The Capsular Tension Ring: Indications for Use

The most appropriate uses for the CTR based on investigative and clinical experience.

BY I. HOWARD FINE, MD

served as Medical Monitor for the US clinical trial of the Morcher GmbH (Stuttgart, Germany) capsular tension ring (CTR), and I have performed approximately 350 surgeries with the device. The experience my colleagues and I gained from the FDA trial gave us surgical insights into using the CTR. Indications for its use presently involve between 2% and 5% of all cataract surgeries.

INDICATIONS

Systemic Conditions

The CTR is indicated for all cases of compromised zonular integrity. This condition appears in many congenital, metabolic, and endocrine disorders such as Marfan syndrome, Marchesani's syndrome, scleroderma, homocystinuria, spherophakia, porphyria, hyperlysinemia, hyperlipoproteinemia, and sulfite oxidase deficiency.

Preoperative Findings

Several preoperative conditions necessitate using a CTR during surgery. All patients with pseudoexfoliation receive a ring, because it makes surgery safer and promotes long-term IOL centration. Patients with high myopia (whose axial lengths are greater than 26 mm) benefit greatly from the use of the device, as do patients who show any phacodonesis at the slit lamp examination. Obvious subluxation of the lens or missing zonules would also require a CTR.

I also use the implant in all postvitrectomy patients, because I believe it helps to fortify the capsule during surgery. Additionally, the device may help guide the final position of the IOL with respect to centration as well as the anterior/posterior locations.

Furthermore, I employ a CTR in all of my patients who previously underwent glaucoma filtration surgery, because most of them have had a shallow or flat anterior chamber postoperatively, which stretches and weakens the zonules. Any patient who has undergone an RK procedure with more than eight incisions also receives a CTR, because in this type of surgery, physicians make the incisions as deep as possible. Thus, a significant percentage of these patients have micro- or macroperforations, which may make the chamber shallow and also stretch and weaken the zonules.

Finally, I use the device in most cases of previous ocular trauma, because there is frequently unknown damage to the ocular apparatus.

Figure 1. Wrinkling of the capsule while it is being pinched by capsulorrhesis forceps is a sign of weak zonular status.

Figure 2. The author demonstrates bimanual, microincisional insertion of the CTR.
Intraoperative Use
One intraoperative signal of weak zonules is wrinkling of the capsule while using the forceps during the capsulorhexis (Figure 1). I also recommend the use of the device in all cases of intraocular zonular damage, such as when the ophthalmologist dialyzes the bag during surgery.

Contraindications
I refrain from using a CTR in cases of questionable capsular bag integrity and for posterior polar cataracts that might have an opening in the posterior capsule.

Implantation Technique
During the FDA trial, my colleagues and I always inserted the CTR after gentle cortical cleaving hydrodissection but prior to phacoemulsification. The ring can be implanted with forceps or with the Geuder AG injector (Heidelberg, Germany) through a 2.5-mm incision. I use an injector to implant the ring and then perform bimanual microincisional surgery. This type of surgery uses two sideport incisions to conduct phacoemulsification. I inject the ring through the left-hand sideport incision (the injector requires a 2.5-mm incision) and control its intraocular movements through the right-hand sideport incision with a Lester hook (Katena Products, Inc., Denville, NJ) (Figure 2).

Sizing
I recommend that axial lengths greater than 26 but less than 30 mm receive a medium-sized CTR. Axial lengths greater than 30 mm warrant a large ring, and those less than 26 mm need a small ring.

Reimbursement for Capsular Tension Rings
By Kevin J. Corcoran, COE, CPC, FNAO
Recently, the FDA approved the capsular tension ring (CTR) developed by Morcher Ophthalmics, Inc. (M ashfield Hills, MA; (800) 932-4202). Prior to this approval, reimbursement was hampered because the product was experimental or investigational in the US.

Filing a claim for this prosthetic device is now possible, but there is no specific code with which to report the CTR. For now, the ambulatory surgery center (ASC) or hospital outpatient department may report the CTR using a miscellaneous HCPCS code: L8699, prosthetic implant, not otherwise specified. The surgeon should not file a claim for the device that is supplied by the facility where the procedure is performed but should instead bill for the surgical procedure alone (ie, CPT code 66982, complex cataract surgery).

Claims for miscellaneous codes generally require supporting documentation to facilitate payment. Useful information includes a description of the device and its purpose, a statement concerning FDA approval, an invoice showing the cost of acquiring the device, and the pertinent regulation that warrants additional reimbursement. Under the Medicare law SSA §1833(i)(2)(A), a prosthetic device such as the CTR is a benefit of the Medicare program, and the pertinent regulation that warrants additional reimbursement is contained in the Medicare Carriers Manual (MCM) §2265.4, which states in part: “Prosthetic devices, other than intraocular lenses (IOLs), whether implanted, inserted, or otherwise applied by covered surgical procedures, are covered, but are not included in the ASC facility payment amount.”

In the future, a new HCPCS code identifying CTRs would help expedite claims processing. Corcoran Consulting Group is assisting FCI Ophthalmics, Inc, with the application process for a new code. Although such an effort has a good chance of success, it is difficult to predict exactly when a new HCPCS code may be published.

Kevin J. Corcoran, COE, CPC, FNAO, is President and Co-Owner of Corcoran Consulting Group in San Bernardino, California. The company specializes in ophthalmic reimbursement issues and consults for FCI Ophthalmics, Inc, among other clients. Mr. Corcoran may be reached at (800) 399-6565; kcorcoran@corcoranccg.com.

Phacoemulsification Technique
In most cases, if I believe that the zonular apparatus is strong enough, I perform horizontal chopping, because it enables me to purchase the nucleus in the golden demarcation ring and lift it when I embed the tip for chopping. I slip the horizontal chopper under the capsulorhexis, into the golden ring, and then I pull the endonucleus toward me as I lift it slightly. At the same time that I embed the bevel-down phaco tip, I hold and chop the nucleus, so as not to transmit a downward force to the capsular bag. Horizontal chopping also retains the vector forces within the plane of the capsule. I usually hydrodissect extremely dense lenses out of the bag before phacoemulsifying them (I prefer bimanual microincisional phacoemulsification).