

Modern approaches to the treatment of the optic nerve atrophy

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The author investigated the transections of optic nerves obtained during the post-mortem examination of cadavers with ophthalmectomy, which had been performed five years previously.

The investigation was carried out by the atomic force microscopy method. The results of the experiment showed that the optic nerve atrophy was not complete. These findings encouraged the author to investigate the possibility of regeneration of the optic nerve with the help of a helium-neon laser with the output power of 1 mW directed at the optic nerve discs and the transcranial method of application of a helium-neon laser with the output power of 3-5 mW directed at the end lobe of the brain. 480 patients ranging from 1 year to 45 years old with optic nerve atrophy have been treated with the help of this method. Additionally, vasodilating and anticholinesterase drugs have been used. Laser stimulation was used during 10 days, whereas the drug therapy lasted 2-3 months. After 3-5 courses of treatment the visual fields on the temporal side have increased by 20° and from 5° to 10° on the nasal side. The visual function has been partially restored: the appearance of light perception and the ability to differentiate shapes of objects. The visual acuity increased to 20/60-20/125. These positive effects have been observed in 75% of the patients. The obtained results can be explained by the holographic effect. The holographic effect appears when the laser irradiation interacts with the molecular structures of the optic nerve, which is viewed as J. J. Hopfield's neuron network (1982).

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