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Correlation of the intraocular pressure with increased intracranial pressure in rabbits

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Abstract:

Although measurement of intracranial pressure by noninvasive methods has been suggested, but mainly invasive methods are used for this purpose-Increase in episcleral venous pressure can be expected to result in a linear increase in intraocular pressure. Congested ocular veins with capillary leakage and hemorrhage are seen when the ICP is increased, thus theoretically measurement of intraocular pressure can be a procedure for estimation of the ICP. This study was performed to find whether there is any relationship between intraocular pressure and ICP, so we used 12 albino rabbits in two divided groups. Our study was not designed to elucidate the mechanism of change but merely to record any changes observed. All measures except an increase in ICP were applied on the test group as well as on the control group. After general anesthesia with the combination of ketamin, rampune, and pentobarbital a burr hole was made in the lambda region of the skull and a cannula was placed in the subdural space. The ICP in the test group increased up to 15 mmHg and was constant throughout the experiment. Intraocular pressure was measured by Schiötz tonometers after general anesthesia, after cannulation of the skull, and immediately after increasing the ICP which was repeated in 15 minutes interval for 4 hours. There was no statistical difference between the two groups ($P:0.997$). Results show that neither cannulation nor general anesthesia for 4 hours produce alteration in IOP in the control group nor increasing of the ICP to level of 15 mmHg produces any alteration in IOP on the test group.

Keywords:

Intracranial pressure

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