recorded live and can be watched on www.eyetube.net. We would like to thank EVRS for the invitation, Dr. Didier Ducournau for helping with all the logistics, and Alcon Laboratories, Inc., for sponsoring the recording. We hope you enjoy it.

-Kourous A. Rezaei, MD

FRANK KOCH, MD

Frankfurt, Germany

Accidental Staining

One day what happened to me might happen to anyone: I was planning to inject indocyanine green (ICG) to visualize the internal limiting membrane (ILM) and create a cleavage plain in a retinal vein occlusion case. I asked for "the green stuff"—a command which, ideally, should be avoided. Following the injection of 0.1 cc of the "dye" I turned off the infusion line for 30 seconds. After reopening the infusion I started to remove the dye that was floating in the vitreous cavity. Another 2 minutes later, I realized that the staining was very intense. The nurse indicated that this might be because I had injected fluorescein dye. Fluorescein actually stained the residual vitreous nicely, specially in the outermost periphery, but did not stain the ILM. At this point I decided to add ICG for ILM staining. The ICG induced a contrast; however, it was not as intense as usual. A clean cleavage plain was created by the ICG and the ILM was peeled safely. The peripheral retina could be visualized without difficulty. Subsequent fluorescein angiography and optical coherence tomography (OCT) did not indicate any abnormality.

JERZY NAWROCKI, MD

Lodz, Poland

Air Bag-induced Retinal Detachment

A 50-year-old woman presented following a minor motor vehicle accident. She was wearing glasses and had ocular trauma caused by an airbag. Total retinal detachment with large retinal dialysis and some additional retina defects were found. Combined circumferential scleral buckling and vitrectomy with silicone oil were performed. The video presents important steps of the surgery. Subsequently, phacoemulsification of the cataract and silicone oil removal were performed. Visual acuity improved from counting fingers to 0.6.

Inverted ILM Flap Technique for Extremely Large Traumatic Macular Hole

A 20-year-old man presented with a binocular trauma. Because of the presence of choroidal neovascularization, he had received three injections of ranibizumab (Lucentis, Genentech, Inc.) in another department. During the 6 months follow-up, a large macular hole (minimum diameter or 1268 µm, base diameter or 1958 µm) developed. The video presents a new method of treatment called the inverted ILM flap technique. After vitrectomy, ILM is peeled up to the margins of the macular hole and then the macular hole is covered with the inverted peeled ILM flap. Fluid air exchange follows. Spectral-domain OCT shows that initially the macular hole is only closed with the ILM flap. During the follow-up retina tissue appears to fill the foveal center and close the macular hole.

Unusual Macular Traction

A case of longstanding traction on the macula causing macular hole is presented. The traction between fovea and optic disc produced the splitting between the inner and outer layers of the retina. This is clearly visible during ILM peeling, when finally some retina tissue is removed. Final result was a flat open macular hole, which was probably caused probably by the lack of tissue to cover the fovea. This case led us to the development of the inverted ILM flap technique.

KLAUS LUCKE, MB, ChB

Bremen, Germany

Tying the Feeder Vessels of a Von Hippel Lindau Tumor

Being faced with a large von Hippel Lindau tumor in the OR, excision seemed like the only sensible option. The enormous caliber vessels feeding the tumor mass, however, made it a daunting task. Whereas endodiathermy under raised intraocular pressure (IOP) is the usual method of controlling the bleeding, in this case the risk of an uncontrolled hemorrhage resulting in total disaster seemed too high. It was therefore decided to borrow a standard method from general surgery. Creating two small retinotomies by endodiathermy on either side of the two feeder vessels, a 10-0 Prolene suture without needle was fed underneath the retina

using the Thomas forceps that are generally used for subretinal CNV removal. The Prolene was then tied bimanually within the eye with two crocodile microforceps using a chandelier for illumination. The challenge here was the strength with which to tie the knot. If it were too strong and the suture might cut into the vessels resulting in uncontrolled hemorrhage and too soft and the vessels might bleed after being severed. In the case presented here we were lucky, after tying off the feeder vessels the tumor could be excised without any significant bleeding. Six months later the retina was attached and the eye was free of active tumor.

