Stellaris PC

A New Platform for Combined Anterior and Posterior Segment Surgery

The Stellaris PC from Bausch + Lomb combines world class vitrectomy and phaco capabilities in one state-of-the-art system offering Procedural Choice with TSV and MICS. More choices provide better patient care options.

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FACULTY

Dr. Yannick Le Mer, Moderator, is with the Fondation Ophtalmologique A. de Rothschild in Paris. He reports no financial interests relevant to this article. Dr. Le Mer can be reached via e-mail at ylemer@fo-rothschild.fr.

Dr. Ignasi Jürgens is with the Retina and Vitreous Department at the Institute Catalan of Retina in Barcelona, Spain. He reports that he is a consultant for Bausch + Lomb. Dr. Jürgens can be reached via e-mail at 27539ijm@comb.cat.

Dr. Jeroni Nadal is director of the Department of Vitreous-Retina and Macula at the Barraquer Eye Center in Barcelona, Spain. Dr. Nadal reports no financial interests relevant to this article. He can be reached via e-mail at nadalj@co-barraquer.es.

Mr. Paulo Stanga is a Consultant Ophthalmologist with the Manchester Royal Eye Hospital, Central Manchester & Manchester Children’s University Hospitals NHS Trust in the United Kingdom. He reports that he is a consultant for Bausch + Lomb. Mr. Stanga can be reached via e-mail at retinaspecialist@btinternet.com.

Dr. Pavel Stodulka is the Head Surgeon at the Gemini Eye Center in Prague, Czech Republic. Dr. Stodulka reports no financial interests relevant to this article. He can be reached via e-mail at stodulka@gemini.cz.
Stellaris PC: A New Platform for Combined Anterior and Posterior Segment Surgery

INTRODUCTION
The Stellaris Vision Enhancement System (Bausch + Lomb, Aliso Viejo, CA) has been available to cataract surgeons since 2007, enabling advanced coaxial and biaxial microincision cataract surgery (1.8 MICS). Now, with the launch of the Stellaris PC, surgeons are able to employ a combined phaco and vitrectomy technique using MICS and a tranconjunctival sutureless vitrectomy (TSV) technique. The Stellaris PC allows for a highly efficient vitrectomy procedure with advanced illumination, preprogrammed settings, and other features that make the system easy to use.

To assess the clinical performance of the Stellaris PC, Bausch + Lomb conducted an international Field Observation Study (FOS) in 2010 involving eight surgeon sites across seven countries with a total of over 100 procedures performed. The participants of this roundtable will share their experiences in the FOS and their thoughts and opinions of the Stellaris PC.

REASONS FOR CHOOSING THE STELLARIS PC

Dr. Yannick Le Mer: In your opinion, what features are most important in a combined system for vitrectomy and phacoemulsification?

Dr. Pavel Stodulka: A phaco/vitrectomy system should be able to perform the procedures quickly and gently and offer the ability to transfer from one surgery to another with the most minimal movement possible.

Dr. Ignasi Jürgens: We have many patients who undergo combined procedures, so when we are performing vitrectomy, it is a necessity to have a good phaco machine also. Simplicity and efficiency in set-up is important, in my opinion.

Mr. Paulo Stanga: A smooth transition between anterior and posterior segment surgery is important, not only for the surgeon and the patient, but for the surgical theater staff. Not having to change the cassette in the transition on the Stellaris PC is a welcome feature.

Dr. Le Mer: What advantages exist in performing combined cataract and vitrectomy?

Dr. Jürgens: We see many older patients who have cataracts as well as retinal pathology. The biggest advantage to performing phaco with vitrectomy is that the patient does not require a second surgery. Additionally, there is a cost savings in combined procedures.

Dr. Jeroni Nadal: There is also a medical advantage to performing combined procedures. Some types of vitreoretinal surgeries can provoke secondary cataracts; in the case of macular hole surgeries, performing a second surgery to remove cataracts can cause the macular hole to reopen.

Mr. Stanga: The prevailing thought is that 70% of patients who undergo pars plana vitrectomy will develop
a cataract within 3 years, so it makes sense to perform combined surgery for some cases.

