**Title**

"Pit Stop & What Lies Beneath!" - Modified Fovea-sparing Internal Limiting Membrane (ILM) peeling for Optic Disc Pit Maculopathy

**Purpose**

To evaluate modifications of fovea-sparing ILM peeling in the management of optic disc pit maculopathy.

**Setting/Venue**

Consecutive patients with optic disc pit maculopathy attending the Retina Service at Drishti Eye Institute, Dehradun, India

**Methods**

Preoperative best corrected visual acuity (BCVA), fundus photographs & Spectral Domain (SD-OCT) were recorded. Patients underwent intravitreal triamcinolone acetonide (IVTA) assisted 25G vitrectomy; Brilliant Blue G (BBG) dye assisted juxtapapillary (fovea-sparing) ILM peeling with either: 1. removal of peeled ILM, or 2. stuffing of peeled ILM into the optic pit, or 3. 41G cannula drainage of macular neurosensory detachment (NSD) with stuffing of peeled ILM into pit, or 4. temporal ILM Flap fashioning and apposition over pit; and air fluid exchange with C3F8 gas tamponade followed by postoperative positioning.

**Results**

All patients achieved closure of optic disc pit. The patients with ILM flap removal, ILM flap stuffing and ILM flap stuffing with retinal fenestration showed complete resolution of macular NSD and retinoschisis at 10 months, 18 months and 17 months follow-up respectively with the BCVA improved to 6/6, 6/9, and 6/9 respectively. At last follow up at 6 months, the patient with temporal ILM Flap apposition showed significant resolution of NSD and retinoschisis with BCVA improved to 6/18.

**Conclusions**

All four modifications of fovea-sparing ILM peeling successfully achieved closure of optic disc pit with resolution of maculopathy and good visual outcome. Epilogue: A 17 year old boy with optic pit maculopathy and gross NSD underwent 25G vitrectomy. During PVD induction, initially there was poor staining of preretinal cortical vitreous at posterior pole. During subsequent restaining with IVTA, there was inadvertent submacular triamcinolone injection. Majority of the submacular IVTA was successfully aspirated out of the pit with soft tip extrusion. Post air-fluid exchange, part of the residual submacular IVTA was gently massaged out through the pit into the optic cup with 25G loop. Juxtapapillary ILM was peeled after staining with BBG dye and apposed onto the pit. At last follow up at 10 weeks, BCVA improved to 6/36, optic pit was closed with resolved macular NSD, with shallow subretinal fluid temporally, resolving hyperreflective dots in outer subfoveal retina with speckled hyperautofluorescence. This case shows that in certain anomalous variants of optic disc pit maculopathy, one may preempt the complication of submacular migration of IVTA and which may warrant cautious limited induction of PVD, leaving some vitreous attached over the optic pit to prevent the complication.
Triple procedure for coexistent aphakia, ectopic pupil, and vitreous floaters in a traumatic patient: Pars plana vitrectomy, scleral fixation and single-pass 4-throw pupilloplasty with iris sphincterectomy.

Muhammed Altinisik
Turkey

Purpose
To describe the approaches to restoring the anterior and posterior segments of the eye in a traumatic patient with ectopic pupil, aphakia, and floaters.

Setting/Venue
The case was treated at Manisa Celal Bayar University, a tertiary university hospital in western Turkey.

Methods
A 54-year-old male patient with a 10-year history of ocular trauma and subsequent perforation repair in the left eye complained of poor vision, increased floatating in recent months. The patient had been wearing refractive contact lens. On examination, the patient had a visual acuity of counting fingers, aphakia, anterior synechiae in the inferonasal quadrant and eccentric pupil partly covering the visual axis only in a dilated state. In the posterior segment, there were vitreous condensations. The patient underwent a triple procedure surgery. Vitreous condensations were removed with pars plana vitrectomy, scleral fixation was performed with the Yamane technique, and single-pass 4-throw pupilloplasty with iris sphincterectomy was executed to centralize the pupil.

Results
One month postoperatively, the patient achieved logMAR 1.0 vision. The iris was well reconstructed, the IOL was centralized and as well as the complaint of vitreous floaters was no longer present.

Conclusions
Simultaneous PPV, scleral fixation with the Yamane technique and single-pass 4-throw pupilloplasty with iris sphincterectomy was shown to be a safe surgical technique in a patient with traumatic aphakia, ectopic pupil and vitreous condensations.

Financial Disclosure
I have no financial or proprietary interest in any material or method mentioned.
Silicone oil assisted intraocular foreign body removal

**Purpose**
To report the advantages of removing large intraocular foreign bodies (IOFB) in a cavity previously filled with silicon oil (SO).

**Setting/Venue**
Ophthalmology Department. University Hospital “Dr. Jose Eleuterio Gonzalez”, Faculty of Medicine, Universidad Autónoma de Nuevo Leon, Monterrey, Nuevo León, Mexico.

**Methods**
Description of an IOFB extraction technique in two pediatric patients.

**Results**
Two pediatric patients with large IOFB, one in the macular area and the other in the subretinal space. Due to its size, it was decided in both cases, to complete the procedure with air / SO exchange. A large sclerotomy was performed and the IOFB was removed with a retinal forceps in one case and with an external magnet in the other.

**Conclusions**
Removal of a large IOFB through a wide sclerotomy may result in a significant loss of ocular stability with deformation of the eye due to excessive leakage of the balanced saline solution. Previous SO tamponade reduces this eventuality.

**Financial Disclosure**
NONE
**Title**
Modified Illuminated Scleral Depressor

**Purpose**
To describe the use of a modified illuminated scleral depressor for unassisted peripheral vitrectomy.

**Setting/Venue**
Royal Adelaide Hospital, South Australia, Australia

**Methods**
This novel instrument is created using a modified cotton swab attached to a conventional endo-illumination light pipe.

**Results**
To date, we have used the modified illuminated scleral depressor in more than thirty vitrectomies. We found that our modified device provided adequate transillumination of the peripheral retina that is comparable to other commercially developed products.

**Conclusions**
The modified cotton swab provides a safe and cost-efficient alternative to commercially available light pipe adapter sleeves.

**Financial Disclosure**
Nil
### Title
Dealing with a large subretinal air

### Purpose
To describe the management of subretinal air migration occurring during fluid air exchange.

### Setting/Venue
Vitreoretinal Service. Bristol Eye Hospital. University hospitals of Bristol NHS, Bristol, United Kingdom.

### Methods
A 63 years-old man presented to our Eye Emergency Department with a history of three weeks of loss of vision in his right eye. An unremarkable past ocular history and mild vascular dementia as a medical general condition were referred. Under examination, the visual acuity was hand movements with a mild cataract and a positive Shafer sign. Fundus view presented a total retinal detachment with open funnel configuration associated with a large post equatorial break (2 hours) with rolled edges and PVR CPA4 compromising the inferior quadrant.

### Results
25-gauge core vitrectomy (PVD present), and peripheral vitrectomy with carefully trimmed of the vitreous base was performed. Then, Brilliant peel dual dye was injected for removal of anterior star folds affecting the inferior quadrant (9 to 7 clock hours) as well as on the posterior pole. After that, the rolled edges of the large tear were trimmed. After careful peripheral examination under scleral indentation no more breaks found. Next, a fluid air exchange was performed with the migration of a large bubble of air under the retina through the large break, immediate fluid is returned attempting unsuccessfully to aspirate the air bubble with an extrusion cannula. Hence, the infusion port is removed and placed in the inferonasal quadrant. A gentle rolled motion scleral massage with an indenter is performed starting superiorly to the location of the subretinal air bubble and tilting the eye inferior-nasally, achieving the evacuation of the air bubble through the large tear. Fluid air exchange is repeated with drainage of subretinal fluid obtaining a flat retina, then laser was applied around the large tear, followed by 1000 Cs silicone oil injection. Finally, ports were removed and sclerotomies were sutured with 8/0 Vicryl.

### Conclusions
Subretinal air is a complication that could occur in presence of a large tear located in the proximity of the infusion cannula and after the formation of multiple small bubbles during fluid air exchange. Some simple manoeuvres may be useful to deal in this situation, first relocate the infusion cannula away from the retinal tear, back to fluid by aspirating the subretinal air bubble, if it is unsuccessful, then tilting the eye and a gentle scleral indentation at the same time will permit the evacuation of the subretinal air.

### Financial Disclosure
No financial disclosure
### Title
Management of chronic non apposed macular holes with retinal autograft using Finesse Loop

### Purpose
Retinal autograft acquisition with finesse loop for managing non apposed and failed macular holes

### Setting/Venue
We present a case of non apposed failed chronic macular hole with history of macular hole surgery with ILM peeling done with visual acuity of 20/200.

### Methods
We present the use of the Finesse loop for obtaining a retinal autograft which provides a complete tissue which is then used to fill the macular hole with a gas tamponade of C3F8 20%, resulting in good anatomical and functional outcomes.

### Results
We obtained a type 1 anatomical closure of macular hole with a functional improvement in visual acuity up to 20/60.

### Conclusions
The Finesse Flex loop is designed for ILM peeling, can also be used for obtaining retinal autograft and minimizes the need for inducing localized retinal detachment.

### Financial Disclosure
nil financial disclosure
Endogenous Candida endophthalmitis in a 4-month-old female with previous Covid-19 infection

Purpose
To describe endogenous endophthalmitis in the setting of previous Covid-19 and pediatric inflammatory multisystemic syndrome (PIMS) in a 4-month-old female.

Setting/Venue
Ophthalmology Department. University Hospital “Dr. Jose Eleuterio Gonzalez”, Faculty of Medicine, Universidad Autónoma de Nuevo Leon, Monterrey, Nuevo León, Mexico.

Methods
Description of the clinical characteristics and treatment of a pediatric patient with a previous neonatal Covid-19 infection who developed endophthalmitis due to Candida albicans.

Results
Successful postoperative outcome was achieved, defined as disappearance of active inflammation within the eye with no new fungus balls and a favorable structural outcome. Systemic workup was performed, and the source of infection was identified as a fungal endocarditis.

Conclusions
This case represents an association of previous Covid infection that could be a risk factor for immunosuppression, candidaemia and endophthalmitis due to Candida albicans. Early intervention can result in favorable surgical and therapeutic outcomes.

Financial Disclosure
NONE
A Crushed Flower - Retinal detachment with proliferative vitreoretinopathy

Purpose
The video shows the steps to flatten the retina in an eye with open funnel retinal retinal detachment with proliferative vitreoretinopathy.

Setting/Venue
The patient presented to the hospital with chronic retinal detachment, dense cataract, and a small pupil, and a vision of light perception.

Methods
The surgical steps to tackle such a case are demonstrated, including small pupil phacoemulsification, peeling of the proliferative vitreoretinopathy membranes, internal limiting membrane peeling, bimanual dissection of vitreous bands, 360 degree retinectomy, endolaser, direct perfluorocarbon-silicone oil exchange, and managing intraoperative complications.

Results
Postoperatively, the retina reattached, and the unaided vision under silicone oil improved to 2/60.

Conclusions
Although these cases are extremely challenging, the video shows how the surgeon can tackle such cases, resulting in a good outcome.

Financial Disclosure
Nil
**Title**
Membrane peeling in the proliferative diabetic retinopathy.

**Purpose**
To evaluate the effectiveness of internal limiting membrane (ILM) removal in the treatment of proliferative diabetic retinopathy.

**Setting/Venue**

**Methods**
HPI Posterior capsule rupture during cataract surgery with IOL implantation (MA) 13 years ago. Panretinal laser photoagulation 4 years ago. Surgery A three-port 25G vitrectomy following the removal of ILM and glial tissues using a 27 G forceps with preliminary staining by using Diprospan (2 mg betamethasone disodium phosphate and 5 mg betamethasone dipropionate in 1 ml) and 0.18% trypan blue, thermocoagulation of bleeding vessels without additional retinal laser photoagulation.

**Results**
Pneumatic retinopexy following silicone oil tamponade with sutureless self-sealing scleratomies was performed. The postoperative period passed without complications. OS visual acuity = 6/600, best corrected visual acuity = 6/100. Central foveal thickness by Swept-Source Optical Coherence Tomography (Topcon Corp, Tokyo, Japan): Before surgery – 553 μm; After surgery - 326 μm

**Conclusions**
1) ILM peeling is effective and safe method in the proliferative diabetic retinopathy. 2) Staining by Diprospan and the dye for ILM peeling facilitates the visualization and removal of glial tissues as completely as possible.

**Financial Disclosure**
Kazakh Order of the "Badge of Honor" Research Institute of Eye Diseases.
Subretinal tPA Injection in a Patient with Large Subretinal Hemorrhage

Ömer Özer, Turkey

Purpose
The purpose of this video presentation is to demonstrate the application of subretinal tPA injection combined with vitrectomy in the management of the large subretinal hemorrhage of a patient who was followed up due to age-related macular degeneration.

Setting/Venue
This surgery was performed in Department of Ophthalmology, Faculty of Medicine, Mersin University, Turkey in January 2020.

Methods
Pars plana vitrectomy, subretinal tPA injection and intravitreal gas tamponade were planned for this patient.

Results
An 80-year-old female patient has been followed up for 36 months because of wet type age-related macular degeneration in the right eye and dry-type age-related macular degeneration in the left eye. The best corrected visual acuity was 1.0 (20/20 Snellen) in the right eye and 0.01 (20/2000 Snellen) in the left eye before the 9th dose of anti-vascular endothelial growth factor (VEGF) injection due to subretinal fluid in the right eye. She presented to our clinic with the complaint of sudden vision loss in the right eye on the fifteenth day after intravitreal injection. On ophthalmic examination, best corrected visual acuity in the right eye was 0.01 (20/2000 Snellen). The posterior segment examination revealed a large subretinal hemorrhage that reached both the superior and inferior arcuate margins.

Conclusions
This patient’s visual acuity increased to 0.2 (20/100 Snellen) in the postoperative first month, 0.3 (20/66 Snellen) in the third postoperative month, and 0.5 (20/40 Snellen) in the postoperative sixth and first year. In conclusion, subretinal hemorrhage, which is a devastating complication of age-related macular degeneration, cannot be treated with anti-VEGF injections alone. The surgical method in this video is intended to be an example of managing this complication and its treatment.

Financial Disclosure
We have no financial interest to disclose.
Removal of luxated lens fragments from the vitreous body following secondary IOL implantation along with “ab externa” transcleral fixation

Purpose
To evaluate the effectiveness of luxated lens fragments removal from the vitreous body by performing vitrectomy with secondary IOL implantation following transcleral fixation.

Setting/Venue
1) A 70 y.o. patient with the diagnosis: OS – Post-operative luxation of lens fragments into the vitreous body. POAG II on ocular hypotensive therapy. Phakogenic uveitis. Pseudoexfoliative syndrome. 2) Surgery: Removal of luxated lens fragments from the vitreous body following secondary IOL implantation along with “ab externa” transcleral fixation. 3) Limited liability partnership «Kazakh Order «Badge of Honor» Research Institute of Eye Diseases»

Methods
A 70 y.o. patient was admitted to the clinic with the following diagnosis: OS – Post-operative luxation of lens fragments into the vitreous body. POAG II on ocular hypotensive therapy. Phakogenic uveitis. Pseudoexfoliative syndrome. VIS = 20/650 (0.03) IOP = 44.2 mm Hg HPI: A month ago, patient was admitted to the surgery OS – phacoemulsification with an IOL implantation after which he has developed post-op complications. Based on the operation protocol, lens fragments were pushed posteriorly to the anterior segment of vitreous body due to posterior capsular rupture. 25G vitrectomy with secondary IOL implantation following “ab externa” transcleral fixation was performed.

Results
Surgery and postoperative period were without complications. Post-op day 1 VIS = 20/50. IOP = 18 mm Hg (on Timolol). IOL in correct position with TSF at 3 and 9 o’clock. Partial avitria.

Conclusions
1) Vitrectomy with secondary IOL implantation following “ab externa” transcleral fixation is an effective method for removing the luxated lens fragments from the vitreous body. 2) It is necessary to correctly evaluate the state of the suspensory ligaments of the lens in patients with PES to avoid possible iatrogenic complications during surgery.

Financial Disclosure
Research Institutes Kazakh Order "Badge of Honor" Scientific Research Institute of Eye Diseases - place of work
### Purpose
Show the effect on posterior segment when doing phaco in posterior microphthalmos cases especially in this case in which posterior microphthalmos associated with mature hard cataract, PEX with poor dilation of pupil, zonular dialysis, elevated IOP and very shallow anterior chamber.

### Methods
Female patient 60 years old complaining of drop of vision in left eye. Examination of left eye show mature hard cataract with shallow AC, PEX with poor dilation of pupil, limited zonular dialysis and IOP 30 mmhg. Ultrasound show very small axial length 16 mm with localized area of choroidal effusion. Right eye aphakic with BCVA 1/60. Patient is medically free. Give her antiglaucoma treatment and follow up IOP and start preparing for phaco. One hour before phaco start mannitol and her IOP became 16 just before surgery. Start phaco using Iris hooks to dilate pupil then stain and do capsulirehexis in very shallow AC while doing phacoemulsification of nucleus i use CTR to avoid increase dialysis. I complete phaco and implant IOL. I think at this point I did great job but notice Iol tilted vertically in bag I tried many times to reposit even with Healon but tilted again. I decided to do anterior vitrectomy through sclerotomy 3 mm from limbus after few seconds notice blood in vitreous and expulsive hge rapidly I get out and sutured sclerotomy.

