

# A New Technique to Peel Internal Limiting Membrane

SHARKSKIN® forceps can help make ILM peeling less traumatic & more efficient

By Arshad Khanani, MD, MA

Internal limiting membrane (ILM) peeling is utilized for addressing multiple retinal pathologies. I routinely peel the ILM for macular hole repair, epiretinal membrane removal, myopic macular schisis surgery, diabetic macular edema cases, and diabetic tractional membrane removal, as well as retinal detachment with a concurrent macular hole or epiretinal membrane. Most retina surgeons use the pinch-and-peel technique to remove the ILM.

## PINCH AND PEEL

In the pinch-and-peel technique, we apply pressure with forceps so we can pinch the ILM and get an edge to peel it off. The technique is successful in most cases, but there is potential for trauma or inefficiency.

As we apply pressure on the ILM with the tip of the forceps and pinch the ILM to get an edge, we must always apply the right amount of force and reach the correct depth to avoid any inadvertent trauma to the

neurosensory retina. Although rare, surgeons sometimes induce a partial or full-thickness macular hole during this process. Even in experienced hands, we see some cases with localized retinal edema or hemorrhage as a result of trauma from the application of force.

Experience helps surgeons become more efficient at this technique, but challenges remain. We sometimes need to pinch several times to lift an edge, particularly in patients with high myopia and/or thinner retinas or patients with retinal detachment and concurrent macular holes. When we cannot grab an edge, we can use a membrane scraper, but often we still cannot grab the edge of the ILM and cleanly peel it away. Now, new advances in forceps are helping me perform ILM peeling with a more efficient, less traumatic technique.

## ADVANTAGES WITH NEW FORCEPS

For the past few months, I've been using the FINESSE® SHARKSKIN® ILM Forceps (Alcon). For me, it has replaced standard ILM forceps for pinch and peel because its unique design supports a different and novel technique. Specifically, the forceps address the need to reduce pressure on the retina while pinching the ILM, as well as the need to more easily make that initial grasp of the ILM for peeling. This reduces the potential risks associated with ILM peeling while improving my efficiency.

SHARKSKIN® forceps have a laser-ablated micro-structure at the edge (Figure 1) that helps in precision grasping. The design increases the coefficient of friction between the edges of the forceps and the ILM, reducing the force needed to grasp an edge.<sup>1,2</sup> In a rabbit model, the average coefficient of friction for SHARKSKIN® forceps was more than 2.5 times greater than that of GRIESHABER REVOLUTION® forceps (Alcon).<sup>2</sup> Instead of pinching, I graze the forceps on the ILM, which quickly gives me an edge, usually on the first try. The process is more controlled with less force and produces more predictable results. The ILM is easy to manipulate. I see

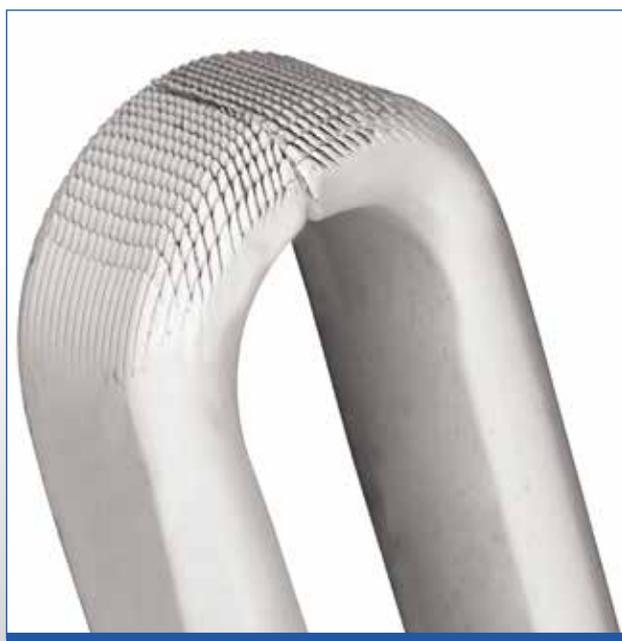


FIGURE 1. FINESSE® SHARKSKIN® ILM Forceps

atraumatic peeling of the ILM with much less shredding in most cases, because we don't pinch and pull on the ILM.