**CLINICAL EXPERIENCE WITH THE STELLARIS PC**

**Dr. Le Mer:** Regarding clinical experience with the Stellaris PC, what are your thoughts on the machine’s interface and the footpedal function?

**Mr. Stanga:** The interface on the Stellaris PC is a computer touch screen and is much more simple and user friendly than previous generations. The footpedal makes it much easier to switch between phaco and vitrectomy (Figure 1).

**Dr. Jürgens:** One of the features on the Stellaris PC that I enjoy is that the parameters are displayed on one screen. Not having to toggle between screens makes changing parameters very easy.

**Dr. Le Mer:** I have found that changing a parameter’s configuration and saving it to memory is very simple on this system. One is not obliged to go through many screens and is allowed to simply make a precise and customized configuration.

**What is your opinion of the vitrectomy cutter on the Stellaris PC?**

**Dr. Stodulka:** I am very impressed with the cutter’s speed and efficiency.

**Dr. Jürgens:** For the first case that I performed with the Stellaris PC, I sought to challenge the high cutting rate. The issue that I have encountered with other probes at high cut rates is poor fluidics. With the Stellaris PC cutter, I had excellent flow at 5000 cuts per minute (cpm)—I had not seen this with any other cutter. For the next several cases, I used a high cut rate and simply changed the vacuum when performing central and peripheral vitrectomies. This offered me the control that I needed.

The dual linear control on the Stellaris PC is another excellent capability that applies not only to vitrectomy but also for silicone oil injection and aspiration during diathermy. For cataract removal, I am able to separate the aspiration and the ultrasound.

**Dr. Nadal:** The cutter on the Stellaris PC is very safe—I feel comfortable working close to the retina with this device.

**Mr. Stanga:** I was impressed with both the 20-gauge and the 23-gauge cutters on the Stellaris PC. I appreciate the rigidity of the 23-gauge cutter and the close proximity of the port to the tip (Figure 2). The dimensions of the 23-gauge cutter are much improved over previous generations (Table 1).

The fixed 5000 cpm cut rate is an advantage to me in surgery. The efficiency of the cutter improves as the cut rate is increased. High cut rates produce smaller vitreous bites (left) in the aspiration line disrupt laminar flow and can mimic a high-viscosity fluid.
bites that behave more like a low-viscosity fluid. Large vitreous bites (Figure 3, left) in the aspiration line disrupt laminar flow and can mimic a high-viscosity fluid. Large bites can also drag against the vitreous cutter inner needle lumen. This Vitreous Liquification (Bausch + Lomb) feature on the Stellaris PC results in less traction.

Dr. Le Mer: Do you have the impression of fluidics stability with the Stellaris PC?

Dr. Jürgens: Yes. I do not see any change when switching from anterior to posterior segment surgery. The anterior chamber remains very stable not only in MICS, but also using a standard 2.8 mm incision.

Mr. Stanga: The Stellaris PC has very stable fluidics (Figure 4). The pre-set port open time is optimized at every cut rate (Figure 5), and I can simply use the footpedal like an accelerator, controlling vacuum to manage flow. At higher cut rates, turbulence is reduced because smaller bites of vitreous are removed with each cut. These smaller changes in vitreous volume created a more stable chamber throughout the surgery.

Dr. Stodulka: In our experience with fluidics, the anterior chamber remains rock solid (Figures 6A and B). Surprisingly in vitrectomy, however, we raised the vacuum to 600 mm Hg, and after working for approximately 15 seconds at this maximum, the eye tended to soften, even to collapse. Thus, when working at maximum values, I recommend matching the irrigation bottle pressure to the vacuum, having high pressure on the bottle.

Dr. Le Mer: Are you working with vented air forced infusion (AFI; Figure 7)?

Dr. Jürgens: I am, although I usually do not work at such aggressive parameters as 600 mm Hg.

Dr. Stodulka: Up to 450 mm Hg, I have found that the system works well.

Dr. Jürgens: I have performed all my 25-gauge surgeries with 400 mm Hg of vacuum with no problems.

Dr. Le Mer: I set my infusion pressure at 30 mm Hg. In the case of secondary infusion, I may raise it to 60 mm Hg or even higher.

