In vivo confocal microscopy in glaucoma patients after laser peripheral iridotomy
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Purpose: Purpose of this work was to assess how changes in intraocular pressure, the use of topical antiglaucoma treatment and performing laser peripheral iridotomy (LPI) influence the corneal structure in glaucoma patients.

Methods: The study presents an analysis and evaluation of 38 patients (74 eyes). Study group consisted of 19 patients with glaucoma (35 eyes) who underwent laser peripheral iridotomy and a control group of 19 healthy patients (39 eyes). Keratocyte density in the anterior and posterior stroma, as well as the endothelial cell density, pleomorphism and polymegatism were evaluated in the in vivo confocal microscope (CS4 Nidek Technologies, Italy).

Results: Patients in the study group showed statistically significant lower keratocytes density in the anterior (812 ± 35.32 cells/mm² versus 1126.27 ± 33.20 cells/mm² in the control group) and posterior stroma (610.25 ± 16.79 cells/mm² versus 687.35 ± 21.27 cells/mm² in the control group). Comparative analysis of the endothelial cell density, polymegatism and pleomorphism in both groups was statistically insignificant. In the 6-month follow-up in patients after LPI procedure there was a decrease in the mean number of topical antiglaucoma drugs (from 1.29 ± 0.43% to 0.82 ± 0.37% observed, while there were no statistically significant changes in the assessment of keratocytes and endothelial cells. There was no significant correlation between keratocyte density in the anterior and posterior stroma, endothelial cell density, pleomorphism and polymegatism with the patients’ age and number of topical antiglaucoma treatment used.

Conclusions: Glaucoma as a chronic disease as well as the use of topical antiglaucoma treatment can affect the cornea by reducing the density of the keratocytes in the anterior and posterior stroma. Laser peripheral iridotomy in patients with angle-closure glaucoma in terms of its impact on the morphology of the cornea has proved to be a safe procedure which may be beneficial for reducing the amount of antiglaucoma drugs used.

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Effect of Pilocarpine on Lens Parameters in Primary Angle Closure before and after Peripheral Iridotomy
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Purpose: Primary angle closure glaucoma (PACG) is a significant cause of irreversible visual impairment in Asia, and Asians are expected to represent 87% of those worldwide with angle closure glaucoma by the year 2020. Pilocarpine is commonly used in the treatment of this condition; this study looked at the effect of this drug on lens parameters before and after peripheral iridotomy (PI). These parameters include Lens Vault (LV) which has recently been independently associated with angle closure after adjusting for age, gender, anterior chamber depth (ACD), and Lens Thickness (LT).

Methods: Patients with Primary Angle Closure, including suspect and glaucoma statuses (PACS, PAC, and...
Surgical results of eyes with aniridic glaucoma

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Purpose: To report the surgical results of eyes with aniridic glaucoma.

Methods: This study is a retrospective review of medical records for aniridic glaucoma patients who underwent glaucoma surgeries at Hokkaido University Hospital from 1997 to 2014. Seven eyes of four patients were included. Of four patients, two were siblings, one had a family history of developmental glaucoma, and one was diagnosed with WAGR syndrome complicated by Wilms tumor, genitourinary anomalies and mental retardation. A conventional trabeculectomy (CT) was performed on six eyes, and a modified 360-degree suture trabeculectomy (ST) was performed on one eye. One experienced ophthalmic surgeon (S.C.) performed all surgeries under general anesthesia.

Results: The mean age of patients at the first visit was 21.5 ± 33.8 months (range, 1 month to 6 years). Ocular complications during follow-up included uveitis in four eyes of two patients, congenital cataract in five eyes of three patients, and foveal hypoplasia and nystagmus in all eyes. The mean preoperative intraocular pressure (IOP) for the first operations was 33.0 ± 9.4 mmHg (range, 24 to 48 mmHg) and the mean IOP after the primary surgery was 19.8 ± 9.0 mmHg (range, 15 to 40 mmHg). Of seven eyes, three eyes treated first with CT needed reoperations, i.e., two eyes with two CTs and one eye with three CTs in total. The mean IOP at the final visit was 13.6 ± 2.2 mmHg (range, 9 to 16 mmHg). The average decimal best-corrected visual acuity (BCVA) at the final visit was 0.23 (range, 0.05 to 0.5).

Conclusions: In our case series, CT as well as ST effectively controlled IOP for aniridic glaucoma, although the final BCVA was poor because of corneal opacity, cataract and foveal hypoplasia. Further long-term observation is necessary to verify these surgical procedures.

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