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BALTIMORE ::

IN THE UNITED STATES, the moderately rare condition endophthalmitis impacts 1 case per 1,100 cataract surgeries. The question may surface: Why should physicians care with a rate that is so low?

“For one, the population at risk is expanding,” explained Oliver D. Schein, MD, MPH, Grossman Professor of Ophthalmology, vice chairman for quality and safety, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore.

With several risk factors—though many are not modifiable—there are strategies to counter the risk factors that really make a difference, Dr. Schein said.

“If you apply the current cataract surgical rate to the projected age distribution of our population, the number of cataract surgeries will at least double by 2020 and almost triple by 2030,” he said. “You’ll be busy—you may not be paid for it, but you will be busy taking care of patients with cataracts.”

WHAT HAS CHANGED?

The disease itself has not changed in any way, but ophthalmologists’ ability to reduce its rate and understand its risk factors has grown substantially, Dr. Schein noted.

He addressed acute endophthalmitis that occurs within the first week or so of cataract surgery. Virtually all (95% plus), according to Dr. Schein, are gram positive.

“We either let these organisms in during surgery or they get in [during] the first 12 to 24 hours,” he said. The rate of the condition has varied according to results of various studies in Europe and the United States, including trials from Denmark and the Netherlands.

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RETINAL GENE THERAPY ENTERING CLINICAL REALITY

ALACHUA, FL ::

Many diseases have a genetic aspect whereby a mutated gene is passed down from generation to generation. Mutated genes may encode abnormal proteins or disable the production of a protein completely, either of which can cause disease. Gene therapy introduces a functional copy of the gene into a patient’s own cells. By correcting the underlying genetic defect that causes disease, gene therapy can potentially provide lifelong clinical benefits after a single administration, according to Jeffrey D. Chulay, MD.

(See story on page 23: Gene therapy)

Drug Therapy

(Continues on page 34: Second look)

Surgeons’ ability to reduce its rate, understand risk factors grows as population at risk expands

Take second look at Endophthalmitis

WHY CONTRAST SENSITIVITY IS MORE THAN VISION METRIC

Contrast sensitivity is a more valuable metric than many ophthalmologists realize, with applications in preoperative and postoperative management of corneal and refractive surgery patients and routine screening of patients’ quality of vision. Contrast sensitivity has perhaps been underused in ophthalmology practices despite the wealth of data on its application in various procedures, according to Gregory J. Pamel, MD, and Prof. Dan Reinstein, MD, FRCSC.

(See story on page 56: Contrast)

“ If you apply the current cataract surgical rate to the projected age distribution of our population, the number of cataract surgeries will at least double United States, including trials from Denmark and the Netherlands.

(Continues on page 34: Second look)
DEEP ANTERIOR LAMELLAR keratoplasty (DALK) should be considered as an early approach for treating refractory Acanthamoeba keratitis with substantial corneal ulceration, said Enrica Sarnicola, MD.

“DALK is a safe procedure with good, long-term graft survival; that is, 99% after 10 years has been reported in the literature,” said Dr. Sarnicola, a resident in ophthalmology, Siena University, Italy. “The procedure has a low rejection rate with a low risk of secondary complications.”

Dr. Sarnicola and colleagues conducted a retrospective, noncomparative study of 12 eyes of 11 consecutive patients who had been diagnosed previously with Acanthamoeba keratitis. All patients had been followed for 2 years.

In these patients, the investigators performed a DALK procedure in 9 eyes with a post-infective stromal scar and in 3 eyes with active infection.

All 3 eyes with active infection were refractory to medical therapy. DALK, as a therapeutic approach, was performed from 30 to 60 days from the time of symptom onset.

All patients had extensive ulcers in the optical zone that exceeded 150 μm, but less than 300 μm in depth, according to Dr. Sarnicola.

The DALK technique they performed included either a cannula big-bubble technique or manual dissection. The DALK diameter was as large as possible; that is, 8.5 mm in 8 eyes and 9 mm in 4 eyes. Interrupted sutures were placed. A histologic examination was performed after the lamellar tissue was removed.

Three drugs were used: amphotericin B, miconazole, and chlorhexidine.

In addition, using a graft with a large diameter in the presence of inflammation in the eye carries a very high risk of rejection and graft failure,” she said. “Therefore, delaying the surgery is the last option.”

By the time the surgery was performed, the full corneal thickness had become infected. Five days postoperatively, endophthalmitis developed, which required vitrectomy. One month later, a fungal keratitis infection required a second penetrating keratoplasty. However, the graft was rejected, and a retinal detachment developed in addition to secondary glaucoma, limbal deficiency, and perforation. Ultimately, the eye was enucleated, Dr. Sarnicola said.

In another case, a 15-year-old girl who wore contact lenses was diagnosed late with biopsy-confirmed acanthamoeba keratitis. She was treated with targeted therapy that included topical polyhexamethylene biguanide, hexamidine, and chlorhexidine.

However, despite treatment the lesion enlarged, and intense pan-nus and deep stromal vascularization developed. The vision decreased to counting fingers.

Therapeutic DALK was performed early using the big-bubble technique. A 9-mm graft was applied centered on the infection.

“One year postoperatively, the visual recovery was good at 20/30,” Dr. Sarnicola said. “The acanthamoeba keratitis did not recur. The endothelial cell count is good and stable.”

In acanthamoeba infections, an early DALK procedure must be considered in cases of acanthamoeba keratitis refractory to medical therapy with substantial optical zone ulceration, she noted.

“The only caveat is that the procedure should be performed by highly experienced surgeons with low rates of conversion to penetrating keratoplasty,” Dr. Sarnicola said.