Mr. Stanga: I have not had any cases of hypotony with this system; my standard infusion pressure is set at 30 mm Hg to 35 mm Hg. In some cases, we have had to raise the pressure to 50 mm Hg, but intraoperative hypotony has not been an issue.
Stellaris PC

Dr. Nadal: With a vacuum set at 400 mm Hg, I have infusion pressure at approximately 25 mm Hg, which works well for me.

Dr. Le Mer: How has the flow been with high cut rates?

Dr. Jürgens: I have performed all my cases using a 5000 cpm cut rate. I have no high speed cameras to measure duty cycle and do not have the ability to measure fluidics either; however, I did measure vitrectomy time, which showed that I performed a complete vitrectomy in 3.5 minutes.

Dr. Le Mer: I have performed 15 cases with the Stellaris PC, and I have developed the impression that as cutting speed increases, flow follows.

SCLEROTOMY SITES

Dr. Le Mer: What are your impressions of the 23-gauge vitrectomy Entry Site Alignment (ESA) technology (Figure 8)?

SURGEON SETTINGS ON THE STELLARIS PC

Dr. Ignasi Jürgens

Phaco
- Dual linear control of ultrasound and vacuum
- Linear control of vacuum up to 260 mm Hg

Vitrectomy
- Infusion pressure: 25 mm Hg
- Fixed cut rate: 5000 cpm
- Core vitrectomy:
  - 25-gauge surgery: linear control of vacuum up to 400 mm Hg
  - Peripheral vitreous shaving vacuum:
    - 25-gauge surgery: linear control of vacuum up to 150 mm Hg
    - 20-gauge surgery: linear control of vacuum up to 100 mm Hg

Dr. Yannick Le Mer

Vitrectomy
- 25-gauge surgery: maximal depression 500 mm Hg; infusion 30 cc/min; secondary infusion 60 cc/min
- 23-gauge surgery: maximal depression 350 mm Hg; infusion 30 cc/min; secondary infusion 60 cc/min
- 20-gauge surgery: maximal depression 200 mm Hg; infusion 30 cc/min; secondary infusion 60 cc/min

Figure 6. The Stellaris PC pressurized infusion rise time follows a linear path (A) as does the fall time (B).

Figure 7. Vented Air-forced Infusion.
Mr. Stanga: I think it is definitely a step forward from previous technology on the Millennium (Bausch + Lomb). I do think that the trocars could benefit from being sharper. The FOS experience was that there was a lack of uniformity in the sharpness of the trocars within the packs; however, to my knowledge this has not caused any clinical problems and is currently being addressed.

Dr. Nadal: It can be difficult to insert any trocar system into emmetropic eyes with thick sclera. Sharper trocars could be an improvement. The new system is one-step with a solid trocar, which is an improvement over the previous version because it requires less force (Figure 9 and Table 2).

Dr. Jürgens: I am currently performing 25-gauge surgery, so increasing the rigidity of the instruments has been a significant improvement. Wound construction is an important aspect in vitreoretinal surgery, and a smaller incision is better.

The vitrectomy probe performs well, the Stellaris PC has a good illumination system, and the tip of the vitrectomy probe is well designed.

Dr. Stodulka: The new solid trocar tip is excellent and is much better and easier to use than the trocar on the Millennium system.

Dr. Le Mer: Did you use sutures in the FOS for 23-gauge procedures?

Mr. Stanga: In my experience, the sclerotomies expanded more frequently in the more complex cases where the eye is rotated and manipulated more than usual, thus necessitating sutures. A completely different scenario is when you operate on posterior pole-only conditions such as macular holes or epiretinal membranes, where you are unlikely to suture. In my opinion, when in doubt, suture. However, maybe we need to become more aware of our technique and the way we maneuver the instruments so that we do not stretch the sclerotomies while moving the instruments, using the sclerotomies as a fulcrum.

Dr. Le Mer: What about with 25 gauge?

Dr. Jürgens: In the first 15 cases that I performed with the Stellaris PC, I had no problems or need for sutures. For a complex retinal detachment or a patient with diabetes who has anterior fibrovascular proliferation, however, the sclerotomies may stretch and require sutures.
**Stellaris PC**

**ILLUMINATION ON THE STELLARIS PC**

**Dr. Le Mer:** The Stellaris PC has two kinds of illumination: xenon and mercury vapor (Figures 10 and 11). The system has three color screens (filters)—yellow, amber, and green (Figures 12A-C)—that may be easily switched by the surgeon during a procedure with the footpedal.