### Results
After surgery VA was HM with elevated Iop and ultrasound show localized Supra choroidal hge with vitreous hge. Follow up for 2 weeks under full anti glaucoma treatment. In follow up hge start to improve and IOP controlled and I decided to continue conservative without intervention but in 3rd week VA dropped to PLGP and ultrasound show retinal detachment. PPV was done for here and we found during surgery that site of sclerotomy although at 3 mm it is not in parsplana but in retina and it cause retinal tear which cause retinal detachment and also we found supra choroidal hge resolved without need for drainage and after PPV by 1 month BCVA reach 6/60.

### Conclusions
There is high risk to get rhegmatogenous retinal detachment in cases of phaco in posterior microphthalmos especially if we need to do sclerotomy due to disturbed anatomy. there is high risk of expulsive hge during doing phaco for posterior microphthalmos so if this occur only urgently close the globe and prepare all your tools for this moment as not to lose any second. Try to avoid anterior vitrectomy in these cases and if it is a must do your sclerotomy 1.5-2.00 mm and do very minimal anterior vitrectomy. Mannitol is mandatory before surgery In such difficult cases u should prepare all your weapons healon, stain, CTR, 3piece IOL, Iris hooks.

### Financial Disclosure
I have no financial interest to disclose.
Purpose
The purpose of this video presentation is to demonstrate the surgery of a patient with rhegmatogenous retinal detachment and macular hole.

Setting/Venue
This surgery was performed in Department of Ophthalmology, Faculty of Medicine, Mersin University, Turkey on March 18, 2021.

Methods
Phacoemulsification, iol implantation, pars plana vitrectomy, temporal inverted internal limiting membrane flap and silicone oil tamponade were applied to the patient.

Results
A 56-year-old male patient was admitted to our clinic with the complaint of decreased vision in the left eye for the last 1 week. He had no comorbid illness. There was no history of trauma in his medical history. Keratometric (K) values were K1 41.25 D and K2 41.75 D in both eyes. Autorefractometry measurement was +0.75 D in the right eye and measurement was not taken in the left eye. Best corrected visual acuity (BCVA) was 1.0 in the right eye and hand movement in the left eye. Intraocular pressure (IOP) was 16 mm Hg in the right eye and 13 mm Hg in the left eye, measured by Goldmann applanation tonometry. There was mild nuclear sclerosis in the left eye on anterior segment examination. Posterior segment examination revealed a giant tear in the superior retina and macular hole.

Conclusions
In conclusion, while retinal detachment surgery alone can be challenging, the macular hole makes the situation even more difficult. The patient’s BCVA increased to 0.2 in the postoperative first week. The retina was reattached and closed in the macular hole. This surgery performed shows a solution to this complex problem.

Financial Disclosure
We have no financial interest to disclose.
**Dealing with Supra-choroidal Haemorrhage: A Novel and Safe technique to drain multiple quadrant Supra-Choroidal Haemorrhage using extrusion cannula without need of using trochar insertion and Pars-plana vitrectomy**

**Purpose**
There is no defined, universally accepted technique of draining Supra-choroidal haemorrhage (SCH). This procedure is not performed routinely, thereby surgeons may experience anxiety and be hesitant with their surgical approaches to this problem. The purpose of this video is to illustrate a simple, novel and safe technique to drain SCH present in one or more than 1 quadrants, occurring after cataract surgery. We propose this technique to be safe in the hands of experienced vitreo-retinal fellows and retina specialists who have recently begun to practice, as this technique is relatively straightforward.

**Setting/Venue**
The procedure was performed at tertiary centre with the modern-day ophthalmic unit at James Cook University Hospital, South Tees NHS Foundation Trust, Middlesbrough, United Kingdom.

**Methods**
Background of the case in results section. 10-days post-event, SCH drainage was performed using this novel technique as follows: Corneal paracentesis was performed using MVR blade to introduce anterior chamber infusion. Pressure is maintained between 50 – 60 mmHg to provide active force, from anterior to posterior, to help drain SCH. A conjunctival peritomy is performed, to expose bare sclera and a meticulous, full thickness sclerotomy is then performed using MVR blade, 6 mm from the limbus in the detached quadrant. Drainage of SCH is initiated with gentle pressure on the lip of the sclerotomy. An extrusion Cannula is then used to perform active aspiration of supra-choroidal blood from the ostium of the sclerotomy. This is performed while maintaining gentle pressure to help extrude blood. Active aspiration at the ostium is able to completely drain the Supra-Choroidal bleed. The steps are repeated in each quadrant of choroidal haemorrhage. After assessing capsular bag integrity, IOL was re-centred. 8/0-vicryl suture is used to close the sclerotomy and conjunctival peritomy. A further internal examination can be performed, if required.

**Results**
72-year old lady, with background of Age-related macular degeneration, undergoing cataract surgery was noticed to have Anterior chamber shallowing and loss of “red reflex” while inserting intra-ocular lens (IOL) into the posterior chamber bag. Prompt closure of the corneal wound performed to minimise loss of intra-ocular contents. Post-operative examination revealed a dislocated IOL and SCH eclipsing 80% of the visual axis. Ultrasonography revealed SCH in supero-temporal and infero-nasal quadrants >5mm in height. After SCH drainage, patient has made an excellent recovery with no post-operative complications. 1-week post-operative fundus examination revealed no SCH and retinal detachment. IOL remained well-centred. Patient’s intra-ocular pressure was 22mmHg and despite Age-related Macular degeneration, patient’s vision was 6/24 at 4 weeks post-operative review. The procedure yielded a successful result, with minimally invasive surgical drainage of SCH.

**Conclusions**
SCH is a rare but potentially devastating complication of any intra-ocular surgery, especially cataract and glaucoma-drainage surgeries. A timely and safe drainage of large SCHs can result in a significantly better visual outcome result for the patient. Our technique utilises extrusion cannula as an active aspirator of choroidal blood without necessitating the need for Pars plana choroidal haemorrhage drainage, which, can lead to further retinal tears and retinal detachment in SCH cases. We advocate using an Anterior chamber infusion along with extrusion cannula active aspiration to achieve best results with minimally invasive surgery. The advantage of this technique is, it is a relatively straightforward technique that can restore ambulatory vision in patients.

**Financial Disclosure**
No financial interests
23-gauge sclerotomy for drainage of post-laser choroidal hematoma

To describe 23-gauge sclerotomy for drainage of massive choroidal hemorrhage complicating scatter laser photocoagulation for severe non-proliferative diabetic retinopathy.

Department of Ophthalmology, Fattouma Bourguiba University Hospital, Monastir, Tunisia.

Single case report.

A 65-year-old man with a history of type 2 diabetes mellitus, systemic hypertension, chronic alcoholism, and uneventful cataract surgery in both eyes, presented with severe right eye (RE) pain with deep sudden decrease of vision one-day following a panretinal photocoagulation session for severe non-proliferative diabetic retinopathy. On ophthalmic examination, visual acuity was negative light perception in the RE and positive light perception in the left eye (LE). Slit-lamp examination of the RE revealed a quiet anterior chamber, no iris rubeosis, and a retro-IOL huge hemorrhagic choroidal detachment. LE examination showed a quiet anterior chamber, mild vitreous hemorrhage, and peripapillary subretinal bleeding. B-mode ultrasonography demonstrated a total choroidal detachment in the RE. On work-up, the patient presented post-alcoholic cirrhosis without features of hemostasis disorders and received no anticoagulant therapy. Sequential fluorescein angiography and structural OCT prior to the acute hemorrhagic episode showed no features of choroidal or retinal vascular disorder, except those related to diabetic retinopathy. The patient was initially treated with topical steroids and cycloplegic agent. Forty-eight hours later, there were persistent ocular pain and total hemorrhagic choroidal detachment. Thus, a surgical drainage of the choroidal hematoma was performed using a 23-gauge trocar placed 5.5 mm posterior to the limbus. The procedure was performed under a peribulbar xilocain anesthesia. An

Massive choroidal hemorrhage may exceptionally occur after scatter laser photocoagulation for diabetic retinopathy. Early surgical drainage may have beneficial effects on the anatomic and functional outcomes.

None
Purpose
To present an alternative approach for the diagnosis and treatment of juxtapapillary hemangioblastoma (JHB).

Setting/Venue
Tertiary referral center with a high volume vitreoretinal surgery department.

Methods
Educational video illustrating the surgical management of a JHB by vitrectomy assisted excision. An introductory case presentation, clinical course through time and multimodal analysis of the juxtapapillary lesion confirm the diagnosis. Emphasis is made on the treatment rationale and surgical technique with follow up imaging. A short review of other techniques to treat juxtapapillary HB such as transpupillary thermotherapy, PDT and radiotherapy is performed.

Results
An 18-year-old female was referred for a routine consult with an epiretinal membrane (ERM) in the right eye. On thorough examination multiple bilateral retinal HBs were uncovered and confirmed through multimodal evaluation. As per recent guidelines a brain MRI study confirms VHL disease. Cryotherapy and laser were performed with suitable results; however, 4 years later the vision decreased to 20/200 and a juxtapapillary mass associated with complex ERM and macular hole (MH) appeared. SS-OCTA revealed a high-flow lesion, with late hyperfluorescence, diagnosing a JHB. A three-port PPV was performed carefully excising the lesion. Two months after, a 20/70 vision was achieved, the MH remained closed and foveal contour reestablished.

Conclusions
The excision of HB in a juxtapapillary location is an alternative and secure choice compared to other therapies. Following the recent AAO guidelines this pathology requires a multidisciplinary assessment.

Financial Disclosure
Juan D. Arias: Topcon consultant

Juan David Arias
Eduardo J. Viteri
Isabel Bolivar
Title
Retinal detachment with 360-degree giant tear: How to deal with?

Purpose
To describe the management of a total retinal detachment with a 360-degree giant tear. The technique consisted on 23-gauge vitrectomy with close peripheral shave, followed by retinal flattening with perfluorocarbon liquid (PFCL) and direct exchange to silicone oil.

Setting/Venue
Department of ophthalmology of Habib Thameur Hospital in Tunis (Tunisia).

Methods
We present the case of a 34-year-old man with a history of high myopia. He complained about a sudden loss of vision of his right eye evolving for 3 weeks. Visual acuity was limited to light perception in the right eye. Slit lamp examination was unremarkable, IOP was 6 mmHg, fundoscopy showed pigment in the vitreous cavity (3+), a total retinal detachment with a crumpled retina associated to a 360-degree giant tear. Best corrected visual acuity (BCVA) of the left eye was 20/60 (-8,00) and ophthalmic examination was normal. The patient underwent 23-gauge vitrectomy. We started with central and peripheral vitrectomy assisted by triamcinolone acetonide for posterior vitreous hyaloid removal. Close vitreous shave was performed with excision of the residual retinal tissue. PFCL was gently injected over the optic disc and extended peripherally until the retina was totally flattened. Then we performed 360-degree retinopexy with endolaser photocoagulation. Silicone oil was injected trough the infusion terminal to facilitate direct exchange PFCL to silicone oil and to prevent retinal slippage. Sclerotomies were sutured after trocars removal.

Results
Two months postoperatively, BCVA of the right eye was 20/400 (+4,00), IOP was 18 mmHg with monotherapy (Topic Timoptol). Slit lamp examination showed clear lens. On fundoscopy, the retina was totally attached. We decided to delay silicone oil removal 4 months after surgery.

Conclusions
Retinal detachment with a 360-degree giant tear is a very rare condition. Its surgical management remains challenging. It requires a complete vitrectomy and excision of residual retinal tissue to prevent postoperative vitreo-retinal proliferation. This could allow a lower rate of recurrent retinal detachment after silicone oil removal.

Financial Disclosure
No Financial discloser
The influence of slit lamp shield size and design in reducing aerosol transmission

Purpose
Previous studies have highlighted the effectiveness of slit lamp shields in reducing aerosol spread. Our study investigated the optimal size and design for such shields.

Setting/Venue
Princess Alexandra Hospital

Methods
Two sets of shields were made; each set included five cardboards of the following dimensions: 1: (44x52cm), 2: (44x44cm), 3: (22x52cm), 4: (22x33.5cm) and 5: (44x22.5cm). Cardboards in set 1 were kept flat while in set 2 were curved using plastic frames. Aerosol was generated at patient’s position using water spray bottle while aerosol levels were measured at the face position of the examiner and on the slit lamp desk using two GP2Y1014AU0F sensors. The measurements were recorded in particles/0.01f³ and analysed using a Mann Whitney U Test.

Results
Mean background indoor aerosol was 559. Following aerosol generation, the level increased to a mean of 571 in the absence of any kind of shield but to a mean of 567 when shields were in place (p<0.05). Flat shield 1 provided the best protection against inhaled aerosol. Flat shield 2, despite of its shorter height compared to shield 1, provides best protection against precipitated aerosol on slit lamp desk. Curving shield 5 has significantly improved its protective properties against both inhaled and precipitated aerosol, while keeping its shortest height that allows better access during slit lamp examinations.

Conclusions
Shields reduced aerosol spread with curved shields being more effective. GP2Y1014AU0F particle sensors are effective tools for quantifying aerosol spread. Slit lamp parts could change the aerodynamic of aerosol transmission therefore larger shields may not provide better protection against precipitated aerosols.

Financial Disclosure
The detectors used in this study were sponsored by VR Surgical Consulting Ltd.
### Purpose
To show how Intraocular foreign bodies (IOFBs) can steal our vision because we are not wearing protective glasses during dangerous jobs like hammering. Also to show the effectiveness of Iris shelf technique for removal of IOFBs.

### Setting/Venue
Surgery was done in Ophthalmology department, Assiut University Hospitals, Assiut, Egypt.

### Methods
Cartoon animation combined with live surgery of how IOFBs can steal vision and how to remove IOFBs in a simple way by Iris shelf surgical technique.

### Results
Protective glasses is very important tool for protecting eyes from IOFBs. Iris Shelf technique is an easy and reproductive way of removing IOFBs.

### Conclusions
Patient education of the importance of wearing of protective glasses during hammering or other dangerous jobs is very important to decrease global Eye injuries and blindness caused by IOFBs.

### Financial Disclosure
No financial Interests or relations with any companies
**Title**
Here comes the savior of the traditional lens couching: The fragmatome

**Purpose**
To describe the failure of the attempt to manage a traditional lens couching with only a 23 gauge vitrectomy probe, which was successfully removed with a 23 gauge fragmatome.

**Setting/Venue**
Ophthalmology Department, Agadir Military Hospital, Agadir, Morocco.

**Methods**
In this video, we describe the case of a 73-year-old man, who underwent traditional lens couching, in a non-medical rural area, due to financial issues. Noticing that the visual acuity did not improve, the patient consulted an ophthalmologist who diagnosed him with a posterior lens luxation and referred him to our facility for adequate management. Preoperative assessment revealed vitreous strains in anterior chamber, complete posterior lens luxation in the vitreous cavity, without any retinal detachment or peripheral retinal breaks. Optic biometry was done to calculate iris-claw lens power.

**Results**
The patient underwent under local anesthesia, a 23-gauge 3 ports pars-plana vitrectomy. First, a core vitrectomy was done with 360 degrees liberation of vitreous adherences to the lens, until it became mobile in the vitreous cavity. Then, a first attempt of lens phacophagy was made, with a low cut rate of 1000 cut/min. However, the center of the nucleus was too dense, resisting to several mechanical cracking maneuvers with both light and vitrectomy probes. 23 gauge fragmatome was inserted and permitted the phaco-fragmentation of the central dense nucleus. Then, anterior chamber vitrectomy with high cut rates was done to liberate the anterior chamber from vitreous strains. Peripheral vitrectomy was done with 360° degrees indentation and vitreous base shaving, looking for peripheral breaks or nucleus fragments. Acetylcholine was injected in anterior chamber and mechanical iris stimulation with sinskey hook was attempted to achieve adequate myosis for iris-claw lens fixation, but failed. Secondary-Lens Implantation was postponed.

**Conclusions**
Traditional Lens couching remains a burden for developing countries where access to cataract surgery is still insufficient. In our context, despite the democratization of phaco-emulsification, certain isolated rural regions remain at the mercy of charlatans who offer this technique which is not without risk: Endophthalmitis, phthisis and blindness are frequent complications. Our patient had the chance to benefit from an elegant but heavy, vitreo-retinal surgery, which allowed him after a secondary lens implantation to achieve descent BCVA, but at what cost? Certainly much more expensive than a simple phacoemulsification.

**Financial Disclosure**
I have No financial Interest
### Title
Measuring Retinal Displacement via Retinal Vessel Printings in 3D Projections: Comparing Displacement in Patients After Pneumatic Retinopexy vs. Pars Plana Vitrectomy

### Purpose
To determine the frequency and significance of retinal displacement in patients after treatment by pneumatic retinopexy (PnR) and pars plana vitrectomy (PPV) using fundus autofluorescence images (FAFs).

### Setting/Venue
83 FAFs from PnR patients and 74 FAF images from PPV patients were included from St. Michael’s Hospital (Toronto, Canada), Newcastle Eye Center (Newcastle, UK), and Hamilton Regional Eye Institute (Hamilton, Canada).

