

## Optic Nerve Sheath Measurement in Children with Head Trauma

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**Abstract :** Introduction: Measuring the diameter of the optic nerve sheath is a noninvasive and easy to use imaging technique to predict intracranial pressure in children and adults. The aim was to measure the diameter of the optic nerve sheath in pediatric head trauma. Methods: The study group consisted of 40 children with healthy and 40 patients with head trauma. Transorbital sonographic measurement of the optic nerve sheath diameter was performed. Conclusion: The mean diameters of the optic nerve sheath of right and left eyes were  $0.408 \pm 0.064$  mm and  $0.417 \pm 0.065$  mm, respectively, in the trauma group. These results were higher in patients than in control group. There was a negative correlation between optic nerve sheath diameters and Glasgow Coma Scales in patients with head trauma ( $p < 0.05$ ). There was a positive correlation between optic nerve sheath diameters and positive CT findings, systolic blood pressure in patients with head trauma. The clinical status of the patients at admission, blood pH and lactate level were related to the optic nerve sheath diameter. Conclusion: Measuring the diameter of the optic nerve sheath is not an invasive technique and can be easily used to predict increased intracranial pressure and to prevent secondary brain injury.

**Keywords :** head trauma, intracranial pressure, optic nerve, sonography

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