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VBS Fellows' Foray 2026: Through the Looking Glass—Real-World Vitreoretinal Surgical Cases

Dr. Edward Wood:
All right, hello everybody. Thank you so much for coming, and welcome to VBS Fellows Foray! Here we go. All right, so we're very excited for the program this year. This is going to be a fantastic program. This year, through the looking glass, real-world vitreoretinal surgical cases with VBS and Evolve. Really excited.

Here is the accreditation statement. There are 1.5 CME credits available to you.

And this is the planning committee. Yewlin, Camila, and myself, we're grateful and honored to be here with you all tonight. We have our esteemed panelists. We have Dr. Antonio Capone at Associated Retinal Consultants in Royal Oak, Michigan. We have Kat Talcott at Cole Eye Institute in Cleveland Clinic, and we have Nassim Abreu at Hospital Elias Santana in the Dominican Republic. Thank you all so much for coming tonight and being our wonderful panelists for this evening.

So here we are. We are really excited for this. This is an integral part of the VBS meeting. It began in 2012, and it continues to grow. We had over 70 submissions by vitreoretinal fellows throughout the world. And here are some of the regions represented here. So really proud of how diverse and international this is.

The videos, when submitted by these fellows, they're reviewed in a masked, unbiased manner by VBS members in two tiers. The top 20 are selected, and then those 20 are reviewed by a separate set of VBS members to select the top 8. So it's pretty rigorous, and we try to make it unbiased. The top 8 ranked videos were selected to present tonight, and all the fellows are here, seated down here. You're going to meet them all tonight, and they're going to present their video for about 5 minutes, and then there will be about 5 minutes of discussion.

So thank you to all these members for reviewing all of these videos. There's a lot of videos to review and put comments on, and it takes a lot of time. So thank you all for volunteering your time to help curate this evening.

The geographical distribution tonight, the top 20, there were 13 US videos and 7 international. And for the top 8, there's 5 US and 3 international. And just want to shout out to the international crowd for making it this year. I mean, this year was rough for international travel, and I can't imagine some of the thoughts that you had to consider to come here. So thank you so much. We're grateful you're here.

Congrats to the top 20. Eight of these 20 are here tonight that you'll all meet, but here's the top 20, and there were some who wanted to attend but couldn't due to some travel restrictions. So here's the top 8. Very excited to meet all you all soon. Are you ready? All right, let's begin.

Dr. Camila Ventura:
All right. So let's introduce our first speaker, our first presenter. Her name is Caroline Awh. Welcome, Caroline.

Dr. Caroline Awh:
All right, thank you so much. I'm so happy to be here. So I'm going to be presenting a case called Down the VHL Macular Hole. And this

is a case that I did with my attending, Nemo Patel, who is on his way in tonight.

So this is a 17-year-old male. He has a past medical history of von Hippel-Lindau, and he presented to us with 2 weeks of vision loss in the right eye. His vision was 20/200.

So you can see here there's a temporal large hemangioblastoma with large feeder vessels and a superior TRD with another tumor superiorly and a mac hole.

So let's go into the hole together and see what we did next. All right, so we put on a scleral buckle, and then we're cutting the superior fibrous sheet, as well as relieving the AP adhesions for 360 degrees. There's a large superior tractional detachment with some folds, and you can see we're trimming the traction here using some blunt dissection with the vitrector, and then using kind of a back-cutting segmentation technique to help relieve those tractions. Then we're adding diathermy to the feeder vessels. And here I'm using some MaxGrip forceps to try and peel some membranes over the tumor, but it's causing some bleeding. So what we do is we go with the opposite hand and then kind of relieve it more gently from posterior to anterior. We're also peeling some posterior membranes, and then there's this large plaque that we're also trying to get rid of here.

So very satisfyingly came off in one big sheet, so we ate that. And then we're doing FAx through a superior break, adding laser to that break, and then we're also adding laser to the feeder vessels and lightly over both tumors, and then we do oil. So we made it out, and then I just had my fingers crossed, hoping that he would do okay post-op.

And here's his photo at post-op month 4. He pinholes 20/50, and the mac hole is closed.

So VHL patients with combined TRD/RRD frequently develop severe PVR, and this leads to complex surgery and poor visual outcomes. Some surgical techniques to manage tumors and feeder vessels include cryotherapy, diathermy, endolaser, suture ligation, and endoresection. Our patient underwent additional laser to the tumor and the feeder vessels at post-op month 6, and he remains attached under oil at post-op year 1. Thank you so much.

Dr. Camila Ventura:
Congratulations, Caroline. Your video, the addition is really fantastic. Let's start with ladies first. So, Kat, how do you like addressing VHL, like hamartomas in general?

Dr. Kat Talcott:
Yeah, I think you guys did a great job fixing this more complex one, but hopefully you're catching these earlier. So you know, if the tumors are smaller, you can treat them with laser. You can consider cryo if it's a little bit bigger, but obviously when it gets to the point where there's causing a tractional detachment and a macular hole, then you kind of need to address it surgically.

I really liked how you use the cutter to really find good planes where you could segment and sort of visualizing before you cut. I think that was really helpful in this case.

Dr. Camila Ventura:
What about injecting anti-VEGF? Would you think about it, or maybe even sub-tenon triamcinolone?

Dr. Kat Talcott:
Yeah, I think those things can both be helpful, especially if there's edema as well. That can be helpful for sure to be able to regress as well before it gets to this point. You know, obviously it'd be interesting to know when this patient last was seen before they developed like detachment. But if they were getting regular screening or not.

Dr. Caroline Awh:
Yeah, no, he was not.

Dr. Kat Talcott:
Yeah, it's hard.

Dr. Edward Wood:
Dr. Capone, you've done a lot of these, and I had a question. You know, sometimes when you're wanting perhaps to cryo something additionally down the road, you might consider the advantages or disadvantages of having a buckle there. How would you think about a buckle in this case, and what you might do to the tumor later versus now?

Dr. Antonio Capone:
Yeah, that's a great question. So I like the underappreciated that many times is- is how much transvitreal traction you can see in these VHL cases. And this case really exemplifies that, right? So in removing all of the traction sometimes is an impossibility.

So there's a number of things I like about how this was done. I like the idea of the buckle for the support it is going to mitigate your ability to apply cryotherapy later, but there are other ways to treat the lesion.

I also like the back-cutting and that you didn't really need to peel the ILM because you had the hyaloid attached to the edges of the hole. So just taking the hyaloid up really kind of addressed that. But it's a long answer to your simple question. I think I like the buckle here. It's insurance with regard to the incomplete removal of traction, which is kind of part and parcel of these cases.

Dr. Yewlin Chee:
Should we go to some questions for the audience? Vasel?

Audience Member:
Yeah. So fantastic job, really well done on that case. I had a couple of questions. So it sounds like you weren't able to completely remove the traction over the lesion, which can be hard, and you saw some bleeding there. Did you have any conversations with the patient or thought process about using belzutifan pre-operatively to decrease the risk of hemorrhage?

Dr. Caroline Awh:
No, that's a great point. Belzutifan is an amazing adjuvant tool now we have to shrink the tumors before surgery or even as a primary treatment. For this patient, his tumors were only in his eyes, and so we had discussion with him and his family, but because there's some hematologic and reproductive risks, so they decided against it.

Audience Member:
Fair. That's a reasonable conversation.

Audience Member:
Million-dollar question, what does the panel think about oil removal now or in the future?

Dr. Nassim Abreu:
About what?

Dr. Camila Ventura:
Oil removal.

Dr. Nassim Abreu:
That's a trick question, Jay. I would say that we actually don't know if we are going to have a recurrence of the RD after taking the oil out. Edward's addressing the buckle, I think it's of great value for this type of case, especially when you want to remove the oil at some point. And with the buckle, I think eventually, if it's going to detach, it will, and especially in this case where there was residual traction at the end of the case. So adding to the removal of the traction, I would say that you could have addressed that residual traction in a bimanual manner and maybe release a bit extra of that traction.

Dr. Camila Ventura:
Flavio?

Audience Member:
Yeah, I have a question. Was it a solitary or there was multiple?

Dr. Caroline Awh:
There were two tumors, yep.

Audience Member:
Because if you catch early enough and with medications, if you have only one, excision is a hard surgery, but it's doable. And the feeder vessel treatment, they develop collateral, even if you ligate them intraoperatively. And that's why you probably had to do like full tumor excision combined with a medical treatment, nowadays perhaps is it something else.

Dr. Caroline Awh:
Yes, definitely. Definitely an option.