**What has been your experience with the illumination on the Stellaris PC, Mr. Stanga?**

**Mr. Stanga:** I have used both the mercury vapor and xenon light sources. Traditionally, I have preferred xenon, but when the new wide-angle light pipe system that Bausch + Lomb is currently developing becomes available, I believe that mercury vapor may become an attractive option. With the current light pipe on the Stellaris PC, transillumination through the sclera using the xenon light works well when shaving the vitreous base. Color filters are also important. I prefer the green light filter for visualizing the vitreous fibers. More work is required to know which filters will best complement the intraocular tissue dyes that we are currently using.

**Dr. Nadal:** I have tried both mercury vapor and xenon and prefer the latter. I agree that the green filter is good for visualizing the hard membranes. For most membranes and the internal limiting membrane, biological stains are necessary.

**Dr. Stodulka:** Light filters and protection of the retina are important advances. Ideally, I would be able to perform most of my procedures with yellow light to protect the retina and then switch to green to visualize the structures.

**Dr. Jürgens:** I have used both light sources and all three light filters—an exciting aspect of this system is that we have been able to experiment with all of them.
I agree that the green filter offers a better view of the vitreous and thin membranes. Because patient safety is paramount, we need to experiment with what is safest while offering the best view in surgery (Figure 13).

Dr. Le Mer: The amber filter works best when capturing video; the images are so good that they closely resemble retinography. I agree with the panel that green offers the best view for membranes.

The FOS data show that most surgeons prefer the xenon with only one reporting a preference for mercury vapor. In regard to the light filters, the green was most preferred (74% of surgeons), but 70% of the cases involved membrane peeling, so this would be the logical choice.

Mr. Stanga: As we do more cases with the Stellaris PC, we may get used to changing filters according to the pigmentation of our individual patients and depending on the stage of the procedure. For example, one might choose a green filter for increased visualization of the vitreous and the amber filter for the posterior hyaloid.

Dr. Stodulka: One of the surgeons preferred using the yellow and amber filter when working under air to see better, which I found surprising.

COMBINED PROCEDURES

Dr. Le Mer: In combined procedures, have you encountered any difficulties during the transition from phaco to vitrectomy?

Dr. Jürgens: Because the nurse sets up the system prior to surgery and programs the sequence depending on the type of surgery that will be performed, all that is required is to switch to the next user mode with the footpedal, so it is very simple and flexible.

Dr. Stodulka: Combined cataract and pars plana vitrectomy cases are demanding for the surgeon, the team, and the surgical device. I am confident that the simultaneous combined procedure is the best option for the patient if both cataract and vitreoretinal surgery are indicated. Stellaris PC enables excellently smooth transition from anterior to posterior segment surgery. The 1.8 mm MICS incision for cataract removal seals safely and does not require sutures, even in combined procedures. Efficient phacoemulsification and high speed vitreous cutter of Stellaris PC shorten the procedure, which is critical for combined cases. We perform a high volume of combined procedures and are very pleased with the speed and comfort of Stellaris PC platform.

The problem in combined surgery occurs when the procedure is not planned such as if fragments fall into the posterior in the midst of cataract surgery. In this scenario, the cassette must be changed or traditional fragmentation must be used.

Dr. Le Mer: This is true. If you work only with combined cases and combined procedural packs, however, this is not the case.

Mr. Stanga: In my experience, the transition is smooth and quick. You only have to reconnect one tube, and if you are using the combined cassette, there is no change required.

Dr. Le Mer: Most, if not all surgeons would agree that sutureless surgery is a major improvement in cataract and vitrectomy procedures in terms of patient safety and recovery. How much progress does this truly represent?

Mr. Stanga: I have gone through many phases, up and down, with sutureless surgery. I began performing 25-gauge sutureless vitrectomy in 2003 but have been frustrated with older technology, ultimately returning to suturing. With the new 25- and 23-gauge technology becoming available, I decided to give it another try. I think that it is inevitable that technology and technique will gravitate toward sutureless, which is a positive development. Transconjunctival sutureless vitrectomy (TSV) induces less trauma in the eye. However, I do think that we may still have cases that we begin as a sutureless procedure but may require sutures at the end. Plus, some difficult cases may still require 20 gauge. Because of this, it is important that, for the time being, our junior surgeons continue to learn how to suture sclerotomies.

