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The effect of cataract surgery on static and dynamic pupillary characteristics

Poster Details

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Abstract Details

Purpose:

To investigate the effect of uneventful cataract surgery on static and dynamic pupillary characteristics and to compare these results with those of unoperated fellow eye.

Setting:

Ulucanlar Eye Training and Research Hospital, University of Health Sciences, Ankara, Turkey.

Methods:

Patients with no known systemic or ocular disease or trauma history besides unilateral cataract and who were planned to have phacoemulsification surgery were recruited for this prospective study. After detailed ophthalmological examination, all patients underwent pupillometry measurements by using an automatic pupillometry system (MonPack One, Metrovision, France) before and one-month after the surgery. Static [scotopic (0.1 cd/m²), mesopic (1 cd/m²), low photopic (10 cd/m²) and high photopic (100 cd/m²) pupil diameters] and dynamic (amplitude, latency, duration and velocity of pupil contraction and latency, duration and velocity of pupil dilation) pupillometry measurements were obtained and compared with the unoperated fellow eye.

Results:

Twenty patients with a mean age of 65.8 (53-80) years were included in the study. Preoperative dynamic and static pupillometry measurements were similar for both eyes (Wilcoxon signed-rank test, $p > 0.05$ for all). High photopic, low photopic, mesopic and scotopic pupil diameters were statically significantly decreased one-month after surgery (Wilcoxon signed-rank test, $p = 0.029$, $p = 0.009$, $p = 0.003$, $p = 0.003$, respectively). Dynamic pupillometry measurements

were similar after surgery (Wilcoxon signed-rank test, $p > 0.05$ for all) except the latency of pupil contraction which was found to be significantly increased (Wilcoxon signed-rank test, $p = 0.047$).

Conclusions:

Cataract surgery seems to decrease pupil diameter in all illumination levels. This reduction should be kept in mind before planning a premium intraocular lens implantation following phacoemulsification.

Financial Disclosure:

None