Dr. Antonio Capone:
Can I speak to that? So for excision, generally, in these cases, excision is going to most likely end up requiring a retinotomy around that as well. So there's always the kind of give and take of getting the lesion out and then having some more RPE exposure, if you will, and the PVR. Please.

Audience Member:

We can actually dissect the tumor from the retina instead of doing retinectomy. We're presenting at SRS this year a technique to avoid the PVR.

Dr. Antonio Capone:
No, I'm aware that it's possible, but it's not universally possible, so you have to sort of embrace the chance that you're going to end up needing to do a retinotomy there.

Audience Member:
Right. And that's why I asked if it was solitary, because it- it makes a difference.

Dr. Antonio Capone:
Yep. Yep. And so where I'm going though is I tend to save that for the lesions where there's contraction limited to the area of the lesion itself. In other words, if it's a relatively traction-free lesion, then inclined to leave it. If you want to relieve the traction totally, the only way to do that is to remove the lesion, then to do that.

The one other comment that I would make though is that the fold superiorly, sometimes a nice way to address that and make it more likely to be able to take out the buckle is a radial element underneath the fold, is often a nice touch.

Dr. Camila Ventura:
Last comment.

Audience Member:
Very nicely managed case. I had a question for the panel. Continuing the discussion on PVR, would you consider post-operative intravitreal methotrexate injections to reduce that, and especially if you're going ahead with oil removal in the future, prior to oil removal?

Dr. Nassim Abreu:
I think it's a great question. We actually don't know if it works or not in these cases. There's not a lot of data on methotrexate with VHL, but I do think that from what we know now with the RDs, that I think that eventually it would be of great addition after removal of the silicone oil.

Audience Member:
I don't think that was PVR, I think it was just traction. So in that situation, I'm not sure that methotrexate would necessarily help much.

Dr. Nassim Abreu:
So I will be more preoccupied if we're doing an endoresection with a retinectomy. I would definitely put methotrexate starting from the first surgery.

Dr. Antonio Capone:
Yeah, we're still in the early days of methotrexate use, so I agree. I think so currently, I agree, Vasel. Right now, it's not a PVR case, right? It's a transvitreal traction case. And like for where we are today, I'm not necessarily sure that I would use it at this point because it's not a PVR case yet. But again, we're evolving in terms of how we are using methotrexate, and we have some work coming out of h Cincinnati Eye Institute by Chris Riemann showing markedly reduced PVR rates. So it may be that we, in the 5 years from now, will use methotrexate more routinely in detachment surgery. But for today, April 9th 2026, probably not for this particular case.

Dr. Yewlin Chee:
This has been a great discussion. I think we need to move on to our next case in the interest of time. Thank you.

Great, and we have Viet Chao from ARC.

Dr. Viet Chau:
All right. So my talk is titled, Serously, Another RD. So thank you for the opportunity to share this case. I wanted to be up front. This is not a story about a perfect surgical plan executed; this is a story about being wrong and having to think clearly under pressure when you realize it intraoperatively.

So I kind of talk about the case here.

[VIDEO BEGINS] We present a 65-year-old pseudophakic male who came to the emergency room with 2 days of flashes and blurred vision in the left eye. Visual acuity was 20/40. Exam showed an inferior partially mac-off retinal detachment with a horseshoe tear at 6. Given the inferior location, we proceeded with a combined scleral buckle and pars plana vitrectomy.

After placing a buckle and performing a core vitrectomy and a peripheral shave, a thorough depressed exam was performed, but we were surprised to find that there was no retinal break, with only chorioretinal scarring at the site of where a horseshoe tear was thought

to be seen previously.

The peripheral underlying choroid appeared corrugated, and the subretinal fluid shifted evenly across the posterior pole, suggesting a serous detachment rather than a rhegmatogenous one. To confirm and rule out a retinal break, we injected PFO, but the retinal fluid remained trapped 360 over the buckle, forming a donut configuration, confirming the serous nature.

Given no visible break, we elected to treat the serous detachment by performing an external scleral cutdown for drainage rather than a retinotomy. The sclera was abnormally thickened, suggestive of an underlying inflammatory process, and drainage yielded a large amount of serous fluid, after which the retina flattened completely.

We applied 360 endolaser, performed fluid-air exchange, and exchanged for SF6 gas, followed by scleral and conjunctival closure.

Although surgical intervention is generally not recommended for non-serous retinal detachments, there is little to no literature guiding management of incidentally discovered cases. This report describes the unplanned surgical management of a serous retinal detachment that initially mimicked a rhegmatogenous detachment, emphasizing the role of perfluorocarbon as a diagnostic tool to exclude retinal breaks and the use of external cutdown and drainage as a safe method for subretinal fluid relief when no break is identified.

At 1-year follow-up, the patient's vision had improved with no recurrence of detachment. [VIDEO ENDS]

All right, so what really struck me when reviewing this case was how many layers of reasonable decision-making led us to the OR with an incorrect diagnosis. The imaging was limited in the emergency setting, the exam was challenging, and the colleague who boarded this patient for us was someone I deeply respect, and I would have made the same call.

So I think the lesson here isn't to examine the patient better pre-operatively; it's that even with excellent clinical skills and clinicians working within real-world constraints, this will occasionally happen to some of us.

So in this case, PFO gave us an answer when clinical assessment couldn't, and external drainage gave us a path forward that avoided compounding the problem with an iatrogenic break.

So when I reviewed the literature afterwards for guidance on incidentally discovered serous detachments found mid-surgery, I found nothing. There are no cases. There's no discussions. So perhaps the value of the submission isn't the technique itself; it's opening a conversation on what to do in these types of scenarios. I don't have the definitive answer, but I hope this case is a good starting point. So thank you. I know this is not the winning case, but I'm excited to discuss further and genuinely curious whether anyone has faced this type of scenario and what would you guys do.

Dr. Yewlin Chee:
Thank you so much, Viet. Yeah, I think that there's plenty of great discussion points. My question, though, throughout the panel is, once you're in the eye and have determined this indeed is a serous detachment, how far do you go? You know, You have a thick sclera, you have a buckle on the eye, would you continue and proceed as we did in this case, or would you change your management?

Dr. Kat Talcott:
Yeah, I think it's a great question, and I don't think there's, as you alluded to with the literature, there's not great answers. The hard thing is, it's like you've set up this patient to tell them that there's a detachment and we all, as retina specialists, want to fix things. So we all feel better when the retina is attached at the end. But you know, arguably, if it's a serous, you don't need to do that, you know.

And then I really liked how you did the conjunctival cutdown. You saw that the sclera is really thick. You could think about doing something like scleral windows for that case without intervening. But I like how, even if you decided to sort of drain the fluid, you thought, how can I minimize harm to this eye? And I think an external approach, if you want to get rid of the fluid, was helpful.

The other thing that I really liked how you showed this case is that someone documented before that there was a break. I remember when I was a resident seeing detachments, like, I just thought, like, I have to find the break. If not, Yewlin is going to think very poorly of me as my senior at Mass Eye and Ear, I got to find the break. And you almost want to believe that there's things there that might not be there. So I think it happens to all of us.

Dr. Camila Ventura:
I wonder if any of you would actually do a retinotomy and drain? Or even, I noticed that, did you collect the fluid? Did you send that to the lab?

Dr. Viet Chau:
We did not send it to the lab.

Dr. Camila Ventura:

That could be something else that I would think of. Any of you would actually address it like with a retinotomy? Or would actually prefer doing the same technique?

Audience Member:
Yeah, I have a comment. So a couple of things. Viet, really, really nice case, but things that would be interesting. You know, I understand we're retina specialists, but if that patient really had that thick sclera, is that patient a hyperope or not a hyperope, which would be interesting to know. Obviously, an axial length would be too much to ask for retina practice, so I don't know the patient, so I would ignore that. So let's go with the refraction.

And then you know, the patient has a PCIOL, so you're dealing with a pseudophakic detachment, which probably you have vitreous anteriorly, and many times those tiny little holes hide the vitreous up there. And one of the things you could do is put the perfluorocarbon, be very patient, then you could stain that vitreous, remove it, and then you will find that hole. So I'm not convinced this is a serous detachment.

Dr. Viet Chau:
Yeah. I mean, I totally agree. I am not 100% convinced either, and that's kind of why we approached what we did.

We have followed this patient for years before doing the surgery when they were phakic, and at that time, we do auto-refractions on our patients, and they're about a -1/-2, so not quite a hyperope. We know that.

