GLAUCOMA AND CATARACT
Combined and sequential procedures both have their indications
by Roibeard O’hEineachain in Warsaw

Combined and sequential phacoemulsification and trabeculectomy both have their advantages and disadvantages, but there is a growing consensus that there are specific indications for both approaches, according to two discussants in a debate on the topic held at the 17th ESCRS Winter Meeting.

“The number of patients needing surgery for both cataract and glaucoma is likely to increase as life expectancy increases. People have also come to expect a better quality of life and many would prefer treatment of both their glaucoma and cataract in one procedure rather than two,” said Tomasz Zarnowski MD, chair of ophthalmology, Medical University Lublin Poland.

One of the disadvantages of the combined phacoemulsification and trabeculectomy approach is that it is inferior to trabeculectomy alone in terms of IOP reduction, as several studies have demonstrated. For example, in one well-conducted trial, the mean IOP fell by only 6.7 mmHg in eyes that underwent the combined procedure, compared to 11.4 mmHg in eyes that underwent trabeculectomy alone (Lochhead et al, Br J Ophthalmol 2003:87: 850-852).

On the other hand, he noted that a study he and his associates conducted indicates that much of the benefit gained from first performing trabeculectomy alone will be lost if the patient later requires a cataract procedure. The study showed that in 50 patients who had previously undergone trabeculectomy, cataract surgery resulted in a mean increase in IOP of 2.0 mmHg at six months, one year and 18 months.

“It’s not just a matter of pressure, but also the morphology of the bleb which deteriorates and flattens after phaco in eyes that have undergone previous trabeculectomy,” Dr Zarnowski said.

Patient selection
The ideal candidate for a phacotrabeculectomy procedure would be an older patient aged around 80 years with fairly advanced glaucoma and significant nuclear cataract. The cataract should be an otherwise simple case, with a wide pupil, a good conjunctiva and preferably the eye should have not undergone previous surgery.

The surgeon performing the procedure should be skilled in both glaucoma and cataract surgery. Those who feel they lack the necessary expertise should probably just perform the cataract procedure and refer the patient on for the glaucoma surgery. The centre where the patient undergoes the surgery must also be capable of undertaking the demanding follow-up such cases require.

He noted that in a study he and his associates conducted involving 75 eyes of 64 patients who underwent one-site phacotrabeculectomy plus mitomycin C, more than 90 per cent of patients maintained a 30 per cent reduction in IOP at five years’ follow-up.

The mean number of IOP-lowering medications patients were using fell from 1.6 before surgery to 0.59 at 12 months follow-up. However, by five years the number of medications needed rose to a mean of 1.15.

Combined approach
One reason to consider a sequential approach in eyes with glaucoma and cataract is that cataract surgery alone provides a sufficient IOP reduction in some cases, especially those with angle closure glaucoma and those with early stage of primary open angle glaucoma, said Ewa Mrukwa-Kominek MD, PhD, Department of Ophthalmology, Medical University of Silesia, Katowice, Poland. She noted that in a study she and her associates conducted involving patients with primary angle-closure glaucoma who underwent phacoemulsification, mean IOP fell from a preoperative value of 19.7 mmHg to 15.5 mmHg. In addition the mean number of IOP-lowering medications the patients required fell from 1.9 to 0.5.

“Cataract surgery not only eliminated pupillary block, but also attenuated any anterior positioning of the ciliary process,” Prof Mrukwa-Kominek said.

In eyes with open-angle glaucoma, cataract surgery reduces IOP by 1.0 to 3.0 mmHg. In her own research phacoemulsification was at its most effective in lowering IOP among those that had the highest IOP.

That is, those with the highest preoperative range of IOP, 21.0 mmHg to 30 mmHg had a mean reduction of 27 per cent in IOP at the end of the study. By comparison, those with IOP of 15 mmHg to 17 mmHg Mercury had only 10 per cent reduction in IOP. Eyes of pseudoxefoliation also had a greater than average drop in IOP following cataract surgery.

Patients in whom glaucoma surgery alone would most likely be the best option are those with a high amount of optic nerve damage and visual field loss but without significant lens opacity, she said.

She noted that the consensus of the World Glaucoma Association is that cataract patients with mild-to-moderate glaucoma that is adequately controlled with one to two drugs should undergo phacoemulsification alone.

However, those with advanced glaucoma and early to mild-to-moderate cataract should undergo trabeculectomy first followed by cataract surgery a minimum of six months later. Uncontrolled glaucoma or controlled glaucoma requiring more than two drugs together with cataract patients can be an indication for phacotrabeculectomy.

“A careful history with thoughtful and thorough clinical assessment with the aid of emerging technologies and carefully planned surgical steps and a fully informed consent process will increase the chance of a satisfactory outcome for the majority of patients,” Prof Mrukwa-Kominek added.