Removal of Emulsified Heavy Silicone Oil

A patient was referred for silicone oil removal which usually does not cause much concern. However, in the presented case, the eye had been filled with heavy silicone oil, a mixture of silicone oil and a semifluorinated alkane. Some of these heavy "oils" have a number of properties which are different from the regular silicone oil, ie, they stick to the posterior pole during removal and they can be extremely difficult to extract. Most notable, however, is their propensity for massive emulsification. In this case we spent over 1 hour removing droplets from the anterior chamber, the space between IOL and the posterior capsule and finally from the posterior pole and from the optic nerve cup. The video presented is food for thought as to whether the advantage of having a tamponade heavier than water warrants the use of materials that cause such enormous amounts of emulsification and are almost impossible to be removed completely.

Gas in the Anterior Chamber

It is reasonably well known that a silicone oil bubble in the anterior chamber can cause pupillary block glaucoma and therefore inferior Ando iridotomy is recommended in aphakic eyes. We report a case where such a problem occurred in a pseudophakic eye filled with gas. The patient had been operated on for primary rhegmatogenous pseudophakic retinal detachment and ,at the conclusion of surgery, a gas bubble from the posterior pole found its way through the weakened zonular system into the anterior chamber. Removal was attempted, but the problem recurred and eventually a small bubble was left in the anterior chamber. During the night the patient experienced pain, nausea, and vomiting but did not alert our staff. The next morning the IOP was found to be over 65 mm Hg, the anterior chamber was shallow and the iris showed a bombé configuration. Vision was NLP! A Nd:YAG iridotomy relieved the block effectively but came too late to save visual function. The take home message here is this: if it seems unavoidable to have silicone oil or gas entering the anterior chamber, a small inferior peripheral iridotomy should be made preemptively to prevent the development of a pupillary block glaucoma.

MARIA BERROCAL, MD

San Juan, Puerto Rico

Subretinal Infusion for Contracted Chronic Traction Retinal Detachment With Foveal Infolding in Proliferative Diabetic Retinopathy

A 32-year-old woman presented with with insulin-dependent diabetes milletus and decreased visual acuity of 8 months duration. Fundus exam revealed a traction retinal detachment caused by a large sheet of thick fibrovascular proliferation. Pars plana vitrectomy was performed with viscodissection to remove the fibrovascular tissue. The retina was dragged toward the optic nerve and the fovea was tucked under a retinal fold in the posterior pole. To unfold the retina, subretinal infusion of balanced salt solution through a 41-gauge cannula was performed to detach the retina, in the manner used for retinal translocation. Perfluorocarbon liquid was injected to move the subretinal fluid and detach the retina in the area of the fold. The retina was massaged to free the fold and flatten the fovea. A fluid/air exchange was performed, laser endophotocoagulation was applied to breaks and perfluoropropane was left in the eye. At 6 months, postoperative visual acuity had improved to 20/400.

Twenty-three–gauge Suprachoroidal Infusion

Suprachoroidal infusion can occur at the beginning of the case from inadequate penetration or during the case from extrusion of the infusion cannula. It is more common in 23-gauge cases because of the longer tunnel performed during the cannula/trocar placement. To avoid this, correct wound construction is key. Avoiding a very long tunnel, checking for complete entry of the infusion cannula at the beginning of the case, and securing the infusion to avoid inadvertent pulling are ways to reduce this complication. Management of the complication includes repositioning of the cannula, removal of the infusion and replacement in the superior cannula, and then making a new sclerotomy with a trocar/cannula inferonasal and moving the infusion to that location.

Enhanced Epiretinal Membrane View

In this video, the view through the macular window lens by AVI-panoramic lens is shown. This is a flat, self-retaining macula lens which allows optimal visualization of ERM and the ILM. The view makes it possible to remove membranes without the need of staining dyes in many cases.