### Methods
For each image, the location of the optic disk and fovea were determined using a machine learning model from Optos. From these values, we determined the location of Zone 1, a circle drawn from the optic disk, using the fovea as the center of the circle. Two graders then located points on retinal vasculature that matched retinal vessel printings (RVPs) on the FAFs within this Zone 1 region. These corresponding pairs of points were then drawn on the image and projected to a 3D using machine learning tools. From these coordinates on the 3D projection, we determined the horizontal, vertical, and diagonal displacements of the RVP to vessel in each FAF across the curvature of the eye. This provided us with a measurement of displacement of the retina after PPV or PnR that accounted for the three-dimensional curvature of the retina.

### Results
Patients treated by PPV (n=74) had significantly greater displacement within Zone 1 than those treated by PnR (n=83). 50% of PPV patients showed retinal displacement compared to 25.3% of PnR patients (p = 0.001). Among eyes with retinal displacement (n=58) there was a moderate correlation between the amplitude of maximum displacement across the 3D projection and aniseikonia (r=0.402; p=0.003), vertical metamorphopsia scores (r=0.313; p=0.02) and logMAR BCVA (r=0.376; p=0.004). Similarly, we found that there was a moderate correlation between the amplitude of displacement in Zone 1 and the following outcomes: aniseikonia (r=0.314; p=0.03) and BCVA (r=0.373; p=0.007). There was a weak correlation between amplitude of displacement in Zone 1 and vertical metamorphopsia (r=0.291; p=0.04).

### Conclusions
This study developed a robust methodology to determine displacement across the three-dimensional curvature of the retina using RVPs from two-dimensional FAF images. Furthermore, our results using this methodology show a correlation between displacement of the retina and increased aniseikonia, increased vertical metamorphopsia, and decreased visual acuity.

### Financial Disclosure
None
**Title**
Vitrectomy following vitrectomies

**Purpose**
The primary goal, to unleash, to open and to lay down exhausted, vitrectomized retina. The final goal, to stabilize entire eyeball.

**Setting/Venue**
Department of Ophthalmology, University Clinical Center, Medical University of Silesia, Katowice. Head of Department professor Ewa Mrukwa-Kominek

**Methods**
20G-bimanual PPV with Alcon Constellation® Vision System, Non-contact Wild Field Lens System. Perfluorocarbon liquid (PFCL) Ocudeka Decaline® and silicone oil PDMS 1000 were used. The surgery started with circumferential (360°) relaxing retinotomy, removal of sub- and epiretinal membranes to free the retina as much as possible. The next step involved flattening stiff and severely contracted retina with PFCL drop. Additionally, small relaxing radial retinectomy with unwrapping of folded retina was required. Final steps involved the PFCL removal, air retinal reattachment control, endolaser around the retinal cut and silicon oil tamponade.

**Results**
A 54-year-old male with persistent (over 6 months) detachment of retina after 3 vitrectomies (PPV). Previous surgeries were two PPV’s with silicone oil tamponade, and one with gas tamponade. During the first procedure phacoemulsification with PCIOL implantation was performed, as documented. Severe glaucomatous neuropathy was also documented. Best corrected visual acuity was light perception limited to 2 quadrants: temporal and central. Average intraocular pressure (IOP) was 10 mmHg (measured on admission and on the day of the surgery) Ciliary body dysfunction was suspected. Plenty of abnormal blood vessels were found on the surface of the iris and in the angle. Ophthalmoscopic examination was not possible. Diagnostic ultrasonography revealed funnel-shaped retinal detachment and dispersed particles of silicone oil over and under the retina (photo 1.) 4 days later, BCVA was hand motion (HM) recognition, IOP was 10 mmHg. Persisting, severe rubeosis iridis, with no hemorrhage into anterior or posterior chamber (photo 2). In eye fundus examination totally attached retina with silicone oil (photo 3). No inflammatory reaction detected. 47 days after surgery, significant rubeosis reduction (photo 4), totally attached retina (photo 5). IOP 10 mmHg, as recorded previously. The oil removal was planned in next 40 days, next video soon.

**Conclusions**
This case provides further evidence for the benefits of fundus reconstructive surgeries on eyes with very poor prognosis.

**Financial Disclosure**
NONE
**Title**
Open Sky Full of Air: Unexpected Retinal Detachment Repair in a Post-Trauma Eye

**Purpose**
To present an interesting case of a patient with history of trauma who underwent reconstruction with pars plana vitrectomy (PPV) + temporary keratoprosthesis (TKP)/penetrating/keratoplasty (PKP)/possible secondary IOL. Intraoperatively, an unexpected retinal detachment (RD) was noted. This video shows how to perform a PPV through a TKP and highlights a unique approach to RD repair given aphakia and concurrent PKP.

**Setting/Venue**
52-year-old with history of three penetrating keratoplasties suffered trauma to his left eye, requiring a vitrectomy and penetrating keratoplasty.

**Methods**
Narrated video.

**Results**
Ultimately, the PKP was performed under air without collapse of the open sky globe, facilitating successful RD repair with gas tamponade.

**Conclusions**
Retinal detachment repair is rarely performed concurrently with temporary keratoprosthesis and penetrating keratoplasty; this video highlights one approach to these complex surgeries and provides helpful pearls.

**Financial Disclosure**
Alcon, Alimera Sciences, Allergan/AbbVie, Novartis, Genentech, Regeneron, REGENXBIO, DORC (consultant to all)
Severe diabetic tractional retinal detachment treatment combined with pars plana vitrectomy and scleral buckling with intrasilicone oil injection of dexamethasone implant

Purpose
To evaluate the efficacy and complications of intravitreal dexamethasone with simultaneous silicone tamponade after pars plana vitrectomy (PPV) with scleral buckling in a patient with severe diabetic tractional retinal detachment.

Setting/Venue
Surgical case

Methods
An 56 years old diabetic male patient applied to our clinic due to vision loss. His visual acuity was counting fingers from 1 meter in his right eye and hand motions in his left eye. Anterior segment examination revealed nuclear cataracts in the right and left eyes. Intraocular pressures were 12 and 13 mmHg in both eyes, respectively. In fundus examination there was tractional retinal detachment involving the macula and grade-1-2 vitreous hemorrhage in both eyes. The patient had no previous treatment for diabetic retinopathy. We planned PPV to his right eye after left eye. We treated his left eye combined with phacoemulsification, PPV and scleral buckling.

Results
Intravitreal bevacizumab injection was applied to the patient 2 days before surgery. We used 23 gauge PPV settings. Bimanual surgery was performed. Most of the fibrovascular membranes pealed with using delamination, segmentation, and peeling techniques. Internal limiting membrane (ILM) was pealed (in an area of approximately 3 disc diameter). Scleral buckling surgery was added to PPV due to subretinal and preretinal bands that could not be removed in the peripheral retina. The retinal folded area in the superior temporal retina was not touched due to the risk of a tear. 360 degree pan-retinal laser photocoagulation was performed with indentation under the liquid perfluorocarbon after the retina was attached. 1000cst silicone oil was injected after liquid-air exchange. After the trocars were removed and sutured, dexamethasone implant was injected into silicone oil. The patient's visual acuity was counting fingers from 10 centimeters in the left eye at 2nd month. There was no inflammation in the patient in the early postoperative period. Proliferative vitreoretinopathy and recurrent retinal detachment did not develop during the 2-month follow-up. Intraocular pressure did not increase.

Conclusions
Conclusion: In our country, there are a small number of patients who have not received any treatment for diabetic retinopathy and developed severe tractional retinal detachment. Anatomical recovery can be achieved in these patients with careful surgery, but it is difficult to achieve functional success. Postoperative inflammation and PVR development can be reduced with intravitreal dexamethasone at the end of the surgery. There is a need for studies involving a large number of patients to prove this.

Financial Disclosure
no
**Title**

"Surgical Toolkit" for human amniotic membrane graft in vitreoretinal surgery

**Presenter**

Daraius Shroff, India

**Co-Author 1**

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**Co-Author 6**

Cyrus Shroff

**Purpose**

To propose a simplified technique for implanting human amniotic membrane grafts during vitreoretinal surgery, based on three S's- Sizing, Staining & Sliding.

**Setting/Venue**

Tertiary referral ophthalmic institution.

**Methods**

The authors illustrate tips and tricks to simplify shaping, handling and placement of cryopreserved human amniotic membranes in vitreoretinal surgery. OCT based sizing of the graft using a dermal trephine, brilliant blue staining for orientation and visualization along with a bimanual sliding technique simplified and added safety and standardization to the surgical procedure.

**Results**

These simple steps allow predictable control of human amniotic membranes intraoperatively. They also help with accurate and atraumatic graft placement which is key to a good anatomical and functional outcome.

**Conclusions**

Human amniotic membrane grafting has recently gained popularity among vitreoretinal surgeons for managing challenging cases. However, there is a hesitancy in adopting this technique due to difficulty in handling the graft. Using the simple surgical tips described in our video, would allow easy adoption of this technique when indicated using a standardized set of surgical steps described in our surgical toolkit.

**Financial Disclosure**

Nil
### Title
Surgical Approach to a Large Non-Metallic Intraocular Foreign Body Removal with Proliferative Vitreoretinopathy

### Purpose
To present a case of a non-metallic Intraocular foreign body associated with proliferative vitreoretinopathy (PVR)

### Setting/Venue
Eye Center

### Methods
Case Report

### Results
A 47-year old male who accidentally hit his right eye by an unknown foreign body while grinding causing sudden blurring of vision and eye pain. On examination, visual acuity was light projection with a 7mm corneoscleral laceration, uveal prolapse and diffuse hyphema. The left eye was generally unremarkable. Orbital X-ray showed an intraocular foreign body on the right eye. He initially underwent emergency repair of corneoscleral laceration with anterior chamber reformation and intravitreal injection of antibiotics. Post-operatively, ultrasound bscan findings showed dense vitreous opacities with vitreoretinal traction membranes, and intraocular foreign body with posterior shadowing inferotemporally and to consider close funnel retinal detachment. He subsequently underwent scleral buckling with lensectomy, intraocular foreign body extraction using vitreoretinal microforceps using the corneoscleral incision, and repair of retinal detachment by meticulous membrane peeling and segmentation, relaxing retinectomy, endolaser barrage and silicone oil tamponade. The intraocular foreign body measured 16.5 x 2.5mm. Post-operatively, vision improved to counting fingers with attached retina but the macula and temporal retinal areas were severely damaged.

### Conclusions
Intraocular removal of foreign body presents surgical challenges. However, timely removal of the foreign body, patient counselling and careful planning of the surgical approach such as using scleral buckling, thorough vitrectomy and membrane peeling, gentle foreign body removal, adequate retinectomy and silicon oil tamponade can provide favorable prognosis and retinal attachment despite the severity of injury.

### Financial Disclosure
none
**Title**
Human amniotic membrane graft: The fastest solution to optic disc pit maculopathy

**Purpose**
To demonstrate the technique and results of Human Amniotic Membrane Grafting in a case of optic disc pit.

**Setting/Venue**
A Tertiary care centre for ocular sciences

**Methods**
To illustrate the technique of Human amniotic membrane grafting with macular sparing ILM peel in a case of optic disc pit. OCT based measurement of the pit was done. A skin trephine was used to fashion the optimum graft size. Bimanual handling and placement leading to a good placement for closure of the pit.

**Results**
The case showed complete resolution of the NSD on post operative day 1. OCT based follow up along with microperitomery showed no recurrence over the follow up period of 3 months.

**Conclusions**
Optic disc pit surgery has always been controversial with various techniques being described over the years. Persistent Fluid or late resolution and recurrences have lead to doubts on the perfect procedure for disc pits. Human Amniotic Membrane Grafting seems a promising solution, leading to a complete closure of the pit with fast and complete resolution of the NSD. This in turn lead to better Anatomical and Visual gain.

**Financial Disclosure**
NIL
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<tr>
<th><strong>Title</strong></th>
<th>No diffuse answers: The impact of vitreous sampling in unilateral pediatric leukocoria</th>
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<tr>
<th><strong>Purpose</strong></th>
<th>To highlight the importance of ocular pathology in the management of atypical pediatric cases and educate about uncommon presentations of retinoblastoma that are life threatening.</th>
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<th><strong>Setting/Venue</strong></th>
<th>Tertiary referral center with a high volume vitreoretinal surgery department and access to an ocular pathology laboratory.</th>
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<tr>
<th><strong>Methods</strong></th>
<th>A brief clinical description of an atypical presentation of a suspected uveitic pediatric cataract with non conclusive imaging is first described. Surgical video with narrated technique is demonstrated followed by definitive histopathologic and immunohistochemistry correlations that inform therapeutic decisions.</th>
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<th><strong>Results</strong></th>
<th>A 10 year-old boy developed leukocoria over a 3 month period due to a rapidly advancing cataract that precludes fundus exam and was associated with granulomatous panuveitis on his right eye. Contralateral eye exam was normal, systemic infectious serology exams were negative, ocular ultrasound imaging showed no calcified masses and orbit MRI was within normal limits. Lensectomy was performed but severe vitritis prohibited IOL implantation or clear fundus examination. He was subsequently referred to our ocular oncology consult due to this atypical presentation with a presumed diagnosis of COATS disease or retinoblastoma. Surgical management with diagnostic pars plana vitrectomy including aqueous and vitreous humor biopsy allowed histopathology and immunohistochemical analysis. Results were compatible with diffuse retinoblastoma and immediate enucleation ensued followed by systemic chemotherapy.</th>
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<th><strong>Conclusions</strong></th>
<th>Unilateral leukocoria and uveitis in pediatric patients are high risk scenarios and require oncologic work up. In atypical presentations the need for definitive diagnosis outweighs the risk of local or systemic extension and allows life preserving treatment. Immunohistochemistry was key to reach a diffuse retinoblastoma diagnosis which is often overlooked and portrays a worse prognosis.</th>
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| **Financial Disclosure** | Co-author Juan David Arias is a consultant for TOPCON |
Purpose
Traumatic globe injury can lead to severe iris damage, cataract formation or even aphakia. Both penetrating and blunt trauma can induce aniridia or fixed mydriasis with ensuing glare, light sensitivity and cosmetic discomfort. The Reper artificial iris (Ophtec, Groningen, Netherlands) is a novel, acrylic-based foldable device with promising functional and cosmetic results for the treatment of large iris defects and fixed dilated pupils. It provides good iris detail which culminates in a satisfying cosmetic appearance. Furthermore, the implant may be manufactured embedded with an intraocular lens to correct aphakia through a microincision. In this video, we report the functional and anatomical outcomes of the surgical management of two eyes from different patients with implantation of the Reper device. Patient 1 was submitted to sulcus implantation of the Reper with no refractive power in a piggyback configuration. Patient 2 was implanted with the Reper targeted for emmetropia through a Gore-Tex polytetrafluoroethylene-sutured (Gore Medical, Flagstaff, AZ) transscleral fixation.

Results
In a second-stage surgery, patient 1 was implanted with a tailored, model C0 Reper artificial iris in a sulcus piggyback configuration to achieve pupil rehabilitation. In its turn, patient 2 was submitted to 23-gauge pars plana vitrectomy with silicone oil removal. Concomitantly, a tailored, model C1 Reper artificial iris/intraocular lens complex targeted for emmetropia was implanted aiming for refractive and pupil rehabilitation. The Reper device was secured with three Gore-Tex scleral fixation sutures. At the 3-month follow-up visit, patient 1 presented BCVA of 20/20 with resolution of glare and photophobia; patient 2 remained with BCVA of 20/200. Anterior segment examination and fundoscopy were unremarkable in both patients, with no signs of intraocular inflammation induced by the prosthetic iris implant. No postoperative ocular hypertension was observed. The Reper device was properly centered and both patients conveyed high cosmetic satisfaction.

Conclusions
The Reper intraocular lens/artificial iris complex is a safe and effective novel approach to simultaneously treat aniridia and aphakia. It improves visual acuity and photophobia in patients with extensive iris defects and allows for an excellent cosmetic effect achieved through individual color tailoring. In this video, we report the successful ocular rehabilitation of two patients with implantation of the Reper device – one in the ciliary sulcus of a pseudophakic subject and another through Gore-Tex transscleral fixation in an aphakic subject with no capsular support.

Financial Disclosure
This video received no financial support. All authors declare no financial, institutional nor commercial interests related to the content of this video.
**Title**
Contractile movement and Fibrin sealant in Vitrectomy of a Morning Glory Disc Retinal Detachment

**Purpose**
We present a novel surgical approach of vitrectomy and fibrin sealant with silicone oil endotamponade for the treatment of a recurrent retinal detachment in a child with morning glory disc anomaly. We captured the contractile movement which is a rare entity of morning glory disc.

**Setting/Venue**
The Hospital for Sick Children, Toronto, Canada.

**Methods**
Management of retinal detachment associated with morning glory disc anomaly remains a challenge. We present a case of a 10-year-old boy with a recurrent morning glory detachment capturing the contractile movement and presenting a novel surgical approach. He had an initial failed surgery with vitrectomy and long-acting gas tamponade. At his first surgery, we performed a standard 23G pars plana vitrectomy and fundus examination with 360 scleral depression revealed no other retinal breaks. Air-fluid exchange was performed, and laser applied around the morning glory disc. Fibrin sealant was injected over the morning glory disc and 18% perfluoropropane was used as endotamponade. Retina was briefly attached post-operatively but redetached at Month 1 after surgery with extensive proliferative vitreoretinopathy. He underwent another vitrectomy and fibrin sealant glue remained in-situ plugging the disc. PVR membranes removed with an intraocular forcep and retina was flattened under air-fluid exchange. Silicone oil was injected to tamponade the retina.

