

# Capsule retractors improve challenge of weak zonules during cataract surgery

## Design mimics artificial zonules to help achieve sufficient capsular bag stabilization

Take-home message: Weak zonules are known to add intraoperative complications and affect every step of the cataract procedure. Luigi Fontana, MD, PhD, describes how capsule retractors have helped him tackle this issue in his cataract practice.

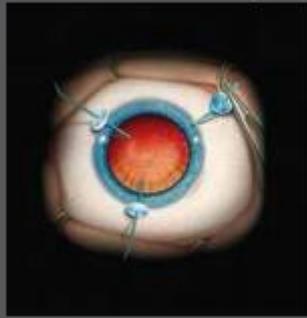
By Luigi Fontana, MD, PhD, Special to *Ophthalmology Times*

**Reggio Emilia, Italy**—Zonular weakness on occasion can be well foreseen before surgery, but most usually has been known to occur unexpectedly.

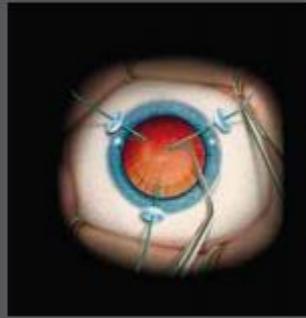
Surgeons typically try to stabilize the capsular bag by inserting a capsular tension ring to reinforce the weak part of the capsular bag in the presence of focal zonular dialysis or weakness. Tension rings can be somewhat difficult to insert in these patients, however, and have often proved inefficient in successfully stabilizing the

zonular capsular complex.

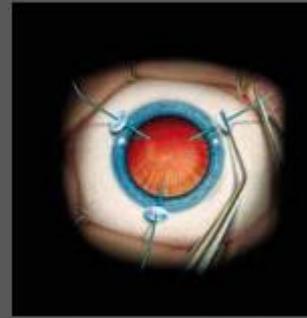
## ***Capsule Retractor Placement***



Place through a 0.8 mm or larger paracentesis.

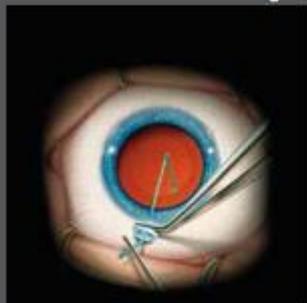


If needed slip the working end under the capsulorhexis.

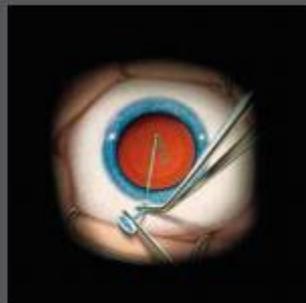


Move the silicone stopper forward and into place.

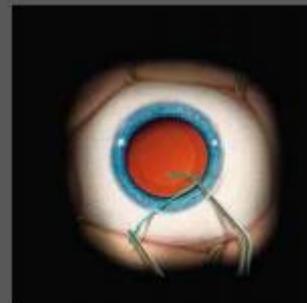
## ***Capsule Retractor Removal***



Move the silicone stopper back and then the entire MST Capsule Retractor centrally to disengage.



Remove the silicone stopper.



Remove from the main incision using forceps and cutting the tail end off if necessary.

Typically iris hooks have been used to support the capsular bag when there have been cases of focal or diffusely loose zonules. However, as the hooked ends are short and flexible, these commonly used iris retractors may tend to slip off the anterior capsular edge during phacoemulsification and provide very little or no support to the equator of the capsular bag.

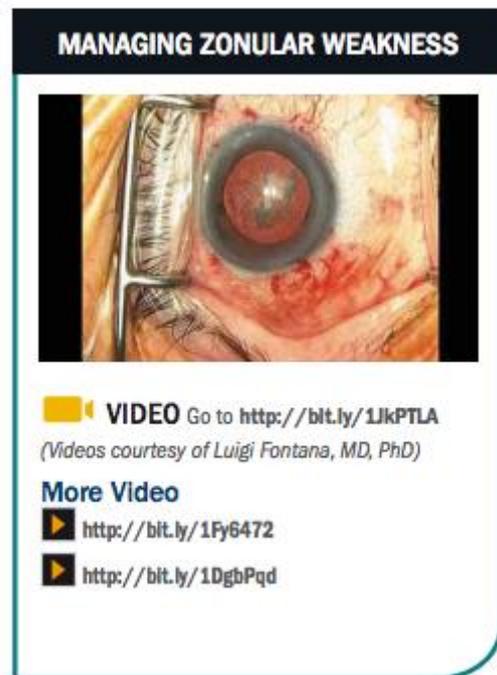
Furthermore, because iris hooks also have sharp ends, this may pose a risk in causing damage by tearing the anterior capsule.

## **Features of capsule retractor**

A useful capsule retractor (MST Capsule Retractor, MicroSurgical Technology) has allowed easier and safer management of weak zonules during cataract surgery in my practice. The shape and elongation of the hooks provide a broader area of contact that gently supports the peripheral capsular bag equator, as well as the capsulorhexis edge. This allows the retractors to mimic and act as artificial

zonules that help the surgeon to achieve sufficient stabilization throughout the entire bag during phacoemulsification and cortical cleanup. This minimizes any hindering during cortical lens material aspiration.

This has not been the case when previously using capsular tension rings, as the retractors allow the surgeon to get the required support vitally needed in the anterior-posterior direction and not trap the cortex.



The capsule retractors also have a smooth looped tip that reduces the risk of puncturing the equatorial capsule or tearing the anterior capsule edge. In addition, a silicone button slides to allow for precise adjustment and monitoring of the degree of required tension during every procedure from patient to patient.

The instrument can also reduce the number of complications occurring in patients presenting with zonular weakness, such as vitreous loss and lens fragment dislocation in the vitreous. This is typically because the surgeon is able to pull the capsule and distribute gentle force in the equator, achieve a broader area of contact with the capsulorhexis margin, and also easily direct and control the tension.

Managing zonular weakness has been improved with the thought of knowing that there are minimal if no intraoperative complications. As every surgeon will lament,

complications in those with zonular weakness during cataract surgery prolongs operating time and further increases the risk of re-operation. Capsular retractors have helped to control and possibly reduce the risk of complication and therefore reduce operating room time with these complicated cases.

An example to illustrate how convenient and easy the retractors have made patient management was a recent case with post-traumatic cataract and 120° zonular weakness with iris dialysis. With the use of the retractors, it was possible to successfully and simultaneously pull the iris remnants aside and stabilize the capsular bag.



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can also  
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In this otherwise-difficult case, the capsule retractors allowed safe and easy emulsification of the hard cataract and preservation of the capsular bag alongside implantation of a capsular tension ring and an IOL in the capsular bag.

Use of the retractors alongside my surgical instruments in particular have made the approach much more proficient and adept in tackling complicated anterior segment surgery cases and managing zonular weakness with ease.

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