And as far as you know there could potentially be an unseen break, and that's kind of why we did the 360 laser, just to kind of ensure, we kind of covered our bases. So maybe there was a break we didn't cover. We did everything we could to fix a potential rhegmatogenous retinal break.

Dr. Yewlin Chee:
Avni?

Audience Member:
Yeah, I think I would just echo what Nina said, that sometimes in these pseudophakic detachments, it could just be a small break, and the folds that you saw, I think they were more likely from the buckle rather than true choroidal folds that were there. And oftentimes, in these cases, when you put the perfluorocarbon down, the fluid will get pushed up anteriorly, and that's when I would make a small retinotomy on the buckle, drain out the fluid from there if I can't find the break, and then proceed with the case.

Dr. Viet Chau:
Yeah, definitely, we definitely considered making a retinotomy, but if this was an inflammatory process, if it was something that you know could cause kind of PVR-genic, we just didn't want to risk doing an iatrogenic break versus it's superior. It's probably less risky, but just given the potential risk of PVR, we tried to do external drainage.

Audience Member:
I think the other thing that argues towards potentially not being inflammatory is that the fluid didn't recur, right? And you put in short-acting gas, you followed this patient, and the fluid remained resolved. So I think there's something there that maybe it was just a small—

Dr. Viet Chau:
No, I totally agree. We acquired a lab workup while already under anesthesia, and we did a really slow taper of prednisone over several months, just because we're like, all right, if this is an inflammatory process then potentially it could rebound. Some of the initial OCT imaging, it did show a thicker choroid compared to what we saw 1 year later, so it did get better in terms of choroidal thickening as well, which is an interesting finding.

Audience Member:
I wanted to compliment you first of all for showing a case like this, because it's a really interesting discussion. And echoing what Nina and Avni said, I think a retinotomy is reasonable. One of the issues with the PFO test is, if it's a very, very small break and you have your band pulled up, there is always the possibility that that break is actually tamponaded to where it's not going to allow that fluid to drain, especially if there's vitreous still over the break, which Nina brought up. So it's not actually telling you diagnostically what's going on there. Now, you have two options. I don't think either is really that important here. You could have loosened the band and cut more vitreous to try to see it. You could have done what you did. I also think this was mac-off originally.

Dr. Viet Chau:
This was partially mac-off. They were 20/40, or that's what they drew at least, so.

Audience Member:

Mooney and other groups have shown this data, another option would have been, if you didn't want to make a retinotomy and you didn't want to externally drain, you could have just done a fluid-air exchange, lasered, put gas in, yeah, and then that should also work, and the fluid should pump if it's- either way, you didn't have to drain it either. And so if you're just thinking, if you're in the situation in the OR when you leave fellowship or you're in a situation where, like, well, I don't know if we have the things to do this external drainage right now, you could have maybe just done the FAx, and yeah, and that would have worked too.

Dr. Viet Chau:
Yeah, yep. I totally agree. We weren't sure if it was serous or rhegmatogenous. Maybe we did miss a break, so we kind of covered all our bases, but we totally could have just did a fluid-air exchange and see what happens. We have a buckle potentially on the break, but we did do the laser, the 360, just to see if we can cover our bases in terms of a missed anterior pseudophakic break as well.

Dr. Kat Talcott:
Yeah, I think that's a really good point by Jay. People always want to put in PFO to try and find the breaks here. I just don't find it that helpful. Even if there is a small break and then you see the Schlieren coming out, I'm like, I don't know where it's coming from. It's coming from somewhere, but it doesn't always help me find the break. I think it's easier if you're really looking for a tiny break to not have PFO and then just really carefully look at the superior portions of the detachment. Sometimes, like, if there's, like, been a localized RD, the retina will be a little stippled in that area. You can try and see if you can see that. But I've been disappointed. I just put in PFO, and I was like, I see the Schlieren, I still don't know where it's coming from.

Dr. Camila Ventura:
There's a quick question.

Audience Member:
Find the Schlieren. Like, you can't find it, just put some subretinal brilliant blue dye—BBG- subretinal BBG with a 41-gauge needle. So I find that useful. You can't see Schlieren because it's transparent, but if you put BBG dye with a 41-gauge needle, it comes out through the break, and you can find the break.

Audience Member:
Could this have been a nanophthalmos to begin with? The pseudophakia would have masked the hyperopia, and the sclera was really thick. And if we look at the OCT, there is no foveal depression, and the ERM is too flimsy to explain that, kind of like the loss of the foveal depression. So maybe an axial length, or, I mean, this would not be a routine case for an axial length, I agree, but then maybe we missed a nanophthalmos?

Dr. Viet Chau:
Yeah. I mean, we did have a refraction before. I guess we didn't get an axial length, but we did have a refraction pre-operatively while they were phakic, which they were about -1/-2, so I'm not sure. I guess we could also get an axial length just to kind of confirm.

Dr. Edward Wood:
All right, I think we're going to have to move on. I'm so sorry. We're a few minutes over. Excellent case. Amazing. Love the discussion. Yeah, you're selling yourself short. It could be a winning case, we don't know.

Dr. Kat Talcott:
A winning discussion.

Dr. Edward Wood:
We don't know yet.

Dr. Kat Talcott:
A winning discussion.

Dr. Edward Wood:
That's why we're here. All right, we're going to have our next amazing fellow present, Chris Chung from UIC, Illinois Eye and Ear Infirmary. Chris, take it away.

Dr. Chris Chung:
Thank you for having me. I forgot to come up with a snazzy title, so this is New Retinal Detachment Following Trauma, Vitreous Hemorrhage, and Vitrectomy/Lensectomy. Yeah, thank you. This is a case presentation of a 60-year-old gentleman, so he's coming to retina clinic for his post-op month 8 follow-up, just a routine post-op visit, although he had an open-globe repair that was originally done secondary to a box cutter injury. And then at month 3, he had non-clearing vitreous hemorrhage as well as a traumatic cataract, and so he underwent pars plana vitrectomy and lensectomy.

In our clinic, at month 8, he was pinhole to 20/500 in the left eye with a slightly soft pressure of 4. You can see his anterior exam with stromal scarring and neovascularization. And on our dilated fundus exam, we can see an inferior detachment with probably some early PVR as well.

So we're going to go ahead into the video, in which, due to the fact that he's got this pretty bad cornea, we'll start with removing the cornea and placing a temporary KPro, which was nicely done by our cornea colleagues. We put in some iris hooks here to kind of improve our visualization, and then going with an anterior infusion to mostly clear up this hemorrhage that was from the TKP, not really pre-existing.

Once we get a clear view of this inferior detachment, we move the infusion back to the posterior segment and put in our instrument cannulas.

He had already been vitrectomized, but of course that previous vitrectomy was very limited by the view. I imagine, I wasn't in the first surgery. But we remove the rest of the residual vitreous, and we can find some bands down by the inferonasal break. We make a peripheral iridotomy, and then we use perfluorocarbon to flatten the retina. And we can see really nicely the Schlieren coming out through a pretty large break. We already knew the break was there inferiorly, and so we get all the Schlieren coming out through that inferonasal break.

We're removing here the rest of the fibrotic capsule, as that's not going to help us in the future, and so we're kind of pulling out any capsule that's scarred down to the posterior iris. We see that the retina is really nicely flattened under the PFO, and so we'll laser around the break, and then we proceed to provide the patient with 360 barricade laser as well, just to be on the safe side. We perform a fluid-air exchange over the break and rinse out any residual PFO and then fill the eye with silicone oil.

So we can see here, the iris hooks come out, the TKP comes off, and the rest of the PK is completed, and then we close up the eye.

So this is him at month 1. He's nicely attached under oil, and then further follow-up 7 months after the RD repair, he gets the oil removed. He gets a second PK because, of course, the first one fails from having oil in an aphakic eye, and he gets a secondary lens. At post-op month 11, he's still really nicely attached. Unfortunately, his second PK has also failed. We have another 4 months of follow-up where he's still nicely attached, but his vision is limited by corneal edema. And that's it. Thank you.

Dr. Edward Wood:
Nice. Amazing case. I have just a general question for the panelists. Sometimes, in a case like this, there's so much you could do. There's just so many things one could consider. And one thing that could be additionally considered here would be a buckle as well. We keep talking about buckles, but you could consider doing a buckle here, but there's already so much you're going to do. How do you think about that when you're planning a case like this? Do you set up for it? Do you have it on standby? What's your thought process there?