**Results**
Patient achieved complete retinal reattachment and remained attached at 6 months follow-up.

**Conclusions**
Morning glory disc associated rhegmatogenous retinal detachment is difficult to repair because retinal breaks are not easily detected. Communication between the subarachnoid space and vitreous cavity have been proved clinically in patients with the morning glory anomaly and there have been reported cases of silicone oil migration from the eye into the intraventricular space. This case demonstrated that fibrin sealant can be a useful adjunct in vitrectomy for repair of retinal detachment related to morning glory syndrome as a plug for sealing retinal breaks and to better allow the surface tension of the silicone oil to keep the retina attached and hopefully also to prevent migration of silicone oil, to achieve successful anatomical reattachment.

**Financial Disclosure**
None
Title
Surgical treatment of misplaced multifocal IOLs from a vitreoretinal perspective

Purpose
To show different surgical vitreoretinal techniques for relocating and centering multifocal intraocular lens (MIOL) depending on different degrees of capsular remains.

Setting/Venue
Ophthalmology Service. La Mancha-Centro Hospital, Alcázar de San Juan, CR, Spain

Methods
The surgical approach in all cases was a pars plana vitrectomy. Three different cases are shown: A complicated cataract surgery with an upside down angulated MIOL involve in retinal detachment (the MIOL was relocated in the capsular rests, the retina was reapply and the internal limiting membrane - ILM- was peeled). A piggy back case with YAG-laser damage of both optics after posterior capsulotomy involved in a cystoid macular edema (the ILM was peeled, the both intraocular lenses were explanted and the optic of a new MIOL was implanted using the haptics of the previous intraocular lenses). And a subluxated MIOL after a complicated cataract surgery with posterior capsule rupture (the MIOL was recentered using a modified cow hitch stitch in the haptic-optic junction and the nuclear fragments in the vitreous were removed). The mean follow period was of 20,3 months (range: 6-30).

Results
Correct stability and centering of the MIOL was achieved in all cases. There were no postoperative complications. The stability and centration of the MIOLs were maintained throughout the follow-up period.

Conclusions
The video shows different vitreoretinal surgical methods to reposition a dislocated MIOL. These techniques could be good alternatives to avoiding the inclination of the MIOL and achieving a good centering of it, a real challenge in these cases.

Financial Disclosure
The authors have no proprietary or commercial interest in any material.
Metallic intraocular foreign body removal assisted through the extrusion line

**Purpose**
To describe an alternative vitreoretinal surgical maneuver, to remove metallic intraocular foreign bodies.

**Setting/Venue**
Retrospective clinical case report, two cases are described. At a third level referral center.

**Methods**
Two patients, at different time lines, underwent vitrectomy to remove a metallic intraocular foreign body (IOFB). A 3-port vitrectomy was performed, a 23-G constellation vitrectomy equipment was used in both procedures, careful core vitrectomy was first done, vitreous adhesions and vitreous detachment was carefully done, retina was partially detached at the IOFB location, vitreous adhesions were cut and released gently not to increase the retinal detachment. Liquid perfluorocarbon was placed on the macula. As the vitreous adherences were cut, the IOFB was free from all potential tractional forces, the soft silicone tip cannula was held on to its surface, and at maximal vacuum aspiration, the IOFB was brought up to the anterior chamber, switching the light pipe for forceps in the other hand, and removed out of the eye. A complete as possible vitrectomy was performed, intraocular laser around the retinal brakes was performed, an intraocular lens was placed in the ciliary sulcus with the optic within the anterior capsule, and silicone oil was used as tamponade.

**Results**
No signs of intraocular inflammation were recorded postoperatively. Intraocular silicone oil removal was done at the third post-operative month in both cases, retina remained attached through follow up, both patients had over 9 months follow-up visits, visual acuity improved from initial presentation, and also improved after the silicone oil tamponade removal.

**Conclusions**
Active aspiration through the soft silicon tip cannula can be used to reach, and assist removal of metallic intraocular foreign bodies, being this maneuver safe, reproducible, possibly time-saving, and also it could potentially avoid the risk of IOFB mobilization, avoiding further damage to the retina.

**Financial Disclosure**
Neither the author nor the coauthors have any conflict of interest to disclose.
Title
Scleral fixated Carlevale intraocular lens: fishing haptic and dealing with a pocket torn

Purpose
To describe a complication that occurred during Carlevale IOL implantation and how to deal with it.

Setting/Venue
Vitreoretinal Service. Bristol Eye Hospital. University hospitals of Bristol NHS, Bristol, United Kingdom

Methods
A 73 years-old lady, with a prior history of longstanding central cornea scar as a consequence of herpetic keratitis in her right eye, and complicated cataract surgery requiring anterior vitrectomy and secondary scleral sutured monofocal IOL implant a year ago in the same eye. She was referred to our service due to subluxated IOL causing deterioration in her right sight. Under examination, VA was 0.2 (LogMAR), central cornea scar without anterior chamber reaction and nasally subluxated IOL behind pupil was noted. Posterior pole examination was unremarkable. Then, we decided to exchange it with a Carlevale IOL.

Results
Conjunctiva opening at temporal and nasal sides, scleral pockets construction (3mm size) with a crescent knife, one flap of pockets located nasally to limbus is unintentionally torn. 25G port x3 inserted, followed by core vitrectomy, peripheral vitrectomy with trimmed of the vitreous base under scleral indentation, during this stage a complete subluxation of IOL into vitreous cavity occurred. Then, the IOL is rescued with a backflush cannula into the anterior chamber, IOL is cut into 2 halves and removed through the main cornea incision. A tunnel through pockets with a 23-gauge needle is created with subsequent injection of Carlevale IOL, one plug is held with Kuhn forceps and externalized from the two pockets (first attempt IOL opened outside cornea so reloaded and successfully fixated), Corneal scarring made visualisation difficult. Finally, the cornea was sutured with 10/0 Nylon x 3, sclerotomies sutured with 8/0 Vicryl, pockets sutured with 8/0 Vicryl (nasal torn pocket required multiple Vicryl sutures, after completed closure, confirmation of no leakage with fluorescein drops instillation. Conjunctiva was closed with 8/0 Vicryl, and Cefuroxime intracameral injection.

Conclusions
Carlevale intraocular lens implant is an excellent option in cases with the absence of capsular support. It can be reloaded easily. If pockets are torn, plugs can be fully covered simply by adding more sutures as they are quite flexible and manageable. To prevent postoperative complications is recommended to perform a complete vitrectomy under indentation, and at the end of the procedure verify the correct closure of scleral pockets and sclerotomies with fluorescein drops instillation.

Financial Disclosure
No financial disclosure
**Title**
Trimanual Pars Plana Vitrectomy for Diabetic Tractional Retinal Detachment

**Purpose**
To observe the efficacy and safety of a new technique of pars plana vitrectomy (PPV) under chandelier illumination to remove the fibrovascular membrane (FVM) using the perfluorocarbon liquid (PFC) as a third hand to help bimanual dissection of the membranes in complex advanced diabetic cases.

**Setting/Venue**
Giza Memorial Institute for Ophthalmic Research, Egypt

**Methods**
We present our case, female patient 55y old phakic eye, with advanced PDR and tractional retinal detachment. Her visual acuity was hand motion and IOP 18mmHg. This patient underwent fourth scleral port trimanual vitrectomy assisted with chandelier illumination, under PFC and vital dyes, using 23-gauge trocars and 25-gauge chandelier light probe inserted through the fourth port. After core vitrectomy and vitreorrhexis for releasing the anterior vitreous from FVM, we injected PFO and started bimanually dissection of the tightly adherent membranes using curved scissor in one hand and forceps in the other hand to dissect the membrane very careful. ILM peeling and endolaser were made and filtered air was left in vitreous cavity as tamponade agent. The patient was followed up for 6 months after the surgery.

**Results**
The final anatomical success and improved visual acuity (0.1 post-op) was achieved at 6 months. Operative time was shorter than in usually bimanual PPV. There were no intraoperative complications.

**Conclusions**
Trimanual PPV is a new, safe and effective technique in managing complicated advanced diabetic eye disease with less intraoperative complications as bleeding and iatrogenic retinal breaks. This approach provide a better visualization of the dissection planes between the retina and the membranes in most vitrectomy challenging cases. Such approach for fibrovascular membrane removal provided more effective and precise excision of the membranes, particularly beneficial in eyes with extensive fibrovascular proliferations.
Title
How Big Is Too Big

Purpose
Presenting a unique case of a large incarcerated intraocular foreign body (IOFB) of 22 mm with traumatic endophthalmitis with retinal detachment

Setting/Venue
Tertiary care eye hospital, Kolkata, India

Methods
A 35 years male presented with BCVA of Perception of light (PL) in the traumatic Left Eye. Slit lamp examination revealed evidence of repaired scleral tear at the supero-temporal quadrant (STQ). Posterior subcapsular cataract was present. Fundus examination revealed vitreous exudation and haemorrhages, obscuring the view of retina. CT scan showed a large metallic foreign body lodged in the left eye. Lensetcotomy and Vitrectomy with intraocular antibiotics was planned. During vitrectomy the main challenge we faced, was to induce PVD in the area of IOFB incarceration at SNQ. After Core vitrectomy and lensectomy IOFB was taken out through corneal incision with difficulty. Intraocular foreign body was as large as 22 mm in length. Repeated attempts were made to detach the posterior vitreous in the nasal quadrant but all attempts went in vain. LPFC was used to stabilize posterior retina and further attempts were made to detach posterior vitreous but become unsuccessful. Ultimately fluid air exchange was performed through the existing superior break and endolaser was done. Intraocular antibiotics (Vancomycin Ceftazidime) were injected, followed by silicone oil injection

Results
Vitreous Biopsy showed staphylococcus Aureus in culture. At 3 weeks post op BCVA was CF 4 meter and AT was 18 mm of Hg. Fundus revealed an area of bare sclera at supero-nasal area. At 2 months post op vision was improved to 4/60 and AT was 10 mm of Hg.

Conclusions
Even after devastating penetrating trauma with incarcerated large IOFB with endophthalmitis, globe could be salvaged due to timely intervention. Patient also gained ambulatory vision.

Financial Disclosure
Not Applicable
Purpose
Purpose: Intravitreal injections are commonly used intraocular medication in the management of retinal diseases. The application has been described as causing sterile endophthalmitis and with the presence of impurities through the plastic syringe use and silicone bubbles. The presence of silicone oil drops associated with intravitreal injections has been reported in up to 1.73% of patients, causing floaters. Sterile endophthalmitis is an infrequent complication of intravitreal injections.

Methods
Methods: 86-year-old male patient presented complaining of loss of vision in the left eye of days, with light perception. The patient had wet macular degeneration receiving intravitreal injections with anti VEGF. The exploration showed conjunctival hyperemia, cellularity, granulomatous reaction in the anterior segment with keratic precipitates, silicone bubbles, and vitreous inflammation. Medical treatment with topical steroids and cycloplegics did not improve symptomatology or exploration.

Results
Results: We did a vitrectomy with vitreous sample analysis. The vitreous sample did not show any microorganisms, only the presence of silicone bubbles and histiocytes with silicone in their cytoplasm. The patient improved the symptomatology and exploration. The visual acuity improved to the previous situation. The patient is under treatment with intravitreal injections.

Conclusions
Conclusions: There is evidence of Silicone causing an inflammatory reaction, granulomatous type (contamination of the skin with silicone oil found on needles and syringes). Polydimethylsiloxane has been associated with immune reactions that can produce foreign body-associated inflammations in other parts of the body. In the eye, the presence of silicone bubbles has the theoretical risk of glaucoma and corneal edema. This is the first case of a patient presenting with Sterile endophthalmitis and requiring surgery. The results we got help us to justify the relationship between silicone bubbles and inflammation and explain the risks.
Age related macular degeneration with regression of soft drusen after surgery: A rare case

Purpose
To report a case of age-related macular degeneration with regression in drusen after vitreoretinal surgery.

Setting/Venue
Health Science University Ulucanlar Eye Training and Research Hospital, Ophthalmology Department, Ankara, Turkey

Methods
A 69-year-old patient with age-related macular degeneration had geographic atrophy in the right eye and a macular hole in the left eye. Vitreoretinal surgery was applied to the patient to close the macular hole. The patient was followed up with biomicroscopic examination, oct and fundus photography.

Results
Surgery was performed for the macular hole in a 69-year-old patient with age-related macular degeneration and a macular hole in his left eye. Closure was observed in the lip of the hole after surgery. On the ophthalmological examination of the patient 1 year later, regression of the drusen and atrophy in the subfoveal outer retinal zones was observed.

Conclusions
It is a known entity that soft drusen may regress in age-related macular degeneration. Drusen regression is thought to be due to degeneration in the retinal pigment epithelium and photoreceptors. In our case, atrophy was observed in the subfoveal retinal pigment epithelium and photoreceptors in the first year after surgery. At the same time there was a decline in the drusen.

Financial Disclosure
there are no financial conflicts
Persistent macular hole repair with human amniotic membrane graft

Purpose
To report the surgical technique using pars plana vitrectomy (PPV) and human amniotic membrane (hAM) graft in the repair of a persistent macular hole (MH).

Setting/Venue
Ophthalmology Department, Centro Hospitalar Universitário do Porto

Methods
Non-applicable

Results
A 70-year-old male was diagnosed with an MH in the left eye which failed to close after PPV and internal limiting membrane (ILM) peeling. A 23-gauge 3-port PPV and hAM graft was performed. A 25-gauge chandelier endo-illuminator was placed to allow for the bimanual technique. An intraocular dye (doubledyne®) was used to confirm the complete peeling of the ILM and to improve the visualization of the MH edges. The hAM was defrosted in the operating room and a suture helped to mark the basement membrane side. A graft was cut with scissors and, then, unfolded with the basement membrane faced up and the stroma faced down. The hAM graft was introduced into the vitreous cavity with serrated forceps. Within the eye, the graft was carefully trimmed to a smaller size by shaving with a vitrectomy probe. The graft was placed over the MH and gently inserted into the submacular space. The correct positioning of the graft was confirmed after careful fluid/air exchange. SF6 gas was used as a tamponade. Face-down position was recommended for 5 days after surgery. Although visual acuity was 20/100 as in the preoperative visit, the MH was closed at 1 month and 3 months after surgery.

Conclusions
PPV combined with hAM graft is a promising technique for persistent and recurrent MHs in the absence of ILM. The technical difficulty and time of surgery of hAM graft seem to be similar to ILM graft, but the first is more expensive. As shown in this case, the hAM graft has demonstrated high anatomical success.

Financial Disclosure
No financial disclosure
**Title**

Extreme vitrectomy in an extreme unexpected case

**Purpose**

To show an alternative in the management of severe secondary proliferative vitreoretinopathy (PVR) in a vitrectomized eye.

**Setting/Venue**

Ophthalmology Department. University Hospital “Dr. Jose Eleuterio Gonzalez”, Faculty of Medicine, Universidad Autonoma de Nuevo Leon, Monterrey, Nuevo León, Mexico.

**Methods**

Presentation of an alternative surgical technique for the treatment of severe secondary PVR in an eye previously operated with silicone oil tamponade.

**Results**

Two-port surgery and retinal forceps dissection of the PVR through the silicone oil filled vitreous cavity.

**Conclusions**

Despite the expertise of a vitreous and retina surgeon, treating severe secondary PVR can be challenging. Removal of the PVR in a silicone-filled eye is a fast, effective, and safe surgical alternative.

**Financial Disclosure**

None
**Title**
Scleral fixation of a three-piece IOL as a silicone oil barrier in case of a patient with aphakia, aniridia and retinal detachment

**Purpose**
To analyze the efficiency of the barrier function of a three-piece IOL with scleral fixation according to the method of Dr. Yamane during silicone tamponade in a patient with post-traumatic aniridia and aphakia.

**Setting/Venue**
Fyodorov Eye Microsurgery Federal State Institution, Irkutsk branch Russian Medical Academy of Continuing Professional Education, Irkutsk branch

**Methods**
Clinical case: 57 y.o. woman came with aphakia, aniridia and retinal detachment due to severe contusion. Surgical treatment was performed with vitrectomy, retinotomy, IOL implantation and tamponade with silicone oil. Duration of observation is 6 months.

**Results**
Retinal adherence was achieved. Eyesight from L. P. Incerta increased up to 0.05. IOL position was correct, centered. There was no migration of silicone oil into the anterior chamber.

**Conclusions**
Three-piece IOL with scleral fixation according to the method of Dr. Yamane in patients with aphakia and aniridia is a reliable barrier for silicone oil preventing its migration into the anterior chamber.

**Financial Disclosure**
No
**Purpose**
This video demonstrates vitrectomy for endogenous Candida endophthalmitis in an immunocompromised patient with diabetes and underlying malignancy.

**Setting/Venue**
Vitrectomy allows clearance of the fungal load and toxins, provides material for culture, provides intravitreal access for anti fungal delivery, and can manage complications such as tractional retinal detachment.

**Methods**
The video shows the surgical management of such a case, and together with systemic voriconazole, and intravitreal amphotericin B, the Candida endophthalmitis was brought under control, and the infection resolved.

