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Experimental substantiation of the role of sclera in eye hydrodynamics for the development of surgical methods to reduce intraocular pressure

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The main outflow of watery moisture happens through shlemm the channel and a trabecula. Additional – due to outflow on an uveoskleral way, through an optic nerve, his covers and a cornea. The filtering operations in treatment of primary glaucoma, are based on formation of ways of outflow of intraocular liquid, creating the message of a cavity of the forward camera of an eye with subconjunctival and suprachorioidal spaces. At the same time hypotonia, the ciliochorioidal ablation, a gifema often develop. Not getting antiglaukom interventions providing integrity of a fibrous cover of an eye are safer. Common fault of these operations is not expressed and unstable hypotensive effect. Practice shows that all efforts to improve hypotensive effect the antiglaukom of operations complicate microsurgical technology of interventions and increase injury of fabrics of a drainage zone of an eye. In the subsequent it leads to development of fibrosis in an outflow zone. When progressing glaucoma process the expressed organic changes in the shlemm channel and the trabekula device develop that allows to count on activization of additional ways of outflow of intraocular liquid. About 72% fall to the share of uveoskleral outflow in additional ways (about 14% are the share of an outflow share through a cornea and on covers of an optic nerve equally). We have conducted the pilot studies on the cadaver eyes and eyes of rabbits allowing to track hydrodynamic indicators and morphological changes in intervention zone fabrics before and after not getting resection sklera in a projection of a ciliar body. The resection the skleral of sites on depth 4/5 thickness sklera, 5.0x7.0 mm in size is carried out by a surgical way by means of a knife and the excimer laser with the wavelength of 193 microns. The program allowing to carry out a squared ablation evenly has been developed for the excimer Mikroskan Vizum laser (Russia) deleting fabric sklera on the necessary depth. On the basis of the conducted researches it is developed the technician of a surgical resection sklera, proved efficiency in 81% cases and absolute safety in 100% at 79 patients.

Biography

Elena Korchuganova PhD, senior researcher of the Problem research laboratory of the Dystrophic diseases of the eye and glaucoma, the candidate of medical sciences, an experience of practical activities in ophthalmology of 20 years. She was the chief physician of Ophthalmologic hospital in Moscow. She is the author and coauthor of the scientific publications devoted to glaucoma and author's patents for inventions.

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