Dr. Le Mer: Have you been in a situation that required curved scissors for which it would have been easier to perform 20-gauge surgery because of the lack of availability in 23 gauge?

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Stellaris PC: Advanced Capabilities for Combined Procedures

BY DR. ROBERTO BELLUCCI

Since the Stellaris was introduced in 2007, those of us who perform phaco surgery have benefited from the optimized phaco power, separate control of ultrasound and vacuum, excellent control of fluidics, the dual linear foot pedal, and of course, the 1.8 mm microincision. With microincision cataract surgery (MICS), we can provide our patients with a safer self-sealing incision that results in less trauma to the eye during surgery and faster healing postoperatively. For some time, Bausch + Lomb has been developing the vitreoretinal surgery component for the Stellaris, and the result is the Stellaris PC. The Stellaris PC is by itself an elegantly engineered system with multiple features to improve our posterior segment surgeries, including but not limited to an ultra-high pneumatic vitreous cutter, advanced illumination, and an easy-to-use interface.

Because I perform many combined anterior and posterior segment surgeries in my practice, however, what I appreciate most about the Stellaris PC is that the features that I enjoy for phaco surgery actually enhance my ability to perform vitrectomy.

FEATURES ON THE STELLARIS PC

It is true that many patients who require cataract surgery have retinal comorbidities such as epiretinal membranes, macular holes, diabetic retinopathy, and rarely retinal detachment. These problems can be solved by combining MICS and posterior transconjunctival sutureless vitrectomy (TSV).

Because MICS does not impair the cornea, I have a better visualization of the retina for the posterior portion of the surgery. Additionally, the 1.8 mm MICS incision does not leak during vitrectomy and the intraocular lens stays after posterior surgery is complete.

The redesigned Venturi pump system offers excellent fluidics control for both MICS and TSV, and I am able to use lower pressure on infusion. This is particularly important during cataract removal after I have inserted the trocar for the vitrectomy procedure because the lens diaphragm will not be pushed backward. The combined procedure disposable packs allow an easy transition from anterior to posterior segment surgery.

The 5000 cpm on the cutter of the Stellaris PC reduces the traction on the retina, and because the port has been designed to be closer to the tip of the needle, I can safely bring my cutter closer to detached retina than was allowable with the Millennium (Bausch + Lomb). In addition, the high-speed vitreous cutting will fragment the vitreous into very small pieces, giving the aspirated fluid the characteristics of Newtonian fluids. Ergonomically speaking, the handpiece has been designed with a longer handle, increasing surgeon comfort.

The Stellaris PC provides both xenon and mercury lamp types, and the three available color filters improve visualization of vitreous for removal. The
dual independent lamps have been designed to eliminate phototoxic wavelengths. The new 23- and 25-gauge disposables allow easier insertion of the trocars and smoother surgery. The new forceps are designed to grasp the membranes with strength and precision and pull them with the proper force.

**CASE EXAMPLES**

In the first combined case that I performed with the Stellaris PC (Figure 1), the patient had a dense cataract (Figure 2) and an epiretinal membrane (ERM). The Venturi pump was particularly helpful for this scenario because the fluidics kept the chamber stable. The phaco procedure was smooth, and I only had to raise the bottle to 60 cm and use 10% maximum ultrasound power. After implanting the IOL through the 1.8-mm incision, I made an easy transition to the posterior segment. I stained the membrane with triamcinolone acetonide and used an amber color filter to minimize the white color of the drug and to see the central vitreous on removal (Figure 3). I removed the diabetic membrane with the new Bausch + Lomb 23-gauge disposable forceps (Figure 4), and for the internal limiting membrane (ILM), I used Brilliant Peel (Fluoron, Ulm, Germany); with this dye and the light source on the Stellaris PC, the ILM can be safely and easily removed using Tano forceps. After ILM removal, I removed the remaining central membrane material.

