

LETTER TO THE EDITOR



# Ratio of Optic Nerve Sheath Diameter to Eyeball Transverse Diameter by Ultrasonography to Predict Raised Intracranial Pressure in Traumatic Brain Injury

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Dear Editor,

We read with great consideration the interesting paper by Du et al. regarding the ratio of optic nerve sheath diameter (ONSD) to eyeball transverse diameter (ETD) by ultrasound, utilized as a tool to predict intracranial hypertension in patients with traumatic brain injury [1].

The detection of ONSD increase with ultrasonography to prove intracranial hypertension or other optic nerve diseases has been widely studied. We will avoid to comment on the use of B-scan for such evaluation, which is now well known to be subjective and not very trustworthy due to several reasons [2], and how these measurements should be taken to provide reliable and repeatable results [3]. We would like to comment on the reliability and usefulness of the ONSD/ETD ratio.

First of all, to reliably measure the lateral diameter of the eye, placing the probe in an axial or transverse section, is very challenging, and in some cases impossible. The reason for this is that to get a reliable measurement, the sound beam must be perpendicular to the structure that we are examining to have echoes coming back to the probe. If the sound beam is not perpendicular but almost tangential, as in cases of the lateral wall, most of the echoes will be reflected away and, as shown by the authors' 2b figure [1], the wall will appear very low reflective or

invisible, making the measurement very difficult and subjective.

On the other hand, it has been clearly proven that the ONSD increase alone is sufficient to make a diagnosis of intracranial hypertension [4].

For all these reasons, we see no utility to introduce this index in the clinical practice, but we would like to stress again that the only reliable and repeatable method is the detection of ONSD increase with Standardized A-scan [5].

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#### Conflict of interest

The authors declare that they have no conflicts of interest.

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