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Optic chiasm and optic nerve hemorrhages in head trauma

Pavel Timonov, Marin Baltov, Ilia Bivolarski, Kristina Hadjieva, Plamena Dineva and **Antoaneta Fasova**
Medical University-Plovdiv, Bulgaria

Statement of the problem: Fatal head trauma is a major cause of death in children and adults. Postmortem differentiation of non-accidental head trauma from accidental head trauma can be a complicated process.

Methodology and theoretical orientation: Many studies have focused on the importance of optic nerve sheath hemorrhage as a postmortem finding in cases of Shaken Baby Syndrome, but this research has a strong impact on adults. Complete autopsies were performed on 20 adults died of acute intracranial injuries after head trauma induced by acceleration-deceleration forces.

Findings: Optic chiasm and optic nerve hemorrhages were noted in all cases. Their mechanism of production may result from severe rotational and translational acceleration.

Conclusions: Therefore, this investigation should be performed in all autopsy cases where an accidental head trauma is suspected and where there is no reliable history/witnesses, confession or antemortem examination. Moreover in suspected case of subdural hematoma in adults, these findings may be used as an additional method in enabling the establishment of traumatic subdural hematoma from non-traumatic subdural hematoma

Biography

Pavel Timonov is a Chief Assistant Professor at the Department of Forensic Medicine, Medical University of Plovdiv, Bulgaria. He is an Author of more than 40 publications in national and international journals and 50 presentations in scientific conferences concerning Forensic Anthropology, YKL-40 tissue expression, Facial Assessment. Currently he is working on the following research projects: "Cephalometric examination and 3D virtual modeling of the face aiming at construction and visualization of 3D facial statistics and creating cephalofacial database" and "Study on a new prognostic biomarker in severe brain injuries" funded by the National Science Fund of the Ministry of Education, Bulgaria. His research interests are as follows: forensic pathology, forensic anthropology, and sexual dimorphism, and trace evidence, death at car accident, brain injury and brain tumors.

pavelttimonov@yahoo.fr

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