To perform every type of sutureless vitreoretinal surgery, we use the 23-gauge set of instruments, which makes posterior vitreous detachment easy. With 23-gauge, I find it easy to remove the ERM and ILM. Using 5000 cpm and the excellent fluidics control on the Stellaris PC, I can approach the retina for careful vitreous removal. The viscous fluid pump allows us to use silicone oil internal tamponade for macular hole (Figure 5). The same 23-gauge approach is preferred for retinal detachments, when it is very important to match fluidics and cutting for close retinal work.

**SUMMARY**

In my opinion, the Stellaris PC is the first truly complete combined surgical platform and has become my most effective partner in surgery. The machine has features that make the transition from the anterior segment to the posterior segment extraordinarily smooth in terms of safety and efficacy, so surgeons no longer need two systems to perform both surgeries at the highest level. The posterior segment surgeon will find in the Stellaris PC the best partner for advanced vitreoretinal surgery, without the need for a second machine for advanced cataract surgery.

*Roberto Bellucci, MD, is the Head of the Ophthalmic Unit at the University Hospital, in Verona, Italy. He reports that he is a consultant to Bausch + Lomb. Dr. Bellucci may be reached at roberto.bellucci@ospedaleuniverona.it.*
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**Mr. Stanga:** The cutter on the Stellaris PC is so efficient and ergonomic that in many cases, it can be used as scissors. However, for difficult proliferative vitreoretinopathy (PVR) cases where we plan to use silicone oil, it may be easier to use 20-gauge technology.

**Dr. Nadal:** I perform 90% of my cases with 23-gauge technology, reserving 20-gauge instrumentation for special cases such as PVR with retinal detachment or complicated cases associated with diabetic retinopathy with a retinal detachment.

**Dr. Jürgens:** I began performing 25-gauge 8 years ago and the process was very slow because the technology was not nearly as advanced as it is today. We performed a study comparing patients on whom we operated with 20-gauge vs 25-gauge surgery for ERM. Both groups had identical initial mean visual acuity and age. We clearly observed the visual recovery was faster in 25-gauge surgery (Figure 14). This was expected, as suturing induces a degree of astigmatism.\(^1\)

**Mr. Stanga:** This is well-reported in the literature. There is a significantly faster reduction in the postoperative corneal astigmatism with 25-gauge surgery.\(^2\)\(^-\)\(^4\)

**Dr. Jürgens:** Although it was not statistically significant, we also observed a shift to better final visual acuity with 25 gauge than with 20 gauge. This could be related to less inflammation in 25-gauge surgery but should be confirmed by larger randomized clinical trials.

**Dr. Le Mer:** Have you attempted to use the Stellaris PC on a retinal detachment in a highly mobile retina? What was your impression of stability?

**Mr. Stanga:** I work with 5000 cpm and an aspiration of 200 mm Hg to 300 mm Hg for all cases, and I have been satisfied with the stability of the retina, seeing very little to no traction on it. I am comfortable working in the peripheral retina, on a mobile retina, or doing planned retinectomies. I also tend to frequently perform scleral transillumination with the light pipe. The indentation with the light pipe stabilizes the detached retina especially when bullous.

**Dr. Le Mer:** When using 25 gauge, the aspiration should be increased to at least 400 mm Hg—the result is an efficient and fast procedure.

**Mr. Stanga:** With these settings, the 20 gauge was also very fast.

**Dr. Jürgens:** The Stellaris PC is clearly better for operating on a mobile retina, but indentation is important. The movement of the retina is not only due to vitreous traction, but the fluidics in the eye can also drag the retina, creating movement in the vitreous cavity. Because of this, it is necessary to constantly control the vacuum—with this control, the probe is able to shave the vitreous nicely.

**Dr. Stodulka:** We recently performed two cases in which the eyes were quite stable, so we were comfortable using 5000 cpm. The surgery was very efficient.

**Dr. Le Mer:** Do you have different settings for retinal detachment surgery and macular surgery or do you use the same cut rate for both?

**Dr. Stodulka:** I mostly work at a speed that I feel is best for a particular case. This is the beauty of the dual linear footpedal—I am able to find the best combination of parameters in a simple, efficient way.

