

# Illuminated Scleral Indentor: A Small Key to Big Efficiency in Vitreoretinal Surgeries

By putting illumination and indenting into one hand, surgeons can work quickly and safely without an assistant.

BY PROF. MATTHIAS BOLZ, MD



When I came to Linz, Austria a few years ago, I was frustrated by thin staffing levels in the operating theater at that time. Without sufficient staff to

assist me, it was difficult to ensure I had someone to help with indentation during a vitrectomy. But as Charles Dickens once said, "Even a heavy door only needs a small key." I asked Oertli if we could design a light that would also indent, so that I could save myself the help of an assistant. The result of that discussion was the ViPer (visible periphery) illuminated scleral indentor by Oertli, a small plastic "key" that opens the door to surgical speed and efficiency (Figure).

## THE "THIRD HAND" FOR CUTTING THE VITREOUS BASE

What are our traditional options for cutting back the vitreous body? We have all needed an assistant to provide a third hand to indent. If that assistant is inexperienced, surgery can take significantly longer or cause complications.

As an alternative to needing an assistant, we can indent from the outside with the strabismus hook and look through the microscope from above without the wide-angle view. This approach has two disadvantages: 1) the patient must be pseudophakic, or else we will injure the back surface of the lens, and 2) if we do this under retrobulbar anesthesia, it is painful for the patient.

Another option is to use chandelier illumination where we put in another trocar while using a classic fixed plug-in light. However, there is a need for an additional trocar and a light cable which reduces the flexibility throughout the surgery.

A final option is to use the ViPer, which



Figure. The ViPer illuminated scleral indentor by Oertli.

simultaneously combines indenting and transscleral illumination of the posterior eye segment. This innovation is a small, strong, plastic part that attaches to the endoilluminator to provide an optimal view of the retinal periphery. The tip is a firm, finely rounded ball, which makes it easy to create a good indentation, so the light can radiate consistently. Remarkably, there is only a 10% loss of light compared to the endoilluminator used inside the eye.<sup>1</sup>

The ViPer also allows an intraocular fundus view in situations when there is no endoilluminator, such as during cataract surgery. Surgeons can check for fragments of the nucleus much more quickly than we could in the past.

## ViPer IN ACTION

In routine procedures and unusual situations, the ViPer has helped me see more

clearly and work more intuitively and efficiently. It offers superior ability to visualize the vitreous base during surgery. For example, in cases of macular hemorrhage, when I inject triamcinolone and approached the edge of the eye with the ViPer, visibility of the vitreous base is excellent, allowing me to cut it back into the periphery.

Where a visible defect is revealed in the upper part of the retina, I inject triamcinolone, attach the ViPer to the endoilluminator, and indent from the outside, giving me a clear display of the defect, so I can cut back the vitreous body. The ViPer makes surgery much faster because I have it in my own hands, so there's no need to keep telling the assistant, "More anterior, more posterior, a little bit farther up," and so on.

With retinal holes, because the ViPer's external indentation is very nicely controlled and efficient, it gives me the

# THE VIPER MADE SURGERY MUCH FASTER BECAUSE I HAVE IT IN MY OWN HANDS. I DIDN'T NEED TO KEEP TELLING THE ASSISTANT, 'MORE ANTERIOR, MORE POSTERIOR, A LITTLE BIT FARTHER UP,' AND SO ON.

advantage of getting around the eye very easily, without the awkward interruption of an assistant accessing the nasal side for indentation. For vitreous detachments, once I inject triamcinolone and stabilize the posterior center of the eye with perfluorocarbon liquid, I can set the ViPer's light source to 100% and slowly cut the vitreous back to the vitreous base, section by section. The endoilluminator verifies that I have removed the vitreous body completely.

Normally, buckle surgery is a cumbersome and tedious procedure. I call buckle surgery with the ViPer "easy buckle." Traditionally, we have had to put on a nonsterile head ophthalmoscope, get a new pair of gloves, move up the table, and stand up. Many doctors have recently switched to setting a trocar and using the endoilluminator to see the buckle directly, but that is not very elegant. Instead, I combined the endoilluminator with the ViPer. My 50-year-old patient had a clear lens and a classic buckle retinal defect at 8 o'clock. Initially, I tried to stabilize it with cryotherapy and gas, but that did not work. With the easy buckle technique I had a direct look with the microscope and noted some bleeding in the defect. Now, I marked one side of the ViPer with the sterile pen, located the defect with the ViPer's other (unmarked) side, and turned the ViPer 180° to mark the defect's exact location. This saved me the trouble of using a headset and getting up, and I did not need to use the endoilluminator alone. The rest of the procedure proceeded as usual, and the eye looked very nice the next day. To view a video of this case, see *Watch it Now*.

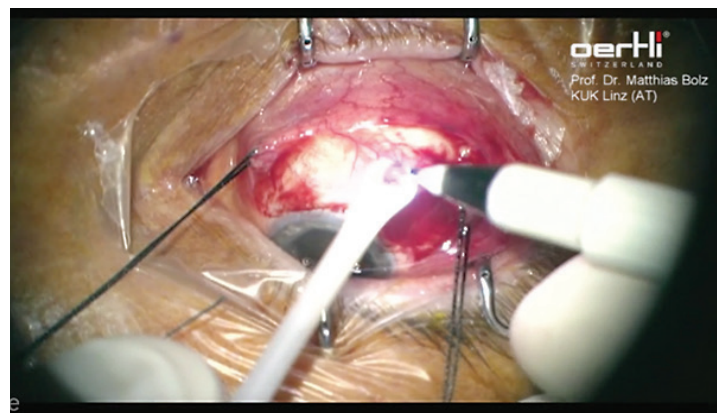
## A VALUABLE NEW OPTION

The ViPer is the only illuminated scleral indenter of its kind. The tool has many advantages from my point of view: it is extremely stable, it is almost impossible to break, and it has pinpoint radiation of light for very even, homogeneous illumination in the eye. It is very easy to use, so there is no lengthy reading or learning curve, and the results and added efficiency speak for themselves. ■

1. Oertli. Data on file. 2019.

### ▶ WATCH IT NOW ◀

#### EASY BUCKLE WITH THE VIPER ILLUMINATED INDENTOR



During buckle surgery, Prof. Matthias Bolz, MD, uses the ViPer illuminated scleral indenter by Oertli to mark the defect's exact location.

▶ [EYETU.BE/MRLAG](https://eyetu.be/mrlag)

#### Prof. Matthias Bolz, MD

- Director, Ophthalmology Clinic, Kepler University Hospital, Linz, Austria
- Professor, Kepler University
- [Matthias.Bolz@kepleruniklinikum.at](mailto:Matthias.Bolz@kepleruniklinikum.at)
- Financial disclosure: Travel grants (Oertli Instrumente AG)