KOUROUS REZAEI, MD

Chicago, IL

Twenty-three–gauge Trocar Insertion

Various issues with 23-gauge trocar insertion are demonstrated. Stanislao Rizzo, MD, presented two cases showing anterior and posterior insertion of

23-gauge trocars. Further, I presented a case in which the 23-gauge trocar for the infusion cannula is inserted into the eye and although fluid regressed out of the trocar, it was still under the pars plana. This was detected and the tip was released using the vitreous cutter.

Twenty-three–gauge Peripheral Vitreous Shaving in Phakic Patients

The technique of vitreous shaving using 23-gauge vitrectomy system is demonstrated in a phakic patient. Twenty-seven–gauge chandelier lights are inserted into the eye to enable illumination without the need of light pipe. The free hand is used for scleral depression. The narrow shaft of the scleral depressor is used since it is easier to move it around the globe and also reduces the risk of getting conjunctival tears. During this maneuver the IOP is reduced to 10 mm Hg to 20 mm Hg based on the rigidity of the sclera. Low suction and maximum cut rate is used to avoid peripheral tears. It is important that the shaft of the cutter is almost parallel to the sclera (it should not be angled) to avoid contacting the lens. This technique allows a thorough shaving of the peripheral vitreous in phakic patients.

STANISLAO RIZZO, MD
Pisa, Italy

Deep Blue: A Modified Technique for Trypan Blue Staining

In determining the success of surgery for retinal detachment with proliferative vitreoretinopathy, the complete identification and removal of epiretinal tissues, including posterior hyaloids and epiretinal membranes (ERMs) is critical, and can be facilitated through the staining of epiretinal membranes enhancing their visualization. Trypan blue (TB) is a vital dye that selectively stains ERM, especially if they are mature. It is recommended that after a complete vitrectomy, a balanced salt solution-air exchange is performed, 0.1 mL of TB 0.15% is injected into the eye, and is incubated for 1 minute.

The main obstacle with this technique is that TB forms a bubble on the posterior pole and its high superficial tension in air impedes its even spread over the retinal surface, resulting in inhomogeneous, and ineffective ERM staining. To improve TB spreading on the retinal surface, the dye is injected into the air filled eye followed by liquid perfluorocarbon injection. PFCL steam roles the dye over the retinal surface, resulting in a more homogeneous staining of the ERM. This technique is demonstrated in a patient with PVR: fluid-air exchange is performed : then 0.1 ml of 0.06 % of TB solution is injected into the air-filled eye, followed by liquid perfluorocarbon injection. The excess dye is aspirated and an air-fluid exchange is performed to flush out the residual TB. The ERM is then removed under PFCL, using microforceps.

"Ice-cream Cone" Technique for Pars Plana Lensectomy

Pars plana extraction of a dropped lens may be challenging, especially when dealing with hard nuclei. As ultrasound is delivered by the fragmatome it may push the nucleus away from the tip. This video presents a technique using a tissue manipulator, that holds and stabilizes the nucleus in the middle of the vitreous chamber. This technique allows us to remove the lens slowly, safely and easily, like eating an ice-cream cone.

Surgical Embolectomy for Branch Retinal Artery Occlusion (BRAO)

We demonstrate a surgical technique for removal of the emboli in a patient with BRAO. Pars plana vitrectomy and longitudinal incision of the anterior wall of the occluded arteriole is performed to remove the embolus. Twenty-five–gauge pars plana vitrectomy was performed and the posterior hyaloid was separated. A longitudinal incision was made adjacent to the embolus in the anterior wall of the arteriole with a 25-gauge microvitreoretinal blade. When bleeding was observed, the intraocular pressure was increased to 90 mm Hg and a silicone-tipped cannula was used to remove the intravitreal blood. Vitreoretinal forceps were used for expressing the embolus out of the retinal artery since the dissection of the blood vessel alone was not sufficient to remove the embolus. Vasospasm clotted blood closed the incision. ■

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