Cheryl Guttman
in Paris

MECHANICAL stretching of a small pupil in eyes undergoing phaco-emulsification can be done safely and with minimal patient discomfort using topical anaesthesia alone, according to Paul O’Brien FRCSI, Mater Misericordiae Hospital.

Speaking at the XXII Congress of the ESCR, Dr O’Brien presented the findings from a trial that included 26 eyes of 25 patients operated on at two hospitals in Dublin. Patients received proparacaine 0.05% (Proxymetacaine) preoperatively for topical anaesthesia. Surgeons performed pupil stretching with the three-armed Beehler pupil dilator.

The pupil stretching was effective in significantly increasing the pupil diameter -- mean diameter increased by about 50% from 4.3 mm to 6.3 mm. No complications occurred intra- or postoperatively, and no patient required supplemental anaesthesia to complete the surgery.

Each participant was asked to use a 0 to 10 visual analogue scale (0 = no pain, 10 = the worst pain imaginable) to rate pain severity following instillation of the topical anaesthetic and immediately after pupil stretching. In addition, patients were asked at the end of the procedure to rate overall pain of the surgery.

Results from the pain score ratings showed the mean score after pupil stretching was 1.63 (range 0-7) and was numerically lower than the mean score after instillation of proparacaine (2.02, range 0-4). The mean values were not statistically different.

“Phacoemulsification is routinely performed under topical anaesthesia, and it is not uncommon to encounter patients who need pupil stretching because of pre-existing small, poorly dilating pupils. This study indicates that mechanical pupil stretching can be performed without causing significant discomfort in patients undergoing phacoemulsification with only topical anaesthesia. In fact, the level of discomfort reported by patients on average appears to be no worse than that experienced after instillation of the drops for topical anaesthesia,” Dr O’Brien said.

Dr O’Brien performed all surgeries for patients enrolled at Mater Misericordiae Hospital and William Power FRCS performed all surgeries for patients enrolled at the Royal Victoria Eye & Ear Hospital. The patients represented a relatively old population – with a mean age was 79.7 years, ranging from 65 to 89 years. Both genders were equally represented.

The mean duration of surgery was 25 minutes (range 12-37 minutes). The mean overall pain score based on the assessments made at the end of the procedure was 2.46 (range 0-8). In correlation testing, there was no significant relationship between the change in pupil size and the pain score rating after pupil stretching.

“In our study, patients whose pupils were stretched more were not more likely to report a higher pain score than their counterparts whose pupils were stretched by a smaller amount,” Dr. O’Brien said.

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