Dr. Nassim Abreu:
So I think buckles are very efficient in trauma cases mainly. I think that in this case—you might correct me afterwards—but maybe because we're going to take the cornea out, they tried to not put a buckle in. I think that they could have put the buckle in without tightening it before taking the cornea out and having that additional support to the vitreous base, apart from the 360 laser. We do have very good results a year after without the buckle, but in general, trauma cases do have benefit from buckling.

Audience Member:
I think that was a great case. Thank you so much for sharing it. My question is, with TKP and oil, what's your, like, order of operations as you plan on putting oil and then switching to cornea, or do you just not care and you say the first graft is going to fail?

Dr. Chris Chung:
Yeah, I think, I mean, our job as retina specialists is to keep the retina attached. So, I mean, I just—

Audience Member:
So there's that thing called vision.

Dr. Chris Chung:
Yes, no, you're right. I mean, Dr. Chan and I literally just had another case last week where TKP, oil, PKP, I think, I mean, in order to see, I mean, we need the TKP. And then, of course, cornea has to put on the transplant. But do you mean during the surgery?

Audience Member:
Yeah, I mean, do you switch then under air? Do you switch when you put oil in already from TKP to the—

Dr. Chris Chung:
Oh, yeah. So we put the oil in first, and then what you can do is you can hook up the injector to the infusion. And so you're going to lose oil during the placement of the PK, but the cornea specialist can just push down on the pedal and just refill the eye as they need pressure. But we put in the oil before removing the TKP, and then you're going to lose some oil. You know, they're used to being open sky anyway, so I think, yeah.

Audience Member:
Does anybody on the panel do it under air?

Audience Member:
It was an awesome case. Thank you for sharing it. I had two quick comments. One was, and it's very hard to know what the view would have been like, but with the recent and the modern systems, I've been shocked by how small a window you can work through. And it was, in this case, the cornea looked opacified, but I wonder if a lot of it was just the stuff right behind it, the iris and the hemorrhage. So, like, it's great you have, first of all, you had an awesome corneal surgeon available. You had TKP available. And that's not always available in every setting.

So we've been in settings where it's been like, we can either wait 2 months to get this patient to surgery, at which point they're already going to be funneled, or we can try it and close if we can't see well enough. And I've been shocked by how many times, if you go in and you start cutting some of that tissue, the iris, the blood, everything that's plastered on either side, and then put viscoelastic on either side, you can see enough to get through that case, put a buckle on, get the retina flat, put oil in, and then push their PK off to another time where they may have better success.

Because the disadvantage here, which was alluded to, is each time you do this, you are increasing their chance that the graft will reject, and that's hard, because you're just trying to save the eye. And you guys did a great job doing that. But just thinking about that, I've realized you don't always have to go to the TK.

The second point would be is like, these TKs are reusable for the most part, at least where I work. This one didn't leak at all, which is amazing. I feel like most of the time when I'm using them and the cornea team are done, I end up having to throw more sutures because it's leaking during the case. And so I've always been a little wary of going to air in these eyes, because I'm concerned that if it's not completely airtight, I'm not going to have great stability. So this is one of the few cases I would think about PFO to oil, because you don't have to deal with that instability in case your TKP is leaking. And I feel like, having done a lot of these, and like 80-90% of the time the TKP is not holding even fluid. So maybe just be careful if you're in that situation, because if you go to air, sometimes the whole eye will just collapse because it's not actually holding the air in.

Dr. Yewlin Chee:
Does anyone on the panel leave capsule in the setting of trauma? I think this is a great example of how capsule can cause issues, and—

Dr. Kat Talcott:
Yeah. I really appreciate how careful you were to get all the capsule in this, like, anterior loop case. It makes you wonder how long that detachment was probably brewing there, just because the view was so poor the pressure was 4, you know.

Dr. Chris Chung:
Yeah, it was a month 8 follow-up. So their previous visit might have been, like, 2-3 months before that. Yeah.

Dr. Kat Talcott:
Yeah. But I think trying to your point of, like, trying to get any scaffold for further anterior loop, I think is hopefully what helped keep the retina attached afterwards. So it's really good to spend your time on that.

Dr. Nassim Abreu:
So removing capsule, I generally don't like pulling straight out the capsule from the eye. Because of the visualization probably it was better this way in this case, but I tend to pull a little bit and with the vitrector, try to eat the zonules, just so you don't pull on the ciliary body and maybe detach it.

Dr. Yewlin Chee:
At the time of the primary, yes, lensectomy, yeah, that makes sense.

Dr. Camila Ventura:
So we're calling on our next speaker and our next presenter, Joseph Giacalone.

Dr. Joseph Giacalone:

Nice to meet everyone. So today I'm going to be presenting about IOFB removal with a novel nylon suture snare technique developed by Dr. Iezzi, who's with us in the crowd today.

So this is a 35-year-old male who presented essentially after a bar fight, glass bottle to his left side of his face. Vision was pretty good, all things considered, IOP low, not surprising, all the normal things, subconjunctival heme. And then there's this video with the video indirect where we're able to directly visualize essentially where the glass was before going into the operating room, so just right there.

So let's move forward. So we'll give this 10 seconds to play here. There we go. So we did the normal things, right? We have to, like, close the globe. So we found the tear, not surprisingly, it was underneath one of the rectus muscles. We put in our cannulas. This is a 30-year-old, so not surprisingly, the hyaloid is still down. So we need to kind of lift up that vitreous to free up that piece of glass that's stuck under the hem there. So you'll see here, we are pretty successful now getting up that sheet of vitreous, and then this next maneuver, as we eat some of the heme, the glass, it's just going to kind of fall.

Okay, so here we have a 23-gauge straight cannula and 5-0 nylon, and we're feeding it into the cannula here, and in the back we're kind of pulling on it through. We put a cotton tip in the back that you're not going to see and adjust it to the size of the loop. You want to keep it a little bit large so it fits around. We're feeding it in with the forceps here. You could use a light pipette as well. And the important part here is it's a closed system, so we haven't made any large scleral wound. So we're essentially getting it over the glass IOFB here. There's an assistant pulling on the back of the nylon here. You're advancing slightly forward as you're pulling on the nylon, because you don't want that glass piece to just fall out.

So now really, it's cinched down. It's not going anywhere. You can literally customize the wound now to the size of the glass, so you don't have to have a massive wound at all. We could have done diathermy and stuff like that here to make it a little bit prettier, not a big deal. We get the glass out, great success. We're going to suture up the wound here.

So now it's watertight again. We're going to go back in. We're going to laser around that area, essentially where the glass interacted with the retina.

And then we're just going to suture up.

So unfortunately, we only really have day 1 and week 2 for this patient, because of there's a lot of social reasons. Unfortunately, he was lost to follow-up. Vision came back really well. He wasn't detached, at least at week 2.

But the important point here is this is kind of a novel technique of IOFB removal with things that are present in the OR that will always be there any time of night and that you can easily find. And it's in a closed system, so you don't have, like, crazy fluid dynamics happening. So it's a pretty cool technique that I advocate for people trying.

Dr. Camila Ventura:
Yeah, I agree. Great case. Great video. Tony, I would like to know from you, like, what your experience, what other opportunities, other techniques we could address to remove intraocular foreign body?

Dr. Antonio Capone:
Gosh, so you could try to wrestle with it with forceps. There are a variety of different foreign body forceps that you can use. But in candor, I love this making it up on the table MacGyver technique. I think it was very elegant, very creative, very well done.

Dr. Camila Ventura:
Nassim, do you want to add?

Dr. Nassim Abreu:
Especially with glass foreign bodies, sometimes it's very difficult to grasp on the foreign body. So I think that creating this snare, it's a great way to embrace the whole foreign body and take it out. So I think it was greatly managed.

Dr. Kat Talcott:
I just kept being worried that it was going to, like, drop, you know.

Dr. Joseph Giacalone:
Yeah, yeah. So the important part is, like-

Dr. Nassim Abreu:
That's another conversation.

Dr. Kat Talcott:
Like, everyone needs to get ready and be ready to go. If I'm doing it with a fellow, we're always planning. I was like, so you're going to

do this, I'm going to do this.

Dr. Joseph Giacalone:
Yeah. Well, - there's a lot of coaching in between, and it's a two-person system with the pulling and the person that's holding, it's advancing, and, but once it cinches, it's cinched, and it's kind of like an irreversible binding.