**Results**
The vitreous cavity was cleared of fluff balls, and the retina remained attached. The patient's vision improved to 2/60.

**Conclusions**
Although it is difficult to treat severe Candida endophthalmitis, it is possible to control the infection and to achieve a reasonable outcome in a challenging case such as this.

**Financial Disclosure**
Nil
Minimal Gas Vitrectomy with Scleral Buckle to Minimize Retinal Displacement in Rhegmatogenous Retinal Detachment with Inferior Breaks

Purpose
Recent evidence has demonstrated a high risk of a low integrity retinal attachment (LIRA) with pars plana vitrectomy for rhegmatogenous retinal detachment repair. This is thought to occur because of a stretch of the retina, often inferiorly, induced by the flow of subretinal fluid under the thin elastic retina at the completion of vitrectomy when the patients changes their head position. Retinal displacement has been associated with worse functional outcomes including metamorphopsia and aniseikonia. We have previously described a modification to standard vitrectomy (Minimal Gas Vitrectomy) to minimize the risk of retinal displacement for patients with superior breaks. We now present a novel technique, Minimal Gas Vitrectomy with Scleral Buckle (MGV-SB), as a means of potentially minimizing retinal displacement compared to standard vitrectomy or vitrectomy/scleral buckle for patients with inferior breaks in detached retina.

Setting/Venue
Department of Ophthalmology, St. Michael’s Hospital, Unity Health Toronto

Methods
A patient with a right macula off retinal detachment and retinal breaks at 7 o’clock and 10 o’clock underwent a 23-gauge pars plana vitrectomy, localization and cryopexy of the breaks along with an inferior temporal segmental scleral buckle. No air-fluid exchange was performed. Suturing of sclerotomies, anterior chamber paracentesis of 0.3 ml and an intravitreal injection of 0.6 mL of pure sulfur hexafluoride were then performed. The patient was advised to perform the steamroller maneuver with initial log-roll to face down positioning for 6 hours.

Results
The patient achieved retinal reattachment and post-operative wide-field fundus autofluorescence imaging demonstrated a high integrity retinal attachment (HIRA) with no retinal displacement.

Conclusions
The traditional approach to retinal detachment repair has been to perform a procedure that maximizes single operation re-attachment rate. Solely focusing on this outcome, does not take into account functional outcomes, which are primarily based on the integrity of anatomic attachment. The MGV-SB technique has the potential to minimize retinal displacement in cases with inferior break(s) by using a small volume expansile gas tamponade and localized scleral buckle compared to standard vitrectomy or vitrectomy/scleral buckle with a full gas fill. Modifications to standard vitrectomy that minimize retinal displacement may lead to better functional outcomes for patients.

Financial Disclosure
None
Purpose
To describe a novel technique of type 1 closure of large macular hole

Setting/Venue
Non-randomised interventional case series in a tertiary care retina private practice

Methods
We describe six eyes with large macular holes (more than 800 μm) that underwent multiple leaf inverted ILM peel that were reposed on the macular hole like cabbage leaves ensuring that the vitreal surface of the flap above adhered to the retinal surface of the flap below ensuring a hook-and-loop fastener closure of the inverted ILM flaps without the need to stuff ILM into the macular hole.

Results
All holes had a type 1 closure with improvement of VA by 2-4 lines

Conclusions
The cabbage closure of macular hole with the inverted ILM flaps uses the principle of hook-and-loop fasteners (Velcro tape) and may be used for all macular holes to achieve consistent type 1 closure.
Purpose
To show a different treatment approach of a macular hole (MH) secondary to a retinal arterial macroaneurysm (RAMA) rupture by pars plana vitrectomy (PPV) and autologous transplantation of a free flap of internal limiting membrane (ILM) during primary surgery.

Setting/Venue
Eye Hospital, University Medical Centre Ljubljana, Slovenia.

Methods
A 60-year-old female patient presented with a one-day history of sudden loss of central vision in her right eye. Best-corrected visual acuity (BCVA) upon arrival at the hospital was counting fingers at 0.5 meters. Fundus examination revealed a large sub-ILM hemorrhage involving the macula in her right eye and grade 2 hypertensive retinopathy in her left eye. On the third day after presentation of symptoms, further deterioration with vitreous hemorrhage developed. We performed a 25-gauge PPV, with ILM peel overlaying the macular hemorrhage. A ruptured RAMA was revealed in the inferotemporal macular region. After removal of the thick blood clot under the ILM with vitreous cutter, we detected a full-thickness MH approximately one-third the size of the optic disc over-lying the submacular hemorrhage. Part of the submacular clot was protruding through the hole, indicating a preexisting full-thickness MH. The protruding clot was removed through the hole using a soft-tip backflash instrument. Due to subretinal hemorrhage, retina at the edges of the hole was fixed. The ILM was then further peeled off outside the vascular arcades and transplanted as a free flap into the MH. We instilled 10% C3F8 gas as tamponade at the end of the surgery.

Results
At the follow-up examinations 3 months and 1 year after the surgery, anatomical closure of the MH was observed. Functional and anatomical results were comparable to the results of patients treated for idiopathic MHs. Optical Coherence Tomography (OCT) scan showed early restoration of the outer retinal layers. We observed improvement of visual acuity to 20/200, however there was also development of a significant cataract. The patient was referred for cataract surgery. At the last follow-up examination two years after the surgery, MH remained closed and the BCVA improved to 10/20 on Snellen chart.

Conclusions
Autologous transplantation of an ILM free flap during primary surgery resulted in successful closure of MH following RAMA rupture. OCT showed early restoration of the outer retinal layers, and the patient had significant improvement of vision. This technique can be an efficient surgical approach for treatment of MH related to ruptured RAMA in selected cases.

Financial Disclosure
No financial disclosure
**Title**
Salvaging and Re-Scleral fixating a partially posteriorly dislocated SF-IOL

**Purpose**
To describe a safe, simple, tissue and time friendly approach of scleral fixation of a post traumatic partially posteriorly dislocated SF-IOL with one broken suture

**Setting/Venue**
Ishwar eye centre, a tertiary eye care centre in Northern India

**Methods**
The patient underwent 3port pars plans vitrectomy, the posteriorly dislocated IOL was lifted with a forceps and its haptic brought into the anterior chamber, made to rest on the peripheral iris. A 3mm x 3mm paralimbal partial thickness scleral flap was made diagonally opposite the point where the other haptic of the lens was already scleral fixated. A straight 10-0 prolene needle was passed through the scleral flap base and subsequently through the haptic fenestration of the IOL and brought out through a clear corneal incision diagonally opposite the scleral flap on a bent 26 g needle and then passed in the exact opposite fashion encircling the haptic and brought out under the scleral flap. The lens was now pushed behind the iris. On sequential tightening and tying the suture the Intra ocular lens was stable and well centered in the ciliary sulcus. Post operatively the patient was satisfied with the quick and stable recovery of vision.

**Results**
The patient's vision improved from uncorrected visual acuity of counting fingers vision to 6/9 snellen visual acuity in the operated eye. The eye was quiet, with clear cornea and healthy retina in the post operative period.

**Conclusions**
This procedure describes a simple, safe and elegant method for re-scleral fixating a foldable posteriorly dislocated intra ocular lens. It avoids a longer surgery and concurrently more tissue / corneal trauma of making large incisions to remove these lenses and replacing them with a new scleral fixated lens with resulting prolonged post operative recovery and higher astigmatism induction. It results in a stable lens and a happy patient.

**Financial Disclosure**
NO FINANCIAL RELATIONS
The surgical treatment of massive submacular haemorrhage in patient with neovascular age-related macular degeneration (clinical case report)

**Purpose**
Age-related macular degeneration (AMD) is the leading cause of blindness in people over 50 years old. About 10% of patients with AMD have the neovascular form. Complicated forms of AMD in 15% of cases lead to deep and permanent visual loss, one of the main causes of which is submacular hemorrhage (SMH). The presence of hemosiderin in the blood has toxic effects on the overlying photoreceptors; clot retraction can damage the photoreceptors. Early intervention is generally better. Purpose – the analysis of surgical treatment of massive SMH by subretinal injection of recombinant prourokinase in patient with neovascular AMD.

**Setting/Venue**
The work was performed in the S. Fyodorov Eye Microsurgery Federal State Institution, Khabarovsk, Russia

**Methods**
Women, 56 years old with massive SMH associated with neovascular AMD was observed. The period of manifestation of SMH was 5 days. Best corrected visual acuity (BCVA) was 0,05. There was no previous anti-VEGF treatment. During fundus examination massive subretinal haemorrhage in macular area was revealed. The central macular thickness (CMT) was 1025 μm. Patient underwent 25Ga pars plana vitrectomy. Then subretinal injection of recombinant prourokinase 2000 IU was performed using small 38Ga microcannula. Finally, fluid-air exchange with postoperative vertical head positioning was performed. SMH was displaced thus from the macular area to the inferior periphery.

**Results**
No complications during the surgery were noted. There was attached retina in macular area in 7 days after surgery. BCVA increased to 0,3. CMT decreased to 307 μm. The follow up period was 30 months. During advanced follow up period the BCVA increased to 0,5. There was full reduction of SMH. The retina was attached. Patient noted the improvement of BCVA and disappearance of spot in central visual field. There were no recurrent SMH and macular edema in follow up period.

**Conclusions**
1. The analysis of long-term outcomes of surgical treatment of massive SMH by subretinal injection of recombinant prourokinase in patient with neovascular AMD revealed high efficacy of this method. 2. This method of surgical treatment may increase and save visual acuity in such patients and significantly reduce the size of central scotoma.

**Financial Disclosure**
No
Title
Endoscope assisted Carlevale lens implantation in patients with insufficient capsular support.

Purpose
To present the benefits of endoscope assisted surgery in Carlevale intraocular lens (IOL) implantation.

Methods
We present the technique of Carlevale lens implantation with the use of an intraocular endoscope in a case of posttraumatic aphakia after globe rupture. An 80-year-old male, who had been previously operated on retinal detachment (RD) twice in the left eye (LE) suffered a globe rupture in the LE that required primary corneoscleral wound closure. Four months later he was referred to our centre due to recurrent retinal detachment. He presented with visual acuity (VA) of light perception, intraocular pressure (IOP) of 48 mmHg, traumatic IOL subluxation and total RD in the LE and was operated with a circumferential scleral band, pars plana vitrectomy (PPV), dissection of vitreoretinal proliferation, extraction of luxated IOL and 12% C3F8 injection. Four months later he was scheduled for secondary IOL implantation.

Results
Intraocular endoscopy during Carlevale IOL implantation showed an anterior displacement of the nasal iris and ciliary body due to the previous limbal wound closure which modified our standard surgical approach. The nasal sulcus was at 1 mm from limbus instead of 1,5 mm and the endoscope confirmed that the IOL plugs were placed in the sulcus, not through the ciliary processes. The nasal close-loop haptics were initially observed to be partially touching the ciliary processes so they were repositioned. Intraoperative confirmation of the correct sulcus implantation of the haptics and plugs of the Carlevale IOL provided excellent lens centration and stability during 2 months of follow-up and VA was 0.2 on a decimal scale.

Conclusions
Intraocular endoscopy is an excellent tool in the implantation of IOLs in the sulcus especially in eyes with anatomic changes after trauma. It allows the direct view of structures like the sulcus and ciliary body otherwise unseen during standard surgery where haptics are placed blindly behind the iris. The intraoperative confirmation of a proper IOL implantation provides stability and prevents future complications.

Financial Disclosure
Neither author has a financial or proprietary interest in any material or method mentioned.
Purpose
Combined cataract and pars plan vitrectomy (PPV) surgery is often performed. However, the absence of the red reflex still makes cataract surgery very challenging. We report the clinical presentation, surgical management, and outcomes of a patient with a cataract and dense vitreous hemorrhage, and demonstrate how to use retro-illumination to facilitate their removal.

Setting/Venue
Case report. A 58-year-old woman arrived at the hospital due to an acute vision loss of the right eye (RE) a month ago that does not allow seeing fundus details. Fundus examination of the left eye (LE) was normal. The patient did not report any previous ocular trauma, and had history of arterial hypertension.

Methods
A corrective surgical procedure in the RE was performed with 23G PPV along with 25G chandelier light (Alcon) that was placed into the nasal quadrant trocar. Cataract surgery started first positioning the light tip towards the posterior pole, thus providing a better definition of the crystalline lens by retroillumination. The anterior capsule was stained with Trypan blue solution to perform the capsulorhexis and then hydrodissection. At the beginning of the phacoemulsification of the nucleus, the position of the light was changed by horizontalizing the tip, allowing a better visualization of the nucleus and extraction of the lens cortex by irrigation-aspiration. Finally, posterior chamber intraocular lens (IOL) was placed. Due to insufficient mydriasis, a Malyugin Ring was placed and the PPV was performed using BIOM®5 (Oculus), that showed a very dense vitreous hemorrhage with adhered hyaloids. Central core and peripheral vitrectomy assisted with purified triamcinolone staining was then implemented. Since the bleeding was found to be caused by rupture of a retinal macroaneurysm, endophotocoagulation was applied and the vitreous cavity was filled with air. Visual acuity (VA), intraocular pressure (IOP), slit lamp biomicroscopy (SLB) and vitreoretinal findings were measured.

Results
The preoperative ophthalmological examination revealed VA of perception and light projection in the RE and 20/20 in the LE. The IOP was 16 mmHg in RE and 14 mmHg in LE. SLB revealed the presence of a sub-capsular and mild nuclear cataract. The fundus examination of the RE revealed a dense vitreous hemorrhage that made it impossible to see background details. Media transparency was achieved by retro illumination-assisted surgery and dense vitreous hemorrhage was solved. After 6 months of follow-up, the patient’s RE VA was 20/25 and there was no rebleeding after vitrectomy.

Conclusions
This video demonstrates how to use retro illumination-assisted surgery to facilitate cataract removal in the presence of dense vitreous hemorrhage. The absence of the red reflex in these cases makes essential the use of retro-illumination with a Chandelier light to avoid possible complications in the cataract surgery.

Financial Disclosure
NONE
**Title**
Removal of Posterior Segment IOFB without magnet or specialised forceps

**Purpose**
To introduce a simple atraumatic technique to remove intravitreal Foreign body.

**Setting/Venue**
34 years old lady presented with injury to LE by high velocity particle while mowing the lawn. Preliminary findings were VA -HM, central corneal laceration (3mm), traumatic cataract Imaging studies showed 3mm size non-metallic IOFB lying near macula. Surgery performed at National Hospital Kandy, Sri Lanka by Dr. P. Sriharanathan, Consultant VR surgeon.

**Methods**
Vitrector is converted as forceps by modifying its parameters. High vacuum (600mmHg), suction alone vitrectomy probe used as forceps to flip and lift the FB without damaging underlying retina.

**Results**
FB removal done without traumatising adjacent structures. This patient achieved final CDVA of 6/9 after placement of IOL in sulcus.

**Conclusions**
Generally IOFB removal done after meticulous vitrectomy. Once foreign body separated from adhesions, expensive forceps used to grasp the FB for delivery. If FB is non-metallic magnet cannot be used. The technique described here is carried out without extra instruments, applicable to both metallic and non-metallic FBs. Currently its being used as routine technique in our facility.

**Financial Disclosure**
nil
# In Vivo Assessment of Retinal Reattachment in Humans using Swept-Source Optical Coherence Tomography

**Presenter**
- Aditya Bansal
- Canada

**Co-Author 1**
- Wei Wei Lee

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**Methods**
Fifteen consecutive patients with a single or multiple retinal break(s) within 3 clock hours in detached retina above the 8 and 4 o'clock meridians with any number, location and size of retinal breaks or lattice degeneration in the attached retina, proliferative vitreoretinopathy ≤ grade B, undergoing treatment with PnR were eligible for the study. All patients underwent PnR as described in the PIVOT randomized trial. SS-OCT was performed at presentation and every 2 hours for the first six hours after gas injection, at day 1, 2, 5, and at week 1, 2, 4 and 6 after PnR. The primary outcome was the longitudinal assessment of early post-operative SS-OCT to establish stages of reattachment.

**Results**
Reattachment occurred in five stages: Stage 1, the approach of the retina towards the retinal pigment epithelium (RPE), 100% (15/15). Stage 2, reduction in cystoid macular edema and outer retinal corrugations, 100% (15/15). Stage 3, contact of the retina and RPE occurred completely in 66.7% (10/15). Stage 4, deturgescence of inner and outer segments of the photoreceptors, 66.7% (10/15). Stage 5, recovery of photoreceptor integrity in three specific sub-stages, 5A: external limiting membrane (10/15, 66.6%), 5B: ellipsoid zone (7/15, 46.6%), 5C: interdigitation zone/foveal bulge (20%, 3/15). 33.3% (5/15) had persistent subfoveal fluid and 20% (3/15) had the formation of outer retinal folds.

**Conclusions**
This study characterizes the in vivo physiology and stages of retinal reattachment in humans using SS-OCT.

**Financial Disclosure**
None
**Title**
Vitrectomy and Amniotic Membrane Graft for Retinal Detachment with Macula Hole in a child with Retinal vessels occlusion and MTHFR variant

**Purpose**
We present the use of an amniotic membrane graft as a scaffold for the repair of a large macula hole and associated retinal detachment in a child with a combined central artery and vein occlusion as the initial presentation of elevated homocysteine and MTHFR C677T variant.