This approach makes surgery easier as well. I find there is reduced indentation on the retina and no inadvertently pinched tissue. It's an efficient and less traumatic way to get an ILM edge.

The SHARKSKIN® forceps are especially helpful for patients who have a retinal detachment and require ILM peeling for associated macular hole or in patients with high myopia. It's very difficult to pinch and peel on a detached retina because we're unable to get any counter-traction. With the new SHARKSKIN® forceps, we don't need to pinch the detached retina to try to get an edge. There's also no need to use a scraper to get an edge for peeling. We perform the peel in a more controlled and optimized way by applying the right force and having a high coefficient of friction to just scrape the retina and get an ILM edge.

## EFFICIENCY AND LEARNING

I'm in private practice, so I'm always looking for ways to make surgery more efficient while providing a positive experience for my patients. I have found that the SHARKSKIN® forceps help me to be more efficient by quickly and safely grasping an ILM edge rather than trying repeatedly with pinch and peel using standard ILM forceps, potentially causing retinal trauma. It also allows me to use just one instrument to both gain an edge and peel in tougher cases.

The SHARKSKIN® forceps are very user-friendly, so it is much easier to teach my fellows to peel an ILM. For example, my first-year fellow had a difficult time with regular forceps, but with the SHARKSKIN® forceps, he was able to get the edge much more easily.

Efficacy, safety, efficiency, and ease of surgery are important to all of us. The design of these forceps helps deliver better results in all of these areas. Because of

## Case Study

### Complex Macular Hole Surgery

One rather unusual case in which the FINESSE® SHARKSKIN® ILM Forceps was essential involved a patient who needed macular hole surgery. The patient had multiple comorbidities, one of which caused him to breathe very heavily. Normally, I would address this issue by using general anesthesia, but his cardiologist said that was not possible due to his health.

As a result, I needed to perform macular hole surgery on the patient while he was breathing very heavily, with his eye moving throughout the procedure. There was no way I could safely pinch and peel the ILM while the eye was moving, because there would be a high risk of damage from pinching the retina. Because I had the SHARKSKIN® forceps, I was able to graze the tip on top of the retina and get the ILM edge more easily in a moving patient and finish the case with a successful outcome.

these advantages, I think we will soon see more surgeons adopt this approach.

### References

1. Alcon, data on file, December 2017.
2. Eckardt C, Paulo EB. Heads-up surgery for vitreoretinal procedures: an experimental and clinical study. *Retina*. 2016;36(1):137-147.

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### GRIESHABER® DSP IMPORTANT PRODUCT INFORMATION

**CAUTION:** Federal (USA) law restricts this device to sale by, or on the order of, a physician.

**INDICATIONS FOR USE:** GRIESHABER® DSP instruments are a line of single-use vitreoretinal microinstruments which are used in ophthalmic surgery, for cases either in the anterior or the posterior segment. The GRIESHABER® Advanced Backflush Handles DSP are a family of instruments for fluid and gas handling in vitreoretinal surgery.

### WARNINGS AND PRECAUTIONS:

- Potential risk from reuse or reprocessing GRIESHABER® DSP instruments include: foreign particle introduction to the eye; reduced cutting or grasping performance; path leaks or obstruction resulting in reduced fluidics performance.

- Verify correct tip attachment, function and tip actuation before placing it into the eye for surgery.
- For light fiber instruments: Minimize light intensity and duration of exposure to the retina to reduce risk of retinal photic injury. The light fiber instruments are designed for use with an ALCON® illumination source.
- Good clinical practice dictates the testing for adequate irrigation and aspiration flow prior to entering the eye. If stream of fluid is weak or absent, good fluidics response will be jeopardized.
- Use appropriate pressure supply to ensure a stable IOP.
- If unwanted tissue gets engaged to the aspiration port, it should be released by interrupting aspiration before moving the instrument.

**ATTENTION:** Please refer to the product labeling for a complete listing of indications, warnings, and precautions.