Dr. Kat Talcott:
Yeah, I think there's a lot of great new forceps out for foreign body removal, like Bausch and Lomb has, like, a bunch of disposable ones that are really nice. Whenever I'm doing, like, an IOFB case with one of our fellows, just like, just get all the forceps, find all the things, bring them into the room, and then kind of see what they do. But the glass ones are hard because they have some volume to them, like in the middle pieces.

Dr. Antonio Capone:
So for that reason, I think a basket forceps is probably the best one, because the other challenge of trying to use a forcep- a grasping forcep is these can fracture, and then you've got multiple foreign bodies inside the eye.

Camila Ventura:
Virgilio.

Audience Member:
I think it's a great video and great presentation, but I think depending on the size of the, in this case, glass piece, you can use perfectly, if it's not too large, you can use the flex loop, and those do the same thing. And, for me, if it's larger, you can use this technique. I think it's very good. Or a basket that I think Daniel presented 1 or 2 years in this meeting with these baskets of the urologist, or I don't know, the mouth or something like that. I have never tried, but I think it's a good idea. And when you have a glass inside the eye, it's terrible, because you need to have it once and get it out. If not, they fall, and they fall. I had one case, and they fall to the macula, and the macula is perfect, and you see the glass going to the macula, bleeding, and it's a terrible thing.

Dr. Yewlin Chee:
Yoshi?

Audience Member:
I just want to say how great this case was, and I think glass definitely very hard. I think different iterations of this kind of technique have been published and reported, but this was the most simple way of doing it, and I think the best, coolest techniques are the most simple. And every VBS meeting, I go home with a list of things that I want to try out, and this is definitely one of them. So definitely, thanks to you and Ray for developing this.

Dr. Edward Wood:
Thanks, Dr. Anzi.

Audience Member:
I think it's a really great technique. I also want to try it. I'm wondering why did you didn't protect the macula with the heavy liquid or viscoelastic, at least in case of a drop off? And also, I think it really depends on the form and the shape of the foreign body, because if it's too round, maybe it won't work, but it's definitely a technique I would like to try.

Dr. Joseph Giacalone:
Thank you. Yeah, I mean, you could use those things to protect, for sure. I think the more you use this technique, so when I started my fellowship, we had, like, five IOFBs in the first, like, 2 months. So fortunately, I've seen a bunch of this being used, and it really works really well once you've used it, and there's very low incidence of dropping. You can tilt the eye, you can protect with viscoelastic. Those are all great options too.

Dr. Kat Talcott:
Yeah. I'm curious to the other panelists, do you guys put in PFO for IOFB cases? I kind of don't, because I find the foreign bodies just fall through the PFO.

Dr. Nassim Abreu:
Yeah. So there is a couple of papers that talk about this, and actually, viscoelastic it's more efficient than PFO, whereas PFO will eventually accelerate the velocity and the impact on the retina. So if it's as large as this was, it's probably not going to protect anything, and it needs to be a certain shape and very small for it to, like, slide on the side. I think definitely viscoelastic it's a better option here.

Dr. Camila Ventura:

Renetti?

Audience Member:
I've had success with these glass foreign bodies using viscoelastic, not to protect the macula, but a cohesive one when it's like this, to turn it this way so that the forcep can grab it in the right orientation, bring it up, and enlarge the wound less as well.

Dr. Yewlin Chee:
Thank you so much. Sorry, Caroline. I think we need a quick comment.

Dr. Caroline Awh:
I just wanted to say that Joe had shown me this a couple months ago, and I tried it, and it was so easy and worked really well. So I definitely recommend you guys trying it.

Dr. Yewlin Chee:
Thank you so much.

Audience Member:
Thank you.

Dr. Edward Wood:
Thank you, everyone.

Dr. Yewlin Chee:
Okay, our next speaker is Tulio Loyola from Federal University of Sao Paulo.

Dr. Tulio Loyola:
Good evening, everyone. Thanks to the panel for having me here. My name is Tulio. I'm a second-year fellow from Brazil, Sao Paulo.

So I'm going to present tonight a case of a 41-year-old patient who had a bilateral retinal detachment associated with acute retinal necrosis. So I'm going to actually show a video containing the surgery of both eyes. So the first eye, it had a better prognosis, so we operated it earlier. But the second eye is a much more dramatic case, low prognosis. So it really made us wonder if it was worth it operating it, but because it's a young patient and has high chances of re-detachment in his first eye, the good eye, so we just went for it.

So without further delay. So the patient had tears associated to the area of necrosis, had already been treated with intravenous acyclovir for 14 days. So we performed a phaco and buckle surgery combined with pars plana vitrectomy. We can notice here some retinal shortening associated to the areas of necrosis, so we performed two relaxing retinectomies so that we can help the retina to settle down. After the fluid-air exchange, we performed some endolaser around the retinal breaks and also around the area of necrosis. We chose silicone oil as tamponade, and we had a really good outcome with 20/60 in this eye.

But what about the second eye? So we can see a pale retina. It's low mobility, but again, you have to believe it's possible, even in the hard cases. So we went for it as well. So phaco and buckle surgery combined with pars plana vitrectomy. So here it's an important step to make the removal of this posterior hyaloid that was really attached to the retina. We did this procedure at 360 degrees so that we can handle a little bit with this retinal stiffness. We also performed an ILM peeling because of the small macular hole we noted in the intra-op, fluid-air exchange followed by endolaser. We did a round of retinal breaks, but also in panretinal photocoagulation. We chose silicone oil as the tamponade, and we really surprised ourselves with a good surgical outcome of 20/400 of visual acuity. And that's it. You really have to be positive sometimes.

So in conclusion, early treatment is essential to limit the progression of the necrotic tissue, and even in challenging cases with poor prognosis, we really have to go for it, be positive, especially in young patients. And yeah, thank you so much for your attention.

Dr. Yewlin Chee:
Thank you so much, Tulio. I have questions for the panel? I think if someone were to present untreated, right, no antivirals yet, detached, how do you time your surgery? Do you go right in? Do you treat them for a bit and allow the infection to be calmed down a bit? How do address that?

Dr. Tulio Loyola:
Yeah, so this patient arrived to us right with the bilateral detachment, and he has already been treated elsewhere. So we really didn't understand how was the progression, when did the symptoms start, and how long did it take for the patient to go to the service and be treated and everything. But I think for sure, like the clinical treatment, it has to be as soon as possible. And as long as the surgery, I think I should try to operate it as early as possible. So if the patient is hospitalized, I would take this opportunity to operate this patient, especially because we know the chances of bilateral involvement is really big, and lots of these patients are young, so I think we have to

really address as fast as possible.

Dr. Camila Ventura:
Tony, I think you were going to give your opinion.

Dr. Antonio Capone:
Yeah, I'm sure we have uveitis colleagues in the audience. My inclination, though, is to wait until the retinitis is quiescent before entering to try to repair retina.

Dr. Kat Talcott:
Yeah, I think the hard thing for these cases is you'll often see someone come in with active disease and they haven't had PVDs yet, and then you just kind of know it's just like a time game. As soon as they develop their PVD, you're going to be in trouble. You know, there's not great data, is my understanding, on lasering these eyes. So most of my uveitis colleagues at Cole don't laser them, but it's just, I think hard when they come in and they haven't had a PVD yet. It's just it's hard because you're going to end up in a bad place.

Dr. Camila Ventura:
Tulio, another comment I was going to make because I noticed that you lasered the worst eye, but not the first eye you operated on. I would definitely add an FA to check on how these vessels are and how vascularized that retina is due to the case; it's such a severe case. So check on the eye that you did not, the panphoto and you did a laser on the left eye, I think, and not the right eye, right? So check on that afterwards.

Dr. Tulio Loyola:
Yeah, of course, yeah. I wish I could have done the angiography before as well so that we can document everything. But yeah, after the treatment, we saw the angiography from both eyes. The first eye, the eye with better prognosis, it had the vasculitis, but it's still well perfused. But the second eye, I think it was a good choice to make the panretinal photocoagulation.

Dr. Edward Wood:
Ryan?

Audience Member:
Beautiful cases. Do you happen to have follow-up farther out than 30 days? You know, part of the issue even when you have initial surgical success in the setting of active or previously active acute retinal necrosis, is that the amount of intraocular inflammation with silicone oil inside of the eye and decreased effective vitreous volume is, you're often going to end up with inferior PVR. And significant traction sometimes even combined tractional and rhegmatogenous detachments under oil. So it's a great first step. I think you guys did a beautiful job repairing the retinal detachments. But this is only the first step, right? And you never know what's going to happen over the following 3 months.

Dr. Tulio Loyola:
Yeah.

Dr. Camila Ventura:
Agree. Ahmed?