**Setting/Venue**
The surgery was performed in The Hospital for Sick Children, Toronto, Canada.

**Methods**
A 14 year-old boy presented with acute vision loss in his right eye. Initial assessment revealed a combined central retinal artery and vein occlusion with extensive retinal hemorrhages and macula edema. He subsequently developed a total retinal detachment with a large full thickness macula hole secondary to severe macular edema. A 23G pars plana vitrectomy with internal limiting membrane peeling was performed. No peripheral retinal breaks were found. An amniotic membrane graft was placed under the macular hole. Air-fluid exchange was performed and silicone oil was injected.

**Results**
Patient achieved retinal reattachment and macula hole was closed with amniotic membrane in situ. Extensive investigation into the cause revealed a heterozygous mutation (C677T variant) in the methylenetetrahydrofolate reductase (MTHFR) gene and an elevated homocysteine and factor VIII level. Rheumatological and infectious work-up was complete and normal.

**Conclusions**
The benefits of an amniotic membrane transplant in closing large macular holes has been demonstrated in the past. This case demonstrates that amniotic membrane transplant may be a useful technique for retinal detachment repair of a large macula hole associated retinal detachment to achieve anatomic success. Combination of the heterozygous C677T MTHFR mutation and an elevated homocysteine and factor VIII levels may lead to an increased thrombotic potential and may have resulted in the combined central retinal vein and artery occlusion in an otherwise healthy 14-year-old boy.

**Financial Disclosure**
None
Title

Transretinal feeder vessel ligature in Von Hippel-Lindau exsudative retinal detachment

Purpose

Report a case of retinal capillary hemangioma with exsudative retinal detachment treated with pars plana vitrectomy and transretinal feeder vessel ligature.

Setting/Venue

Retina Clinic. São Paulo. Brazil

Methods

Case report of a only eye patient with VHL peripheral retinal angiomas and associated retinal exsudative detachment, submitted to pars plana vitrectomy, surgical feeder vessel ligature and endophotocoagulation.

Results

Patient showed marked anatomical and functional improvement 6 months after surgery. Macular exsudative detachment resolved completely and patient recovered 20/20 visual acuity. Retinal angiomas regressed in size and exsudative activity.

Conclusions

Pars plana vitrectomy plus transretinal feeder vessel ligature can be successfully used as a treatment of capillary hemangiomas that do not respond to conventional treatments or in advanced vitreoretinal phases of the disease. The therapy can be safely performed under certain circumstances and can offer good anatomical and functional results.

Financial Disclosure

none
Retinal redetachment and use of silicone oil for treatment of macular folds after RD surgery

**Purpose**
To present a surgical procedure for the treatment of retinal fold after retinal reattachment surgery

**Setting/Venue**
Hospital Universitari Germans Trias i Pujol

**Methods**
An interventional case report of a surgical complication of retinal detachment surgery was done.

**Results**
The patient had retinal fold involving macula after PPV for retinal detachment on his right eye, visual acuity was hand movement, injection of subretinal fluid (BSS) was used for unfolding and redetachment of the retina, peripheric retinectomy was performed followed by injection of silicone oil. Visual acuity improved to 20/400 (ETDRS)

**Conclusions**
Retinal folds are an infrequent but severe complication of rhegmatogenous retinal detachment surgery. Different strategies have been reported to manage the anatomic alteration, and there is consensus that rapid action must be taken when compromising the macula, due to the resulting visual impairment it may cause.

**Financial Disclosure**
No financial disclosures
Mix and match techniques for Optic Disc Pit Maculopathy in young population

We aim to compare vitrectomy and stuffed technique peeling with inverted flap technique plus LASER versus ILM free flap plus LASER to treat Optic Disc Pit Maculopathy in young population.

Methods
We made a comprehensive prospective study regarding the current treatment modalities for the treatment of ODP maculopathy and we compare free flap ILM with LASER and Stuffed technique plus inverted technique with LASER.

Results
Vitrectomy plus stuffed technique peeling mix and match with inverted flap plus LASER was statistically significant better than free flap and LASER (p=0.01).

Conclusions
In young populations our study revealed that vitrectomy with stuffed technique and inverted flap ILM technique plus LASER is the best option to obtain the best anatomical and functional result in this young patients.
**Title**
Complicated pars plana vitrectomy for rhegmatogenous retinal detachment and Cataract extraction in a stickler syndrome patient

**Purpose**
Complications in lens capsule stability during combined pars plana vitrectomy and cataract extraction in a stickler syndrome patient

**Setting/Venue**
Rabin medical center, Israel

**Methods**
25G pars plana vitrectomy and oxane HD silicon tamponade after cataract extraction with lens capsule instability and the usage of malyugin ring and capsular tension ring.

**Results**
Intraocular lens in the bag and stable with attach retina under oxane HD silicon tamponade

**Conclusions**
Intraocular lens in the bag and stable with attach retina under oxane HD silicon tamponade

**Financial Disclosure**
NONE
### Title
Complicated pars plana vitrectomy for rhegmatogenous retinal detachment with Proliferative vitreoretinopathy

### Purpose
Usage of end grasping forceps for removal of subretinal fibrosis

### Setting/Venue
Rabin medical center, Israel

### Methods
25G pars plana vitrectomy with the usage of end grasping forceps for removal of subretinal fibrosis

### Results
Retina attach after 25G pars plana vitrectomy with silicon oil tamponade

### Conclusions
25G pars plana vitrectomy with the usage of end grasping forceps for removal of subretinal fibrosis. Retina attach after pars plana vitrectomy with silicon oil tamponade

### Financial Disclosure
NONE
### Purpose
To show the management of suprachoroidal silicone oil (SO) as a complication during pars plana vitrectomy in a retinal detachment patient.

### Setting/Venue
Ophthalmology Department. University Hospital “Dr. Jose Eleuterio Gonzalez”, Faculty of Medicine, Universidad Autonoma de Nuevo Leon, Monterrey, Nuevo León, Mexico.

### Methods
Description of a trans-surgical complication and its management as occurred in one patient.

### Results
38-year-old male patient with a history of rhegmatogenous retinal detachment (RRD) and cerclage placement. A second procedure was planned due to a retinal re-detachment and secondary proliferative vitreoretinopathy. During air/SO exchange, SO was wrongly injected in the suprachoroidal space. Removal of suprachoroidal SO is performed in the same way as subretinal fluid in RRD surgery.

### Conclusions
Complications during vitrectomy surgery may occur at any point of the surgery. Proper management of this complication includes external drainage through a sclerotomy. This complication can be avoided by injecting the SO into the vitreous cavity with a proper technique.

### Financial Disclosure
None
A regenerative approach for a degenerative disease: Plasma rich in growth factors membrane in the treatment of MacTel Type 2 related full thickness macular holes

Purpose
Full thickness macular hole (FTMH) associated with macular telangiectasia (MacTel) Type 2 is a vision threatening complication with no definitive treatment and distinctly poor anatomical and functional success rates in comparison with idiopathic FTMH. Our aim is to report the effect of a regenerative approach such as the use of plasma rich in growth factors membrane (PRGFm) in the surgical treatment of this neurodegenerative disease.

Setting/Venue
Single center institutional vitreoretinal surgery practice.

Methods
An educational video demonstrates the preparation and use of PRGFm in the surgical treatment of MacTel Type 2 related FTMH. Three representative cases are shown with preoperative and postoperative swept source OCT (SS-OCT) imaging and data is collected for BCVA, anatomic closure rates and follow up.

Results
An autologous blood sample is obtained on the same day of surgery and centrifuged twice for a total of 22 minutes. The platelet dense, leukocyte free fraction is isolated and then activated by the addition of 10% calcium chloride. It is later incubated at 37 °C to obtain membrane consistency. 3 eyes of 3 patients underwent PPV + PRGFm and follow-up with SS-OCT with one surgeon (JA) performing 2 cases and another (CM) the remaining one. Case 1 was a 63 year-old female with no history of previous surgery with a 677 µm FTMH on his right eye that improved from 20/100 to 20/30 after surgical treatment without internal limiting membrane (ILM) removal. Case 2 was a 72 year-old female with a 628 µm recurrent macular hole on his left eye that improved from counting fingers (CF) vision to 20/300 after treatment with ILM removal. Case 3 was a 70 year-old female presenting with a 624 µm FTMH on his right eye that improved from 20/200 to 20/100 after treatment with ILM removal. Median follow up was 6 months (range 6-18 months), anatomic closure rate was 100% and median LogMar change 0.5 (range 0.3-0.8). No PRGFm related complications were registered.

Conclusions
Our series suggests that the addition of PRGFm may improve anatomic results and an overall improvement in vision for patients with MacTel type 2 related FTMH. PRGFm can be used safely and provides a stimulus for tissue regeneration and closure due to its characteristics. The best results were observed in the youngest participant with no previous surgical history and ILM sparing which may add to the hypothesis of a predominant neurodegenerative component rather than a tractional one. Further studies with control groups and randomized allocation are needed to measure the long term effect of this intervention.

Financial Disclosure
Co-author Juan David Arias is a consultant for TOPCON
Purpose
Acute anterior uveitis (AAU), affecting up to 40% of patients with axial spondyloarthritis (axSpA), risks permanent visual deficits if not adequately treated. We report 2-year results from C-VIEW, the first study to prospectively investigate certolizumab pegol (CZP) on AAU in patients with active axSpA at high risk of recurrent AAU.

Methods
C-VIEW (NCT03020992) was a 104-week (96 weeks plus 8-week safety follow-up), open-label, multicentre study. Eligible patients had active axSpA, HLA-B27 positivity and history of recurrent AAU (≥2 AAU flares in total; ≥1 in the year prior to baseline). Patients received CZP 400 mg at Weeks 0/2/4, then 200 mg every 2 weeks to Week 96. The primary efficacy endpoint was the AAU flare event rate during CZP versus pre-baseline.

Results
Of 115 enrolled patients, 89 initiated CZP (male: 63%; radiographic/non-radiographic axSpA: 85%/15%; mean disease duration: 9.1 years); 83 completed Week 96. There was a significant 82% reduction in AAU flare event rate during CZP versus pre-baseline (rate ratio [95% CI]: 0.18 [0.12, 0.28], p<0.001). 100% and 59.6% of patients experienced ≥1 and ≥2 AAU flares pre-baseline, respectively, compared to 20.2% and 11.2% during treatment. Age, sex and axSpA population subgroup analyses were consistent with the primary analysis. There were substantial improvements in axSpA disease activity with no new safety signal identified.

Conclusions
CZP treatment significantly reduced AAU flare event rate in patients with axSpA and a history of AAU, indicating CZP is a suitable treatment option for patients at risk of recurrent AAU.

Financial Disclosure
No declaration of conflicting interest.
### Title
A novel temporary keratoprosthesis technique for vitreoetinal surgery

### Purpose
**Purpose of this work is to introduce a novel method of using a soft contact lens as a temporary keratoprosthesis.**

### Setting/Venue
Vitreoretinal surgery in patients with severe corneal opacification can be very challenging. A temporary keratoprosthesis (KP) can be used as an intraoperative bridge between anterior and posterior segment procedures. However, they are only available in certain sizes and may not be immediately at hand when needed.

### Methods
Three patients with simultaneous corneal and vitreoetinal pathology were treated with a soft contact lens that was used as a temporary keratoprosthesis in order to facilitate vitreoetinal surgery. The soft contact lens was fixated with sutures onto the globe so that no leakage was possible.

### Results
Vitreoretinal surgery with excellent fundus view was possible in all cases. The soft contact lens allowed safe central and peripheral vitrectomy. Surgery was successful in all cases.

### Conclusions
A soft contact lens properly fixated on the globe can successfully replace a temporary keratoprosthesis. This surgical procedure has several advantages like one size fits all, low costs and easy access to the material.

### Financial Disclosure
no financial relations
Artificial iris and intraocular lens implantation by modified Yamane technique after penetrating ocular trauma

**Purpose**
Traumatic aphakia and aniridia are one of the most challenging surgical cases to manage. We present the combined artificial iris and intraocular lens (IOL) implantation using the modified Yamane technique in a patient with aphakia and significant iridocorneal sequelae after penetrating trauma.

**Setting/Venue**
We present an aphakic patient with severe iris defects and corneal leukomas. The absence of enough capsular remnants associated with the iris damage led us to consider the implantation of a scleral-fixed IOL and an iris prosthesis. The Yamane technique associated with the artificial iris proved to be an effective optical and cosmetic correction alternative.

**Methods**
A 58-year-old patient suffered a penetrating ocular trauma in one of his eyes. After the primary globe rupture repair he had a second repairing surgery including new corneal suture, vitrectomy and extraction of crystalline debris. The patient results with significant iris atrophy, aphakia, corneal leukomas and a visual acuity of hand motion. Six months after the trauma, the Yamane technique associated with artificial iris implantation was proposed. The IOL was fixed to the artificial iris prior to surgery. We start the procedure removing the remnants of the atrophic iris. Due to the iridocorneal disruption the intraoperative visualisation of the IOL haptics was poor. Because of this difficulty we decided intraoperatively to fix one of the two IOL haptics to the sclera and left the other haptic in sulcus over some remnants of the lens capsule.

**Results**
One year after surgery, the IOL-iris complex remains stable, with a best corrected visual acuity of 20/32 and a spherical equivalent of - 1.5D in the injured eye. The absence of sutures allowed by the Yamane technique minimizes the risk of instability following suture resorption that could occur in the next years.

**Conclusions**
Combining haptics fixation of a 3-piece IOL onto an iris prosthesis provides an excellent cosmetic and functional results. Fixation the haptics to the sclera avoids the use of sutures and its long-term resorption. The artificial iris implant associated with an IOL using the Yamane technique is an excellent sutureless alternative in the management of penetrating ocular trauma with iris and lens involvement.

**Financial Disclosure**
None of the authors have any financial interests in the products shown in this video. Dr Antonio Uceda-Montañes is Medical Monitor in the EMEA region for Johnson and Johnson Vision.
How to handle ILM easily during the macular hole surgery: Infusion off technique for ILM free flap and infusion direction manipulation technique for inverted ILM flap

**Purpose**
To introduce an effective and easy way to handle internal limiting membrane (ILM) during the temporal inverted ILM flap and ILM free flap technique by controlling the infusion.

**Setting/Venue**
Surgical video

**Methods**
ON/OFF status of the infusion was controlled during the ILM free flap surgery. Negative pressure, which was formed around the head-shaft junction of the forceps were released. The direction of the Infusion cannula was changed during the inverted ILM flap surgery to stabilize the location of the flap.

**Results**
Two cases of ILM free flap surgery using infusion off technique were demonstrated. Flap stayed stable during the infusion off technique. Another two cases of temporal inverted ILM flap surgery were presented. The location of the temporal ILM flap was flipped and stayed stable, covering the macular hole during the air-fluid exchange procedure.

**Conclusions**
Infusion OFF technique and infusion direction manipulation technique is an efficient method to control ILM during the macular hole surgery.

**Financial Disclosure**
We have no financial relations.
**Let's explant it : Management of complete dislocated intraocular PMMA lens**

**Presenter**
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**Purpose**
To describe the technique and the steps needed for safe explantation of a total dislocated PMMA lens into the vitreous cavity after ocular trauma.

**Setting/Venue**
Ophthalmology Department, Agadir Military Hospital, Agadir, Morocco.

**Methods**
In this video, we describe the case of a 68-year-old man, who underwent ECCE surgery 25 years ago and came to the ophthalmology department emergencies for posttraumatic vision loss. Slit-lamp examination revealed ruptured capsular bag with no sulcus support. Dilated fundus examination showed a totally luxated IOL into the vitreous cavity, laying on the retina. Peripheral retinal examination reveal no breaks or retinal detachment. Decision was made to perform vitrectomy and explantation of the PMMA lens with secondary iris-claw lens.

**Results**
The patient underwent under sub-tenon anesthesia, a 23-gauge 3 ports pars-plana vitrectomy. First, an anterior vitrectomy was done, followed by a posterior vitrectomy with 360 degrees liberation of vitreous adherences to the IOL, until it became fully mobile in the vitreous cavity. Then, Peripheral vitrectomy was made. Remnants of capsular bag were cut with vitrectomy probe. A 23 gauge micro forceps was used to grab one of the PMMA lens Haptics into the anterior chamber, then a bimanual technic was used with a second 23 gauge micro forceps introduced from the limbus, grasping the other haptic and taking it off the incision outside the anterior chamber permitting its stabilization without further grasping. A 6 mm limbal keratotomy was done using curved katzin scissors, following the scar of the old ECCE incision. The PMMA was explanted true the keratotomy and 10.0 Nylon interrupted sutures were done. Patient was scheduled for secondary iris-claw lens fixation.

**Conclusions**
Explantation of a dislocated PMMA lens into the vitreous can be quite challenging and requires certain dexterity. However scleral tunnel should be preferred to corneal incision for PMMA lens explantation due to less induced astigmatism and self-sealing incision.

**Financial Disclosure**
I have no financial interest.
comparison between 30 gauge ultrathin wall and 27 gauge needle in sutureless intraocular lens flanged technique in diabetic patients: 24-month follow-up study

Purpose
Intraoperative complications in cataract surgery are more common in diabetic patients. Solving aphakia in these circumstances remains a challenge, as the scleral structure has been shown to be different in diabetes. This study aims to analyze the role of a secondary sutureless scleral intraocular lens (IOL) flanged fixation in diabetic patients without capsular support and to compare the anatomical and functional outcomes using a 30 gauge (G) ultrathin wall needle vs. a 27G needle.