**Dr. Nadal:** I agree with Dr. Stodulka. I have performed two or three cases of retinal detachment surgery. I have used 20- and 23-gauge instrumentation, and in both cases, I was able to work close to the retina with efficient control of the vacuum using the footpedal.

**Mr. Stanga:** The Stellaris PC keeps it simple and efficient. There is enough to pay attention to during vitrectomy surgery, so it is enjoyable to be able to work at 5000 cpm with confidence.

**Dr. Le Mer:** The dual linear control on the Stellaris PC allows the surgeon to create settings for peripheral vitrectomy, central vitrectomy, peripheral retinectomy, and mobile retina. Every aspect of surgery is controlled.
**THE LEARNING CURVE**

**Dr. Le Mer:** What tips do you have for newer surgeons or those who are transitioning to TSV?

**Mr. Stanga:** In my opinion, the advances in technology are such that the learning curve is becoming less steep. Previous microincision instruments were flimsy and overflexible compared to today’s technology, making work on the peripheral vitreous and retina difficult. It is still important, however, to be mindful of the peripheral retina to ensure that there are no missed peripheral tears. I have not yet seen any complications of vitreous incarceration, so I do not consider this something to be particularly cautious of with the Stellaris PC. I would also like to remind surgeons that they should not be afraid to suture transcconju- tivally because although patients appreciate leaving the operating theater without any sutures, they will be very unhappy if they have to return the next day if the incisions have not sealed.

**Dr. Nadal:** When I first began performing 25-gauge TSV surgery, the rigidity was very low, and I recall quickly switching to 23 gauge. Today, however, 25-gauge technology is much improved, and the instruments are stiffer.

**Dr. Le Mer:** Did you learn 20-gauge surgery first, or did you go straight to transconjunctival sutureless vitrectomy?

**Dr. Nadal:** I began with 25-gauge surgery.

**Dr. Jürgens:** The learning curve is less steep with our residents or fellows because they are accustomed to seeing sutureless vitrectomy. There are some basic tenets to keep in mind. First, you must have good wound construction. Second, the vitrectomy should be complete because partial vitrectomy can cause problems related to residual vitreous traction, leading to secondary retinal tears and retinal detachment. Third, the eye should be kept centered and stable. Other tips include: know your vitrectomy machine and how it works, and share information with colleagues regarding difficult cases, techniques, and problem solving.

**Dr. Le Mer:** Was MICS with a 1.8-mm incision difficult to learn?

**Dr. Stodulka:** I did not find a transition to 1.8-mm coaxial MICS at all difficult. Rather, it was a pleasure because I have been performing MICS since 2000. We started with biaxial technique, which is not really gentle to the eye. I found the coaxial microsleeve to better protect both the wound and the endothelial layer.

**FUTURE ADVANCEMENTS**

**Dr. Le Mer:** What advances would you like to see for the Stellaris PC technology in the future?

**Dr. Jürgens:** I would like to see a function that controls IOP well. On the current vitrectomy systems available today, there is no real-time measurement of the IOP during surgery. If you want to know the real IOP, it must be measured manually with a tonometer.

**Mr. Stanga:** Stellaris PC is a real step forward; however, I would like to see sharper trocars and wide-angle light pipes. Larger screen icons for increased visibility would be a bonus.

**Dr. Nadal:** I agree that the trocars should be sharper, and the wide-angle light pipe would be an improvement.

**Dr. Jürgens:** I agree that you should go into the eye as sharply and cleanly as possible. The downside to an easy insertion, however, is that the cannulas can easily pop off. There must be a balance—it would be ideal to have a trocar that cuts into the sclera more easily, but with good cannula retention during surgery.

In the future, I would like to have access to a system that provides 3-D information for the macula during surgery. Intraoperative imaging tools based on optical coherence tomography would be a fantastic innovation that would make precise tissue dissection easier. Also, a femtosecond laser system guided by OCT would be ideal for retinal surgery.

**Dr. Stodulka:** On my wish list would be a system video unit and an IOP control feature.

**Dr. Le Mer:** I would like to thank the participants of this roundtable. We have exchanged many ideas, and as we perform more cases with the Stellaris PC, we will continue to improve our surgeries with this system and appreciate the many features that it possesses to improve patient outcomes.