Audience Member:
Oh yeah, absolutely. I put everybody who's had even unilateral ARN on lifetime valacyclovir. I don't know, Jordan, you do the same thing, at least 1 year? Yeah, I do. I do lifetime valacyclovir, yeah 1 gram daily, assuming normal renal function. But yeah, do you have, like?

Dr. Tulio Loyola:
Yeah. So actually, this case is quite recent. He has still the silicone oil in his eyes. We are planning on taking the silicone oil in his first eye. Actually, he's quite afraid of taking the oil. We explained this to the patient why we should take it out, but he's kind of reluctant on it. We are planning on taking the oil with 7-8 months post-op in the right eye. Maybe we thought of taking it earlier, but it was kind of debate around this topic, and he's still using a prophylactic treatment with acyclovir, full dose.

Dr. Camila Ventura:
Ahmed?

Audience Member:
Thanks for the great case. And actually, I've been facing this when couple of years, we are working for the surgical unit of the uveitis, and what you did was great. Couple of things I talk about, like Dr. Capone said, when you are going within a case which may be an

active one, I ask the medical uveitis team to work on this and give them acyclovir for a while, maybe 2-3 weeks to keep everything settled. Then when I go, I will do whatever you did and take care of the PVD because it's very attached in those cases. But what I wouldn't do is the PRP in the second case. Actually, you're a hero to do this second case, for course, but don't do the PRP, because actually those cases, when you follow up for a long time, you may find the recurrence, and you may need to do further retinectomy for those patients, and this will hinder your outcome. But otherwise, I will go the same like you did. Regarding the silicone oil removal, I would wait at least for 6 months in such cases, because if you get the oil out, I got two cases with oil out 2 months or 3 months, and they got recurrence, inferior PVR, and then we got the same condition. Thank you.

Dr. Edward Wood:
Thank you, wonderful. We're the next case. Thank you so much. Thank you guys. Wonderful job. Good job not giving up.

All right, we have our next fellow. Come to the podium. This is Ravin Punamia from Hubli, India. Thank you so much for coming from India. Thank you so much. Oh my gosh, thank you.

Dr. Ravin Punamia:
Thank you for having me. Good evening, everyone. So I have a pretty interesting case, and I hope it's a pleasure for you to watch as well. So I've described the basics in my video. I think I'll just start with that.

Dr. Edward Wood:
That was the video. That was great.

Dr. Ravin Punamia:
[VIDEO BEGINS] This was a case of a 22-two-year-old boy who came to us with bilaterally closed funnel RDs, status post a road traffic accident 3 months ago. So we performed the lensectomy, and he could see the full extent of the closed funnel RD. We started trimming off membrane in a hope to open the closed funnel. After a lot of delicate dissection, we could see the funnel opening a little bit. We are tempted to open the funnel using PFCL, but it only opened partially, as there were membranes at the posterior pole which were keeping it contracted. The membranes were released and peeled off. A relaxing retinectomy had to be done in the superotemporal quadrant, as the retina was incarcerated in that quadrant. As you can see here, we tried to do the retinectomy using the cutter, but the retina was so swollen we had to use HS and dissect it out. Then we proceeded to removing the subretinal gliotic bands and membranes, and along with that, the subretinal hemorrhages, to release the retina of any traction under the retina.

Following all this maneuvering, we decided to open the funnel after releasing all the traction, and to our joy, the funnel opened up pretty well with no retained traction.

Endolaser was performed under PFCL, following which a delicate fluid-air exchange was done and silicone oil was injected. As you can see, the post-op day 10 picture, the retina is flat and well attached under oil, and the patient's vision improved from PL/PR inaccurate to 6/36. [VIDEO ENDS]

So I have some take-home points. I guess closed funnel RD is not always the end of the story, that you can do more. And this was a bilateral closed funnel RD. Unfortunately, the other eye was already phthisical, so this was the only eye, and this was a young male patient. So we had to do what all we could, and we owed it to the patient. And in such cases, it's very important to understand the disturbed anatomy and what is causing it, which is mainly the PVR, and dissecting the membrane and performing dissections wherever required, performing retinectomies wherever required. It's very crucial, and I know in our hands we only have the anatomical attachment. The functional part is not in our hands. But we are fortunate that this patient recovered 20/100.

Dr. Edward Wood:
Amazing outcome, really great surgery. I have a question for the panel. This case, it's so challenging. At the same time, the PVR membranes, they're so mature that they're so peelable. And it just adds in the question of, like, when you have a patient in your clinic that doesn't have a severe detachment like this, but let's say they've re-detached once or twice and there's still PVR, how long would you wait until membranes really, really mature till you can knock them out? That's always a hard conversation to have with a patient, because they're anxious to get their eye fixed. But I want to open that up to the panel.

Dr. Kat Talcott:
Yeah, I think that's really good. I mean, obviously, for me, if I have a patient who re-detaches for the first time, I try and go in right away. But if you're sort of in the cycle where PVR just keeps forming, I don't think it's a bad idea to give it a little bit longer to let things mature. You know, to be frank, it often depends on just what my surgical availability is. I'd rather do that case in a nice, controlled fashion. And then it depends on the patient. Like, sometimes these people will have back-to-back surgeries, and so sometimes they just need a little bit of a break. But for sure, it's easier to sort of peel. It was really amazing how nicely those subretinal ones came out too, that you were

able to access.

Dr. Ravin Punamia:
Actually, the patient had a delayed presentation. This was 3 months post their trauma. So that's why I think the membranes had matured.

Dr. Nassim Abreu:
So I think that something we would have to take into account is whether the macula was off or on the first case, on the first surgery. And if it was on, then I would go ahead and go straight in as soon as possible just to keep it mac on. If the macula was detached, then I would prefer to leave it for the membranes to mature so we can see them and take them more effectively.

Dr. Antonio Capone:
And my answer, Edward, is, if you're playing the pure PVR maturation game, 3 months for me.

Audience Member:
So that was an amazingly beautiful case, and I commend you. Before I say anything, I want to know how long did that take you? Be honest. Give me the honest time.

Dr. Ravin Punamia:
I think it was 1.5 hours.

Audience Member:
How long?

Dr. Ravin Punamia:
1.5 hours.

Audience Member:
You see? And I will tell you that this is the thing we don't disclose when we do these cases. We make it look so easy, but it takes a long time.

But I will say that and I'm sure Tony will agree with this, when you have younger people, spending that time is so rewarding and so important, because you're giving that person the potential of having vision, and maybe in the future, there'll be something better that we can offer them. So the trying and trying to do that, no matter how long it takes you, is super important.

So congratulations. That was beautiful.

Dr. Ravin Punamia:
Thank you.

Audience Member:
Quick comment, beautiful surgery. This is not regarding your technique, but the use of the Ingenuity. I saw you were using the Ingenuity also in the second- the serous detachment case. And in both cases, just remember to mag up to really fill the whole screen with surgery. In your video and the other video, the vertical diameter of the lens was less than the whole diameter of the screen, and so you're losing a lot of pixels. It is like if you buy a 100-inch screen and see the World Cup in a 55- you know, inch diameter screen. So you're wasting a lot of pixels, and you get less resolution. And also you make the HDR system of the screen work extra, and you might get some pixelation or some noise. So the message is, when using heads-up surgery, mag up, you're going to really feel the difference.

Dr. Ravin Punamia:
Okay.

Audience Member:
Regarding the timing of re-operations with PVR, I used to wait until the membranes matured, like especially under oil. Things are slow motion. You want to peel it nicely, but I've stopped doing it recently. And what I do is I go in early, when it's optimal, and I just peel ILM, like, everywhere, like whole eye. ILM peeling is not whole eye, but as much as you can. And that gets off all the immature PVR cells too, and the outcomes have been pretty good. Ideally, if you can peel out to where you're going to do the retinectomy, you're golden, and your retina is going to stay attached.

Audience Member:
I want to say that your video is great, obviously, congratulations. And one thing that you showed over there, it's when you have a PVR case like this, you peel everything that you see, and you feel and you place PFO. And when you don't see the retina completely

reattach, take out the PFO and look under the retina, because always there are some membranes under the retina, and you need to work on them. And once you peel, as you presented it, everything looks perfect.

Dr. Camila Ventura:
Thank you, Ravin. Very great, great video.

So we're moving to our next presenter, Dr. Ciro Virgolino from University of Brazil.