Setting/Venue
Retina practice, University of Buenos Aires, Argentina  Ophthalmology Department, University of Leipzig, Leipzig, Germany  Diagnostic Ophthalmology Center, Buenos Aires, Argentina  Ophthalmology Division, Tel Aviv Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

Methods
Multicenter International Study. We included 105 eyes (105 patients) who underwent PPV with secondary IOL fixation using a sutureless 27G (n = 51) or a 30G ultrathin wall (UTW) needle technique (n = 54) and had a 24 months postoperative follow up. Consecutive patients’ records were reviewed for lens stability and centration parameters, intra- and postoperative complications at 7 days, 1, 3, 6, 12, and 24 months after surgery. Correlations between outcome measures and needle size (27G vs. 30G UTW) were analyzed.

Results
IOL displacement occurred in 30 patients (41.2%) in the 27G group and did not occur in the 30G UTW needle group (p < 0.001). Mean time until IOL displacement was 10.5 ± 7.0 months (range: 7 days–24 months). IOL centricity was significantly better in the 30G ultrathin wall needle group compared to 27G (p = 0.001). Additional surgical interventions were necessary only in the 27G group (n = 14).

Conclusions
Conclusions Sutureless IOL flanged technique using a 30G UTW needle is more predictable and has less complications in aphakic diabetic patients, compared to a 27G needle technique.

Financial Disclosure
-Allergan – Consultant  -Bayer – Consultant -Novartis- Consultant -Regeneron- PI  -Genentech-PI  -TSK Laboratory Europe B.V.
# Diagnosis and management of Coats disease from a multimodal perspective

**Presenter**
Maria Parra

**Co-Author 1**
Juan David Arias

**Co-Author 2**
Eduardo J. Viteri

**Purpose**
To demonstrate the utility of different imaging modalities and therapeutic approaches in the assessment and treatment of Coats disease.

**Setting/Venue**
International FOSCAL, Floridablanca, Colombia.

**Methods**
Educative Video. A variety of cases in pediatric and adult patients with Coats disease are discussed. Multimodal imaging using color fundus photography, fluorescein angiography and macular and peripheral SS-OCTA are shown. The imaging and clinical response to various treatments is also evaluated in a didactic and educational way.

**Results**
Patients with Coats and those with related vasoproliferative tumor were treated through distinct treatments. The imaging hallmarks on wide-field fundus photography, fluorescein angiography and macular and peripheral SS-OCTA were exposed showing its changes after the treatment. Specially, an analysis of the characteristics of the periphery is highlighted. The correlation of peripheral and posterior pole images allowed the characterization, monitorization and detection of new vascular abnormalities and their complications. Likewise, differentiating features between pediatric and adult-onset Coats are discussed. Finally, a review of the results after anti-VEGF therapy, steroids, laser photocoagulation, cryotherapy and pars plana vitrectomy (PPV) is done, pointing out the importance of a multidisciplinary combined and continue treatment.

**Conclusions**
Coats disease must be approached from a multidisciplinary perspective both in its diagnosis and in its treatment. There is no a single successful therapy, instead, the real success in coats lies on the implementation of different targeted treatments throughout the patient's follow-up.

**Financial Disclosure**
Juan D. Arias: Topcon Consultant.
**Title**
Mistakes: My Teacher

**Purpose**
To highlight some of the common errors committed by the specialized eye doctors and to imbibe practice forming habits to avoid such future encounters.

**Setting/Venue**
Raghudeep Eye Hospital, Ahmedabad

**Methods**
This illustrative video highlights four common clinical case scenarios. Case 1: A straightforward case of retinal detachment in a pseudophakic patient with a surprise element of 2 IOLS. Mistake made was inadequate peripheral retinal examination and negligence on IOL details. Case 2: A simple case of planned silicone oil removal with intraop IOL drop. This time we were aware of IOL details and so we had a happy ending. Case 3: A case of Brown cataract with a dome shaped mound on Ciliary body (melanoma) which the B-scan was not able to pick up preoperatively. Mistake made was CB imaging was ignored. Case 4: A case of uncontrolled glaucoma caused by a metastatic CB mass. Luckily we did image the CB preoperatively and that saved our day.

**Results**
This educational video illustrates few mistakes we commonly commit while performing intraocular surgery. It shows 4 different clinical scenarios of intraocular surgery wherein the surgeon finds a surprise element intraoperatively. The video also highlights how to avoid these mistakes by comprehensively examining the eye ball as a whole and performing all necessary imaging investigations preoperatively before taking the patient in OR.

**Conclusions**
Mistakes are a part of being human. Precious lessons in life are always learnt in a hard way. And so if we comprehensively examine the eyeball in toto we can avoid these mistakes or human errors.

**Financial Disclosure**
NIL
Optic disk pit maculopathy treated with pars plana vitrectomy and gas tamponade associating inverted autologous internal limiting membrane flap and endolaser

**Purpose**
Optic disc pits (ODPs) are rare congenital anomalies, they can occur sporadically or as an autosomal-dominant inheritance. It is usually unilateral, temporally located in the optic disk and can occur equally in men and woman. We present a surgical procedure for the treatment this disease.

**Methods**
A 30-year-old man referred decreased vision for more than two months in his right eye. Its best-corrected visual acuity was 20/100 (ETDRS). The funduscopy and the optical coherence tomography revealed an optic disc pit with peripapillary retinoschisis and intraretinal and subretinal fluid, extending towards the ODP. His left eye was normal. He received pars plana vitrectomy and gas tamponade with 12% C3F8 associating inverted autologous internal limiting membrane flap and endolaser.

**Results**
This technique showed satisfactory anatomic result with the resolution of retinoschisis and the decrease of the intraretinal and subretinal fluid. The patient showed good functional improvement in visual acuity from 20/100 to 20/50 (ETDRS).

**Conclusions**
The management of ODP maculopathy remains challenging. Different strategies have been reported for the treatment of ODP maculopathy. Nowadays, pars plana vitrectomy is considered the gold standard, either alone or in combination with other treatment modalities.
Title
What's behind door number 17

Purpose
To present a case of vitreous haemorrhage with a surprise cause in a diabetic patient.

Setting/Venue
A 70-year-old mildly controlled diabetic on oral anticoagulants presented as an emergency with a dense vitreous haemorrhage after lifting weight.

Methods
His visual acuity was cc 6/9 in the right eye and hand movements in the left eye. Fundoscopy showed mild background retinopathy in the right eye and was not possible in the left eye due to dense vitreous haemorrhage. Ultrasound examination of the left eye showed a posterior vitreous detachment and dense intravitreal and retrohyaloidal haemorrhage. After 3 weeks of review, the patient decided to proceed with surgery.

Results
A 3 port 23G pars plana vitrectomy was performed. After initial clearing of the intravitreal haemorrhage an organised fibrin plate corresponding to organized haemorrhage on the posterior hyaloid plane was carefully entered and gradually removed to reveal fine subretinal haemorrhage centrally and extensive peripheral organized subretinal haemorrhage. A gas endotamponade and anti-VEGF injection were used to complete the case.

Conclusions
Vitreous haemorrhages in diabetic patients, when not accompanied by tractional detachment, are often benign and self limiting. In cases of very dense haemorrhage where adequate fundoscopy is not possible an early vitrectomy should be considered as different pathologies can coexist and ultrasound examination can sometimes not exclude vision threatening pathology.

Financial Disclosure
none
## Purpose
To show a very challenging case of removal of impacted sharp IOFB near the macula in the choroid of a child with dense vitreous hemorrhage and retinal detachment. Also to show the importance of chorioretinectomy for prevention of postoperative PVR in such cases.

## Setting/Venue
The case was done in Elforsan Eye center, Assiut, Egypt.

## Methods
I/A, vitrectomy, choriretinectomy, removal of IOFB through AC, laser and silicone oil injection were done.

## Results
6 months after removal of Silicone oil, NO PVR was formed and visual acuity was 6/60, and OCT showed macula on with no extension of laser scars.

## Conclusions
Chorioretinectomy is very important step in cases of impacted intraocular FBs to prevent postoperative PVR formation and to postoperative improve VA.

## Financial Disclosure
No financial interest or relations with any company.
Mitigating common pitfalls with subretinal bleb formation during administration of voretigene neparvovec for RPE65 mutation-associated inherited retinal dystrophy

**Purpose**

Voretigene neparvovec (VN) is the first ocular gene therapy approved in the United States and the European Union for the treatment of patients with visual impairment due to confirmed biallelic RPE65 mutation-associated inherited retinal dystrophy (IRD). The surgical technique for administration of VN in clinical practice at the University Eye Hospital (UEH) Tübingen in Germany is outlined herein, and the most common pitfalls that may occur during subretinal bleb formation are outlined. Furthermore, we provide guidance on measures that can be taken to successfully mitigate such hurdles.

**Setting/Venue**

Subretinal injection of VN at UEH Tübingen, Centre for Ophthalmology in Germany, for the treatment of patients with visual impairment due to confirmed biallelic RPE65 mutation-associated IRD.

**Methods**

An immunomodulatory regimen is initiated three days before the scheduled surgical procedure. On the day of surgery, after the patient has been cleared for surgery by the anesthesiologist, the pharmacy collects the VN vial from freezer storage (≤-65°C), and prepares the drug. The VN administration procedure begins within 4 hours from when the drug is thawed by the pharmacy. Prior to the subretinal injection, a 3-port Pars Plana Vitrectomy is performed and a posterior vitreous detachment is induced. The injection site should be located along the retinal superior vascular arcade and should not be located within areas that have pathological features. With the initiation of the bleb, a total of 300 μl of VN is slowly injected into the subretinal space. After subretinal injection, a retinal examination is carried out to evaluate for retinal abnormalities that would require further management. A fluid-air exchange is then performed to remove any excess gene therapy vector in the vitreous cavity and to provide tamponade. Following surgery, the patient is closely monitored and the corticosteroid regimen is continued for up to 14 days.

**Results**

Employing the surgical technique described above, nine patients between 14 and 36 years of age, and with sufficient viable retinal cells, received VN treatment at UEH Tübingen following biallelic RPE65 mutation-associated retinal dystrophy diagnosis. Three subjects received subretinal injections of 300μl of VN in the contralateral eye, after initial unilateral injection. On review of the 12 surgeries performed to date, the most common hurdle that may occur in subretinal bleb formation include i) the dissemination of vector suspension into the vitreous without bleb formation, ii) sudden influx of air bubbles into the bleb and iii) a bleb that does not cover the target area. Mitigation strategies include i) the use of intra-operative optical coherence tomography (OCT), ii) priming of the injection system just prior to insertion of needle through trocar and iii) placement of retinotomies just inside the main vascular arcade. A bleb was successfully raised and VN administered in each case, with treated patients closely monitored following surgery. Follow-up examinations included OCT and fundus autofluorescence imaging in order to assess post-surgical outcomes.

**Conclusions**

The patient journey and VN administration procedure at UEH Tübingen is dependent on timely, efficient, concise communication between the multidisciplinary team. Using the surgical technique and mitigation strategies described above, and with effective communication between the assistant and lead surgeon, a bleb was raised and 300μl of VN was successfully delivered into the subretinal space in each of the 12 surgeries performed at UEH Tübingen.

**Financial Disclosure**

M Dominik Fischer reports consulting fees from Adelphi Values, Advent France Biotechnology, Alphasights, Arctos Medical, Atheneum, Axiom Healthcare Strategies, Biogen, Cambridge Consultants, Decision Resources, Dialectica, Frontera Therapeutics, Janssen Research & Development, Navigant, Novartis, Roche, RegenxBio, Sirion, System Analytic, and STZeyetrial. He has no employment at Novartis, no intellectual property rights and/or financial

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**Financial Disclosure**

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**Title**
Vitrectomy for long date bilateral Terson Syndrome

**Purpose**
To describe the vitrectomy procedure and anatomical outcome of bilateral Terson syndrome in a young male.

**Setting/Venue**
The surgical procedure was performed in IRCCS Istituto Auxologico Italiano, Milan, Italy.

**Methods**
When presenting at our attention the 38 years-old patient had a best corrected visual acuity (BCVA) of light perception in both eyes (OO) with diffuse vitreous hemorrhage and no fundus visualization. Six months before he had a subarachnoid hemorrhage caused by a spontaneous rupture of an aneurism of left anterior cerebral artery. He has been hospitalized for two months in comatose condition and he recovered the ability of speaking only few weeks before our ophthalmological evaluation. Pars Plana Vitrectomy with 23 gauge device was performed in OO under retro bulbar anesthesia. Other than in the vitreous chamber, diffuse hemorrhage with hemosiderin accumulation was found between the posterior vitreous and the internal limiting membrane (ILM) and underneath the MLI. During the surgery, a macular hole (MH) was disclosed in the left eye and a complete peeling was performed, too.

**Results**
One week after the surgery, complete resolution of the vitreous hemorrhage was noted. Spectral-domain optical coherence tomography showed persistent MH in left eye and a diffuse retinal pigment epithelium (RPE) mottling in OO. Neuroretinal layers were preserved but complete atrophy of the foveal photoreceptors was noted. BCVA was counting fingers in the right eye and 20/400 in the left eye.

**Conclusions**
Terson syndrome combined with hemorrhage underneath the ILM is not rare, but the association with MH has been rarely reported. We can speculate that hemorrhages located under the retina or the ILM might elevate hydrodynamic pressure in the sub-retinal space and weaken the fovea causing the MH. Differently, the pre-macular hemorrhage might create tangential tractional forces over the fovea, leading to MH formation. Since blood has a toxic effect to the photoreceptors and RPE, due to oxidative stress, prompt surgery may be essential to avoid secondary damage on retinal layers.

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**Financial Disclosure**
No financial relations to disclose
### Purpose
Video Presentation of Approach to Complicated Mixed Diabetic Retinal Detachment Highlighting steps and instrumentation.

### Methods
Case Presentation

### Results
A 28 year old type 1 diabetic male came in with chronic blurring of vision. Both eyes had had chronic complex tractional and rhegmatogenous retinal detachment. The right eye underwent scleral buckling, phacoemulsification with posterior capsule intraocular lens and bimanual pars plana vitrectomy with silicone oil injection. Intraoperative instrumentation was varied based on presenting pathology and orientation of the membranes to avoid iatrogenic tearing. Retina was successfully attached and silicone endotamponade was inserted. Postoperatively, visual acuity improved and patient regained functional independence. This video highlights the steps and techniques utilize to approach a complex retinal detachment leading to good outcomes.

### Conclusions
Bimanual pars plana vitrectomy under chandelier endoillumination with scleral buckling and phacoemulsification can lead to successful outcomes and improve lifestyles of our patients, even in chronic complex retinal detachment cases. Utmost care and multiple techniques should be employed intraoperatively depending on presentation of retinal detachment to achieve maximized outcomes.

### Financial Disclosure
Department of Health Eye Center, East Avenue Medical Center: Ongoing Vitreo-Retina Fellowship
**Purpose**
To describe a minimally invasive surgical approach of IOFB removal based on the exact identification of its location through multimodal preoperative imaging.

**Methods**
Case presentation, step-by-step high-definition video analysis

**Results**
40-year-old male, hit in his left eye by a high velocity metallic foreign body while working in an elevator shaft and referred for further management after primary wound closure elsewhere. BCVA upon presentation 6/9, left. Dilated fundus examination, axial CT and cranial X-ray scans confirmed the presence of an IOFB. Further multimodal imaging applying midperipheral spectral domain OCT and B scan ultrasound identified its exact intraretinal location without definite encapsulation. Intraoperatively, a step-by-step approach was applied in an attempt to minimize mechanical neuroretinal manipulation upon removal of the IOFB achieving a satisfactory functional and anatomic outcome.

**Conclusions**
Treatment and rehabilitation of complex ocular trauma requires a detailed surgical plan based on comprehensive preoperative imaging in order to exactly localize the IOFB and remove it while minimizing the overall surgical morbidity.
Suprachoroidal Hemorrhage Complicating Scleral Fixated Intraocular Lens Implantation Combined with Dislocated Intraocular Lens Extraction Surgery

**Purpose**

We aimed to perform etiologic analysis by presenting the development of suprachoroidal hemorrhage while applying the surgical approach consisting of dislocated intraocular lens extraction and scleral fixation intraocular lens implantation in an eye that had previously undergone vitrectomy. We tried to determine the preoperative and intraoperative risks. We also presented the drainage of suprachoroidal hemorrhage from a trocar in addition to the conventional scleral incision method.

**Setting/Venue**

72-year-old male patient with a medical history of irregular antihypertensive, anticoagulant and antidepressant use was admitted to our clinic with the complaint of sudden atraumatic vision loss in his right eye. The patient had undergone 2 vitrectomies (without cerclage) in 2004 for recurrent retinal detachment under silicone oil in another center. The silicone was then removed without any complications. On examination, the pupil was fixed and mid-dilated, the intraocular single-piece lens with its capsular support was dislocated and moving on stable retina. There were nondetached retinal folds near ora-serrata, suggesting a suspicion of previously performed retinectomy or retinotomy. The rest of ocular exam was normal.

