increased IOP within moderate hypothermic cardiovascular procedures. When this happens ONH blood flow decreases substantially. A positive association between ONH blood flow decrease and ECC time increase is also confirmed, thus it is of paramount importance to avoid ECC prolongation even in moderate hypothermic cardiovascular operations. Given that the retina-ONH circulation system is a part of the cerebral one, we infer that similar perfusion changes could be recognized within cerebral microcirculation. What really happens under circumstances of decreased metabolic demands is still debatable especially within blood flow autoregulating tissues, which tolerate several fluctuations of PP.

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eComment: Extracorporeal circulation and ocular/neurological status during heart surgery

Authors: ***Georgios I. Tagarakis***, *University of Thessaly, Larissa, Greece;* ***Fani Tsolaki***, ***Vassiliki Trantou***

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The concept of the study by Nenekidis et al. is interesting [1]. In a philosophical way of speaking, but also based on anatomic and physiological facts, the eye represents a window to the brain. Important findings regarding the ocular fundus can provide useful information concerning brain function and brain disorders. At this point, we would like to make a short remark in regard to the planning of the study. As a part or continuation of the study, it would probably be of some value to perform the same measurements to an analogous group of off-pump operated patients. This would show the exact impact of extracorporeal circulation to the reduction of the optic nerve blood flow in addition to other contributing parameters, such as the influence of the anaesthetic drugs' regimen and intraoperative reduction of systemic blood pressure.

The issue of neurological disorders after heart surgery always remains of cardinal importance for the postoperative course of heart-operated patients.

Reference

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eComment: Optic nerve blood flow measurements during on-pump heart surgery

Authors: ***Fani Tsolaki***, *Department of Ophthalmology, Hippokrateion Hospital, Thessaloniki, Greece;* ***Eleni Gogaki***, ***Chrysanthi Lopatatzidi***, ***Marios E. Daskalopoulos***

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Any innovative technical method that can contribute to the perioperative monitoring of cardiac operated patients is welcome and worthy of mention. We would like to address two practical issues to the authors regarding the mydriasis applied to the patients included in the study.

First of all, did the unilateral administration of tropicamide, which has an active period of four to eight hours, hinder in any way the neurological monitoring of the patients? Were other methods of neurological follow-up, such as intraoperative electroencephalogram, employed for this reason?

Second, tropicamide can cause a transient increase in intraocular pressure and thus a reduced flow to the supplying arteries of the optic nerve. This means that a fraction of the total reduction in optic nerve blood flow can be attributed to the aforementioned pharmaceutical interaction, in addition to the one caused as a result of extracorporeal circulation.

The above comments do not influence in any way the value and innovative character of the study by Nenekidis et al. [1].

Reference

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eResponse: Optic nerve blood flow measurements during cardiac surgery

Author: ***Nikolaos B. Tsilimingas***, *Department of Cardiovascular and Thoracic Surgery, University of Thessaly, Larissa, Greece*

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We would like to respond to the interesting comments made by Tsolaki et al. [1] and Tagarakis et al. [2], regarding our study [3] on optic nerve blood

flow during heart surgery under extracorporeal circulation (ECC). As on-pump surgery is believed to be more hazardous with regard to several categories of perioperative complications, we chose to study patients operated on with ECC. However, the idea of extending the study to include off-pump surgery is very creative and could be a future expansion of the current study. In relation to the effect of the mydriatic drug and the overall control of the patient's neurological status, we have to say that intraoperative EEG monitoring as well as other methods of neurological diagnostics were applied or were at our disposal; as a result we consider the danger of false estimation due to the unilateral mydriasis to be extremely minimized.

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