Dr. Ciro Virgolino:
So good evening, everyone. My name is Ciro Virgolino. I'm a second-year fellow at the Altino Ventura Foundation University of Brazil. It's a great honor to be here, representing my country and my institution at such an important event.

So today I'll be presenting a case of scleral perforation after a conjunctival tattoo, entitled I See You: An Adventure in the Blue Retina, was first performed by me, our expert inoculated to Dr. Marcelo Ventura and a fellow glaucoma expert.

So this is a case of a young woman who came to the emergency department with low vision and severe ocular pain, four hours after the conjunctival tattoo procedure. Her visual acuity was hand motion, and her IOP was 33. She had a blue pigmentation and diffuse chemosis of the conjunctiva, and the anterior chamber was filled with a whitish material through the pupillary axis. So the fundoscopy wasn't possible. However, in the ocular ultrasound, we cleared the retinal detachment. So given the severity of the case, we planned this surgical intervention.

[VIDEO BEGINS] This is the case of a young woman who arrived at the emergency department after a scleral perforation caused by a conjunctival tattoo. She presented with light perception vision and ocular pain. Pigment particles were seen dispersed in the anterior chamber, restraining visualization. An anterior chamber wash with BSS was performed. As the visualization improved, an extensive fibrin membrane was found covering the lens and the trabecular meshwork. After carefully removing the membrane, the lens appeared clear and the capsular bag remained intact. The membrane was also removed from the chamber angle with the help of an IA cannula. During the procedure, a corneal laceration was identified with BSS leakage, the result of mechanical trauma from the tattoo artist attempt to remove pigment from the anterior chamber.

“My child, you were warned, never play with the eye.”

A corneal suture was then placed. Before using a gonio lens, additional membranes were removed from the trabecular area. A tenectomy of the superior conjunctiva was done to locate the scleral perforation and pigment injection sites, where two small perforations were identified. Now, let's dive into the vitreous cavity. It was diffusely pigmented with blue dye, making visualization and vitrectomy extremely challenging.

After an extensive vitrectomy, the retina was attached, though a large deposit of blue pigment covered the posterior pole, inducing a posterior vitreous detachment allowed mobilization and aspiration of the pigment from the macular region.

A 360-degree vitreous base shaving was then completed. A thin membrane covering the posterior pole was identified and successfully peeled, aided by the contrast of the pigment itself. A fluid-air exchange was performed to improve visualization of the anterior segment and to assist in lasering the scleral perforation sites. One month after surgery, the patient presented with an intraocular pressure of 16 mmHg and a visual acuity of 20/80. So she could finally say, “I see you.” [VIDEO ENDS]

Dr. Ciro Virgolino:
So at the follow-up, we started two IOP-lowering medications in the early follow-up. Initially, the patient showed significant visual improvements. However, she developed a white cataract and increased IOP, so we recently submitted her to a second intervention with phacoemulsification and tube implant.

So thank you so much for this opportunity and your attention.

Dr. Camila Ventura:
I see Hua wants to speak so bad.

Audience Member:
So, yeah, that's an awesome case. I think Brazil needs to put out a public service announcement to all its patients, because I believe another former Fellows Foray winner presented a very similar case. So very well done, very interesting case. I wanted to ask you, what triggered you to put on the gonio lens to try to peel the membranes in the angle, because I think that was a brilliant move?

Dr. Ciro Virgolino:
Yeah, sure. Since we had Dr. Marcelo, in especially he’s housed at the Altino Ventura Foundation, he told us the design side to try to

search the trabecular meshwork to remove these membranes, because in the last cases, we had a very aggressive glaucoma who went poorly even with GATT surgery. So this time, we chose to do the removal, and even so we needed to do the tube implantation.

Dr. Camila Ventura:
You want to add anything?

Audience Member:
Yeah, so congratulations, Ciro. You presented brilliantly. I think this is case number 3 for us right now, and every single case we've been learning more and more. Of course, this is an unfortunate event. Regarding this case specifically, this was by far the worst case. The tattoo artist, if we may call him that, he not only injected posteriorly, but he also injected anteriorly, so there were two perforation points.

The anterior segment is the biggest issue, actually, because in that sense, like most of the reported cases regarding inadvertent intravitreous injection of tattoo ink, we have a secondary glaucoma. And in this case, he pretty much filled the whole anterior segment with these particles. So now we have the trabecular mesh completely obstructed. Glaucoma is pretty much a certainty in this case, and it ended up actually happening.

So, but the idea of actually using a gonio lens, involving the glaucoma expert as well, to help in this sense of trying to see how badly the trabecular mesh would be, was with the main objective of trying to reduce that risk of going to a secondary glaucoma, and it ended up happening.

Now, in a previous case, we did learn that if you do have secondary glaucoma in cases with tattoo ink, do not do a hemi-GATT or a GATT techniques. Go for the tubes, so the Ahmed tubes or the Susanna tubes or any anti-glaucomatous implant in that sense, because these patients, they evolve with a very bad uveitis if you go for the trabecular mesh techniques like hemi-GATT and GATT techniques.

So in that patient specifically, we weren't able to avoid the secondary glaucoma, but after using the anti-glaucomatous tube implant, we were able to get a really good control. So second surgery was pretty recent, but we are very satisfied with the result. What was the vision after the second surgery, and we took the cataract out?

Dr. Ciro Virgolino:
It was 20/30 at the first month.

Audience Member:
So it's a pretty good outcome. So congratulations, Ciro.

Dr. Camila Ventura:
I'm curious, actually, congratulations, sorry. I'm curious about retinal toxicity, like is there any follow-up on the retina to check on it?

Audience Member:
So the first case actually, we had some of the tattoo ink injected subretinal. The first case was actually the one that I presented back in Vegas a while ago, and that area where the tattoo was injected subretinally did go through a necrosis. So it was bad, but it was contained. It did not evolve into something bigger.

Now the second case did not have a necrosis, and in this case specifically, we don't have any large area or diffuse area of the retina that was affected with this tattoo. So we're not actually expecting necrosis on this case. And on a general sense, we haven't seen a toxicity like the diffuse toxicity with just the presence of the tattoo ink in the vitreous cavity.

Dr. Nassim Abreu:
I want to make a quick question, because probably you're the only one that's seen this in the whole-

Dr. Yewlin Chee:
Is everyone going to the same shop, because maybe a sign should be put up or something.

Dr. Nassim Abreu:
How's your management of the post-op inflammation? I think that using the gonio lens was excellent to remove everything that you can. Eventually, we will have a residual dye in the vitreous base and probably in the back of the iris, and I think that we should take as much as we can. Do you feel that these eyes get a lot of inflammation in the post-op period? Do you change your steroid management with these patients? What do you do?

Audience Member:
So interestingly enough, we didn't have extreme inflammation on any of the cases until on the first case we tried the hemi-GATT technique, so maybe—and this is our theory actually, by exposing the vessels, destroying the trabecular mesh and exposing the

vessels, maybe that was what caused the very- it was the worst uveitis I've seen so far. Like the patient was every single day full therapy against glaucoma, IOP over 70. I had to, for the first time— I don't know if anybody has ever done a relief vitrectomy—I had to do a relief vitrectomy just to get the eye under control for around 7 days until it got filled again, and then we finally went towards the tube implant. So that was why on this case we were very advocate to going straight to the tube implant instead of trying anything else.

So, but it's very well described in the literature like uveitis, but in our experience we didn't need to do anything too crazy to control it.

Dr. Camila Ventura:
Okay. Last comment.

Audience Member:
Yeah, great case. That was amazing. A few questions. One was, do the membranes peel off pretty easily? It looks like in the video it came off pretty easily, so is it more like PVR? Can you use your standard forceps to remove them?

Dr. Ciro Virgolino:
Yeah, it was actually easy to remove, but around the vessels it was more attached, so we had some trouble. And actually, when we removed the membrane at the posterior pole, we saw that the pigment penetrated more the retina. So in the follow-up of this patient, the posterior pole became blue also.

Audience Member:
And then I saw that you guys did a localized peritomy instead of a 360. I am not familiar with how they do these tattoos. Is this a pretty common entry site of where they inject the tattoo ink?

Audience Member:
So actually, pre-op we did a B-scan, and we were able to locate the entry point, so we just did a peritomy on that area.

Audience Member:
Okay, and then do you feel like green ink or blue ink is better tissue blue or ICG?

Audience Member:
Black is worst, red is second to worst, and then green and blue are from what we saw were too.

Dr. Camila Ventura:
Different colors matter.

Dr. Yewlin Chee:
Okay, and thank you so much. That was a fascinating case.