**Methods**

Dislocated iol removal with using decalin in a vitrectomy set up and scleral fixation iol implantation was planned. Interestingly, one of the haptics of the lens was captured in the angle area on the day of the operation, as the dropped iol was mobile. This situation gave us the advantage of holding the lens without using a decaline during the operation. Under local anesthesia, a 23G infusion trocar was inserted at 7 o’clock, at this stage one of the IOL haptics was at the angle. A straightened rycroft was entered through the infusion trocar and luxated iol was pushed upwards from posterior to the anterior chamber. The IOL was taken out through the enlarged corneal incision. While preparing the scleral lens with PC9 suture, the trocar was removed, and sclera was closed. Tonus was provided by giving viscoelastic and scleral fixation iol was implanted with PC9 passing from 2 and 7 o’clock area. While attempting to centralize the lens, loss of retinal reflex was observed, the lens was removed immediately. Viscoelastic was given from the corneal incision for preventing bulging of choroid. Unfortunately, the injected viscoelastic refluxed from corneal incision. Primary closure of the cornea was rapidly made, as it was observed that there was expulsive bleeding.

**Results**

He was closely monitored with topical steroids, antibiotics and antiglaucomatous drops. He received oral steroids in decreasing posology for 10 days. In severe IOP crises, IV mannitol was given. Daily follow-up of choroidal hematoma was done by USG. Kissing choroidal appearance did not regress, but it was seen that the brightness in the ultrasonographic density of the hematoma started to decrease showing signs of clot liquefaction. According to USG follow-up on the postoperative 14th day, the kissing choroid continued and IOP control deteriorated and the patient was re-operated. After placing infusion in the anterior chamber, suprachoroidal bleeding was drained from 4 and 10 o’clock with an oblique trocar at a distance of 8MM to the limbus with scleral entry and drainage. Afterwards, the retina and choroid normalized within 2 weeks, but the IOP was hypotonic with values in the range of 4-7 mmhg in monthly follow-up.

**Conclusions**

Suprachoroidal (Expulsive) hemorrhage is a devastating and dramatic process for the surgeon and the patient. When the clues of this devastating complication are analyzed based on this case and other experiences in the literature; it should be kept in mind that the risk of suprachoroidal bleeding may develop in the following situations and the retinal reflex should be controlled during surgery as a precaution: 1- In cases with previous retinal surgery including silicone injection and removal procedures; 2- In cases with impaired posterior capsule integrity; 3- In cases with intraocular lens dislocation and aphakia; 4- In elderly patients receiving hypertensive and anticoagulant therapy; 5- In cases with prolonged combined surgical procedures who were under local anesthesia (Retro-bulbar). Performing the procedure under general anesthesia in stressful patients who are straining, coughing; paying attention to intraoperative hypotonia; avoiding rough, high-moment pushing-pulling actions in contact with the eye are also important issues that can reduce the likelihood of this insidious complication.

**Financial Disclosure**

NONE
**Purpose**
To share surgical tips for scleral-fixation of intraocular lens implant using a sutureless trocar-based technique.

**Setting/Venue**
Applies to any patient who needs an intraocular lens (IOL), but does not have sufficient capsular support.

**Methods**
Narrated video.

**Results**
Previous techniques for scleral fixation of an intraocular lens (IOL) could be cumbersome and affected by suture erosion or IOL dislocation. More recently, Dr. Shin Yamane described a sutureless approach where the IOL is secured within the scleral walls by flanging the haptic tips. This video shows step-by-step one effective and efficient modification of his sutureless scleral-fixation technique where the haptics are externalized through trocar cannulae rather than needles.

**Conclusions**
Sutureless scleral-fixation of intraocular lenses can be perceived as technically challenging, but this modified trocar-based approach is an efficient option for vitreoretinal surgeons.

**Financial Disclosure**
Alcon, Alimera Sciences, Allergan/AbbVie, Novartis, Regeneron, REGENXBIO, DORC, Genentech (consultant for all)
**Title**
Suprachoroidal haemorrhage during pars plana vitrectomy with intraocular foreign body extraction

**Purpose**
To report an unusual occurrence of an intraoperative acute suprachoroidal haemorrhage during a small-gauge pars plana vitrectomy (PPV) with intraocular foreign body (IOFB) extraction.

**Setting/Venue**
A 32 year old male with ocular trauma was programmed for an IOFB extraction. We were forced to stop the surgery because of an airway obstruction during the general anaesthesia without time to close the sclerotomies, resulting in a suprachoroidal haemorrhage.

**Methods**
We review the case of a male with IOFB scheduled for PPV with foreign body removal. General anaesthesia was induced with laryngeal mask. Initially the surgery proceeded without complications. Firstly, we performed a pars plana lensectomy. We proceeded with 23-gauge PPV, inducing a posterior vitreous detachment and removing the IOFB successfully through an enlarged sclerotomy. We were applying endolaser under air when suddenly we were forced to stop the surgery without time to close the sclerotomies. The anaesthesiologist indicated that there was a severe problem with the airway and the patient had to be awakened from the anaesthesia. The extubation of the patient caused a severe Valsalva phenomenon causing a 360 degrees suprachoroidal haemorrhage. This situation was managed by placing the infusion line in the anterior chamber, introducing perfluorocarbon liquid in vitreous cavity with the purpose of flattening the choroidal detachment, applying peripheral photocoagulation in order to cover any retinal tear, and silicone oil tamponade through the anterior chamber.

**Results**
After two weeks of follow-up, checking the intraocular pressure and ultrasound control of posterior pole, we scheduled a new intervention. The patient had a complete hyphema so we had to wash it out. We extracted silicone oil and checked the state of the fundus under local anaesthesia. We observed that the retina was attached and the suprachoroidal haemorrhage had been reabsorbed spontaneously. At present, the visual acuity of the patient is 0.1 and he is waiting for a secondary intraocular lens implant in sulcus.

**Conclusions**
Suprachoroidal haemorrhage induced by Valsalva phenomenon during PPV under general anaesthesia may cause dramatic sight-threatening visual damage. Small gauge vitrectomy with valved cannulas may allow better control of the intraocular pressure in a closed system although it is not always possible under certain circumstances as in this case with IOFB extraction. In our case, both severe hypotony and increased central venous pressure generated by the Valsalva phenomenon, seem to be responsible for the rupture of the vessels and the suprachoroidal haemorrhage. We suspect that this rupture could have been caused either by a sudden increase in the transmural pressure gradient or by a choroidal effusion that stretched and tore these choroidal vessels. Local anaesthesia could be more appropriate in these cases in order to avoid a suprachoroidal haemorrhage.

**Financial Disclosure**
NONE
**Title**

Toy Story

**Presenter**

Rosa Pinheiro

**Country**

Portugal

**Purpose**

To describe the outcomes of traumatic endophthalmitis in a child due to metallic intraocular foreign body.

**Setting/Venue**

Department of Ophthalmology at the University Hospital of Coimbra.

**Methods**

A 6-year-old boy came to the emergency department with a painful red eye after playing with a hoe dag on the previous day. Visual acuity (VA) was 20/20 in the right eye and hand motions in the left eye (LE). On slit lamp evaluation of the LE, there was corneal haze, a small full-thickness corneal wound Seidel-negative, cell and flare 3+ and pupillary fibrinous membrane. Slit lamp examination of the right eye was unremarkable. A CT scan of the orbits confirmed the suspicion of an intraocular metallic foreign body and the parents agreed to surgery.

**Results**

The child was submitted to immediate vitreoretinal surgery. Inflammatory membranes were removed from the anterior chamber and the corneal wound was sutured. A 23-gauge pars plana vitrectomy was performed along with posterior vitreous detachment; focal retinal necrosis, frosted-branch angiitis and macular hypopyon were noted at this point. Then, a lensectomy was performed, with caution not to damage the anterior capsule. The foreign body was removed via pars plana using a bimanual technique with an internal electromagnet and membrane forceps, and 360º endolaser was applied. An inferior iridectomy was performed. Finally, after fluid-air exchange, the vitreous cavity was filled with silicone oil. Intravenous and intravitreal antibiotics were administered. A few weeks postoperatively, the VA on the LE remained hand motions and the anterior chamber was quiet. Four months later, the child underwent reoperation. There was complete anterior capsular fibrosis, and capsulotomy was achieved with retinal scissors. Silicone oil was removed, and retina status was assessed. Then, a 3-piece lens was inserted followed by optic capture. Two months later, VA of the LE was 20/200 and the child keeps following amblyopia treatment.

**Conclusions**

This video shows the management of endophthalmitis due to a metallic intraocular foreign body in a 6-year-old child. Traumatic endophthalmitis is usually aggressive in nature and can jeopardize sight and globe integrity. An immediate surgical approach was crucial to prevent catastrophic consequences. Functional results in pediatric age are also dependent on postsurgical amblyopia treatment.

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**Financial Disclosure**

No financial interests to disclose
Purpose
Recurrent retinal detachment is a nightmare that every Vitreo-Retinal surgeon has to face. How to overcome these challenging cases? In this collection of cases successfully managed surgically we attempt to highlight the role of selective relaxing retinectomy

Setting/Venue
Tertiary eye care centre, Kolkata, India

Methods
Six cases of recurrent retinal detachment previously operated with silicone oil were taken up for resurgery. First membrane peeling (MP) was done under silicone oil or after removing silicone oil. After MP, PFCL used to stabilize central retina. An area of unhealthy retina then identified and relaxing retinectomy done to remove contracted unhealthy retina. Then fluid air exchange done to settle the retina in all cases. Then endolaser done and silicone oil reinjected.

Results
All six cases was then kept under follow up for 4 months. In all cases retina remained attached still last follow up.

Conclusions
We would like to ascribe the successful handling of such complicated surgical scenarios to our approach of selective relaxing retinectomy. As opposed to conventional approaches of 360 degree peripheral retinectomy or inferior peripheral retinectomy or putting 360 degree band buckle, this approach preserves the maximal amount of retinal tissue without compromising the surgical outcome thus making life easier for both the surgeon and the patient.

Financial Disclosure
Not Applicable
Title

Minimally invasive procedure (MIP) for Optic disc pit maculopathy - Vitrectomy with scleral plug without internal limiting membrane (ILM) peeling, laser and tamponade for optic disc pit maculopathy and post-surgical pattern of resolution

Purpose

Many surgical techniques have been introduced for management of Optic disc pit maculopathy but they all have varying success rates. They range from macular buckling, pars plana vitrectomy with or without ILM peeling to a more recent introduction of pit “plug” using internal limiting membrane or scleral tissue. Various reports are present which discuss the necessity of laser or internal tamponade but have been limited to surgeons' discretion with no hard and fast rule or clear cut guidelines. With reference to the existing literature, where many of the above-mentioned techniques have been performed in various combinations, we performed only PPV with PVD induction and scleral tissue plug for treatment of ODP-M without ILM peeling, laser or use tamponating agents in our surgeries. We here report the outcomes and propose a pattern of resolution in ODP-M with our minimally invasive procedure.

Methods

All the surgeries were performed under peribulbar anesthesia using 23-gauge vitrectomy systems (Associate 6000, Dutch Ophthalmic Research Centre (DORC), Netherlands) (Supplemental Video 1). 3 ports were opened. The infusion was placed, and continuous irrigation was started with bottle height of approximately 50 cm from the patient's head level. Pars plana vitrectomy (PPV) was initiated from the core at 4500 cuts per min (cpm), peristaltic driven aspiration of 45 ml and vacuum of 200 mmHg. Vitreous staining was done during triamcinolone acetonide to identify the posterior hyaloid. Posterior hyaloid removal was done using venturi at 250 mmHg vacuum. Peripheral vitrectomy and shaving was done using 6000 (cpm) with peristaltic driven aspiration of 25 ml/min and vacuum of 150 mmHg. A 3 mm by 3 mm peritomy was done at approximately 11 o clock 2-3 mm from the limbus and the underlying sclera was cauterized using rapid movement of the cautery tip with light diathermy (30% power). A 1.6 by 2.2 mm of homologous scleral tissue was lamellarily dissected and further trimmed to approximately 1 mm by 2 mm size. The tissue was grasped at one end by retinal forceps (Eckardt’s Endgripping 23G retinal forceps, DORC) and introduced into the vitreous cavity via the port usually designated for the cutter. The tissue was placed over the optic disc area. The scleral tissue was grasped just behind the leading edge of the tissue plug for treatment of ODP-M without ILM peeling, laser or use tamponating agents can produce good results. ILM peeling and tamponade may not be required to be performed routinely and can be reserved for complicated cases. The pattern of resolution was found to be in order of disappearance of subretinal fluid, followed by resolution of the retinoschitic lesions and then macular edema.

Results

The study included 7 eyes of 7 patients. Four were males and 3 were females. The mean age was 27.43 ± 11.38 years (range, 14–54 years). None of the patients had received any prior treatment. All of the patients had complete resolution of the optic pit maculopathy following surgery. The mean duration for complete resolution was 18.3 weeks (SD 4.6). The mean central macular thickness at the time of enrollment was 815 microns (112 SD). At the end of the follow-up, the mean CMT was found to be 298 (92 SD) microns. The mean visual acuity of the operated eyes at the time of presentation and the end of the follow-up was found to be 0.58 (0.12) log MAR and 0.34 log MAR (0.12 SD) respectively. The overall resolution pattern is elicited in figure. Resolution of the subretinal fluid was found to be first clinical feature following the surgery. The resolution started from the temporal border of the optic nerve head. The mean duration at which the resolution completed was 4.7 weeks (3.2). It was found to start as early as 3.1 weeks and resolved as late as 7.9 weeks. The mean CMT was found to be 517 microns (SD 67). The mean visual acuity at the time of complete resolution of the subretinal fluid was 0.49 log MAR. The resolution of the subretinal fluid followed by disappearance of the retinoschitic lesions which was found to completely resolve at the mean duration of 9.2 weeks (5.8 SD). The earliest resolution of RL occurred at 6.7 weeks but this process was found to occur up to 14.5 weeks after surgery. The mean visual acuity of the operated eyes at the time of presentation and the end of the follow-up was found to be 0.58 (0.12) log MAR and 0.34 log MAR (0.12 SD) respectively. The overall resolution pattern is elicited in figure. Resolution of the subretinal fluid was found to be first clinical feature following the surgery. The resolution started from the temporal border of the optic nerve head. The mean duration at which the resolution completed was 4.7 weeks (3.2). It was found to start as early as 3.1 weeks and resolved as late as 7.9 weeks. The mean CMT was found to be 517 microns (SD 67). The mean visual acuity at the time of complete resolution of the subretinal fluid was 0.49 log MAR. The resolution of the subretinal fluid followed by disappearance of the retinoschitic lesions which was found to completely resolve at the mean duration of 9.2 weeks (5.8 SD). The earliest resolution of RL occurred at 6.7 weeks but this process was found to occur up to 14.5 weeks after surgery.

Conclusions

ODP-M can cause profound visual loss which can become permanent if the maculopathy becomes persistent with subretinal fluid and chronic macular detachment. Only PPV with PVD induction and scleral tissue plug for treatment of ODP-M without ILM peeling, laser or use tamponating agents can produce good results. ILM peeling and tamponade may not be required to be performed routinely and can be reserved for complicated cases. The pattern of resolution was found to be in order of disappearance of sub retinal fluid, followed by resolution of the retinoschitic lesions and then macular edema. Although the pattern was found to be congruent, the duration of resolution of each stage can vary. Hence, it is advisable not to rush for an immediate surgery with fear of surgical failure. Observation for improvements can be pursued.

Financial Disclosure

None
Title
Myopic peripapillary sink hole, vitreous hemorrhage, total retinal detachment, in-the-bag intraocular lens subluxation and massive subretinal perfluorocarbon. Is there a better offer?

Purpose
To show new vitreoretinal techniques for the drainage of the subretinal perfluorocarbon migration and for the treatment of myopic peripapillary sink hole in a retinal detachment case associated to in-the-bag intraocular lens (IOL) subluxation.

Setting/Venue
Setting: Ophthalmology Service. La Mancha-Centro Hospital, Alcázar de San Juan, CR, Spain

Methods
During hemovitreous and retinal detachment surgery, there was a massive migration of perfluorocarbon liquid to the subretinal space. To avoid an enlargement of the posterior pole hole or a large retinotomy, a transcleral, equatorial sclerotomy was performed, through it, the perfluorocarbon liquid was extracted subretinally. By an air-fluid exchange, draining the subretinal liquid through the posterior hole, the retina was flattened. The posterior pole hole was covered with an autologous Tenon’s capsule graft. The in-the-bag IOL subluxation was repositioned and refixated using a cow hitch stitch technique.

Results
The posterior retinal hole was closed with an autologous Tenon’s capsule graft. A myopic peripapillary sink hole was diagnosed in the immediate postoperative period. The retinal detachment was successfully treated with gas tamponade. Correct stability and centering of the in-the-bag IOL was achieved.

Conclusions
The cow hitch stitch technique is a feasible choice for treating the in-the-bag IOL in a complicated vitreoretinal surgery. A subretinal drainage of the perfluorocarbon liquid, using a equatorial transcleral sclerotomy, could be considered a good approach for the management of this intraoperative complication. The Tenon’s capsule graft could be a new option to treat a peripapillary retinal hole associated to a myopic sink hole.

Financial Disclosure
The authors have no proprietary or commercial interest in any material.