We have last but not least, we have Charles Zhang from Bascom Palmer.

Dr. Charles Zhang:
All right, thanks for sticking around everyone, and thanks for the organizers for letting me present this case.

So this is a patient, it was a 14-year-old who had a history of optic pit-associated maculopathy that was referred to us. The outside doctor had observed them for quite a bit of time, and they were 20/200. They came to our clinic, Dr. Berrocal saw them in clinic, and I think we waited about 4 months of observation of 20/200 vision before we decided to take this patient to surgery. So we can start the video.

[VIDEO BEGINS] A 14-year-old female was found to have a congenital optic pit and associated foveoschisis. Surgery was pursued after several months of observation. Dilute triamcinolone was added, followed by a core vitrectomy to debulk the majority of the vitreous. As this was an otherwise healthy teenager, the hyaloid was noted to be down, and several attempts were made to induce a PVD from the nerve using the cutter, as well as using the flex loop. The decision was made to lift the hyaloid using the flex loop in the premacular bursa with a gentle brushing motion. Care is made to ensure that we do not unroof the thin residual layer of hyaloid and ILM over the fovea that was seen on the pre-op OCT. The flex loop is partially retracted to create a stiff pick that can be used at the edge of the hyaloid to lift it from the parafovea. Then we switch to the cutter to propagate the PVD to the periphery, making sure that we stay tangential as much as possible to minimize iatrogenic breaks. Once the hyaloid is far enough peripheral, the fluidics of the machine can be used to propagate the PVD out to the equator. However, as this is a child, another stain of triamcinolone is used, followed by our shave and peripheral exam. Brilliant blue is placed over the macula and allowed to rest for one minute to stain the ILM, followed by a washout. Intraoperative OCT is used to confirm that no iatrogenic macular hole was created during PVD induction. A pinch-and-peel technique is used to initiate our ILM flap. The flap is then propagated inferiorly to extend the size so that it can be inverted over the optic pit. A secondary flap is made superiorly so that we can sleep better at night. Using the temporal edge of the previous ILM flap, a wide

fovea-sparing ILM peel is performed starting superiorly. Although we did not have the specific goal of creating inverted flaps, the ILM came nicely, and the flaps were left in place. Fluid-air exchange with the eye tilted nasally and aspirating with a cutter port temporally is used to help the flap settle over the pit. Gentle laser is performed at the temporal border of the nerve, followed by 14% C3F8 gas exchange.

At post-op week 6, there's faint laser scarring at the temporal edge of the nerve, improvement of the foveoschisis on OCT, and improvement of the vision to 20/70.

[VIDEO ENDS]

All right, so I think there's a couple of points there I really want to go over. You know, I've done far too many pediatric cases than I would want to do prior to doing fellowship, but I think, like learning to induce PVDs in these kids has been very instrumental, especially like you can convert this information to when you're doing adults.

You know, we did a couple of different techniques where we, with adults, we typically go to the nerve and we try to go, stay tangential, very low, and move outwards. We also tried using the flex loop, but there's this one technique that Dr. Berrocal and Dr. Nemo Patel described, where, using the premacular bursa and the flex loop, you kind of just do the sweeping motion outwards, and then you're able to find an edge there, and then using the flex loop and retracting a little bit, you create the stiffer version of it that allows you to use it as a pick to lift it up.

Specifically in this case, as you saw in the pre-operative OCT, there was pretty much just ILM and hyaloid over the fovea, and if we were to remove the hyaloid over that area, we were very concerned that we might actually induce an iatrogenic macular hole.

Then the other things that we did are just like the positioning of the ILM flap over the pit. You know, the making sure that when we do the fluid-air exchange—Dr. Berrocal actually doesn't use the soft tip—we use a retractor for all of our fluid-air exchanges, but it works very nicely in this case, because you can point the cutter towards the flap so that it actually aspirates in a vector that isn't just vertical. It actually goes from temporal to nasal. So you can pull that flap and maintain the orientation over the pit.

So thank you so much for your attention.

Dr. Yewlin Chee:
Thanks so much. That was beautiful. There's been so many different ways described to surgically repair these. For the panel, kind of what's your go-to?

Dr. Antonio Capone:
To me, yeah, so I couldn't hear. Similar. I take ILM, flap it into the pit as was done in this case, and then I take the ILM and peel it. I don't go over the fovea, because it's so thin. I tend to trim those flaps up and down, but fundamentally it's the same procedure, so very similar to this.

Dr. Yewlin Chee:
Laser as well?

Dr. Antonio Capone:
Yes.

Dr. Nassim Abreu:
So I do think that these cases need to have some kind of tamponade in the pit, whatever you want to use. Everything has been described, from sclera, Tenon's, lens capsule. We know that at least 50 to 60% of all these optic pits just resolve with a PVD. The thing is that we don't actually know which of these patients are actually going to resolve. And most of the times you had like the changes in the OCT from your patient in 6 weeks are solid changes. These cases tend to go over 6 months to resolve.

And the thing is that we actually don't know which are the ones that are going to resolve with the PVD, so I do think that we need to plug them. I wouldn't use punctum plugs like we've seen around there.

And I would like to ask you, why peel the macula around the fovea? What was the thinking around that, especially because you know that there's a risk of creating a macular hole, and this is not a vitreomacular interface problem?

Dr. Charles Zhang:
I think that's a very good question. And like you said, like there have been so many different techniques described for how you fix these pits, and because there's so many different ways, we don't know which ones are the ones that are contributing the most.

I will say this is like probably very important point that I learned from Dr. Berrocal, is that for these pediatric cases, you're treating the kid

and the family, and in these very anxious families, sometimes we're just really trying to do the full court press and do every single thing we can to give it the highest probability of success. It's definitely possible that there may not be too many tangential forces of the ILM in this specific case that could be contributing to the hole, but in the possibility that there could be some force or vector that's contributing that could potentially reduce the risk of success.

Like you mentioned, like we really want to make sure that we avoided the fovea here, and by having the triamcinolone stain right there, we could be sure that we're like- like as you saw when we were doing our peeling, we were staying very far away from that fovea, just like you know when people do myopic macular holes and like the fovea-sparing techniques. So we want to try to give this eye the best possible chance by doing the ILM peel, making sure that our flaps were pretty far away from the center where the triamcinolone was staining.

Audience Member:
So I want to ask, what was the long-term follow-up? Your surgery was absolutely beautiful. To answer Nassim's question, also we also do these two peelings, one at the macula to prevent the formation if in case a macular hole forms in future. Also it kind of tamponades it, so beautiful, beautiful surgery. What was the long-term follow-up of this case?

Dr. Charles Zhang:
So I think that the last time we saw this patient, Dr. Berrocal saw them and said that she was safe to do everything for spring break, and the vision was still the same.

Audience Member:
Because sometimes you have the fluid being waxing and waning, so you need to be very patient, because sometimes you feel it's not getting better, but you need to wait for some time. And slowly. I've had cases which take about a year to resolve.

One small tip is sometimes I find the amniotic membrane very useful. So what I do is I plug the pit with amniotic membrane, and then I do exactly what you did, kind of make the flaps and put the flaps over the amniotic membrane so that hastens it. But I mean, thousands of ways to skin a cat, so I mean there's no kind of procedure for that.

Dr. Charles Zhang:
Yeah, absolutely. And I also do believe on the last OCT, it wasn't like completely flat, there was still some degree of schisis.

Audience Member:
I was just going to comment that I think pits, like central serous, have no good solution, or multiple solutions that may work in every situation. So I was at a conference a few years ago in Poland, and I think we talked about seven different ways of putting things in pits, including ILM flaps, cartilage, like capsule and amniotic membrane. And so they're all different ways to do it.

So I think definitely in terms of the psychology of managing these patients, if you can try to fix the problem once and get it done and then probably have a similar outcome, then it's good.

The last pit I did, I actually did laser around the edge. I stuffed the ILM flap into the pit as well, and also did a small drainage retinotomy in the peripheral part of the macula. And you know that person did fine too. So there are different ways to do it, and I think we'll just keep learning.

Dr. Charles Zhang:
Thank you.

Dr. Yewlin Chee:
Thanks so much again to our fellows for presenting some amazing cases. We are just going to pull up this QR code if you can vote for your favorite case.

Dr. Edward Wood:
Here are the names, and also the name of the case.

Dr. Yewlin Chee:
Drum roll, please.

Dr. Camila Ventura:
You can hear the drums now.

Dr. Yewlin Chee:
So Ciro is our winner. Come on up, please.