Effect of Interscalene Brachial Plexus Block on Intracranial Pressure: Are the Measures of Optic Nerve Sheath Diameter Standardised with B-Scan?

Sir,

We read with great interest the original article by Gundogdu *et al*. about the evaluation of the optic nerve sheath diameter (ONSD) measurement by ultrasound (US) to evaluate the effect of Interscalene Brachial Plexus Block on Intracranial Pressure (ICP).[1] We laud our colleagues for their interesting article, but we would like to make some comments.

In this study, the authors have applied US B-scan technique and the measurements were obtained with a portable US device and a 6-10 MHz linear probe.

B-scan is very sensitive in detecting small optic nerve calcifications as in cases of optic nerve drusen,[2] but it is not so reliable in case of measurements.

We are aware that evaluation of the ONSD by US B-scan has been applied as a non-invasive technique to identify an increased ICP, but unfortunately, a considerable number of artefacts could make that evaluation not strictly accurate.[3]

To avoid these complications, a more accurate investigation could have been achieved with the so-called standardised A-scan technique.[4]

Moreover, the authors have examined the patients putting the probe on closed eyelids. Thus, it is not clear if the eye is in the primary gaze position.

Changing of eye position leads to a variation of the cerebrospinal fluid amount that surrounds the optic nerve and a different ONSD value.

Furthermore, close eyelids cause an attenuation of US, so they lead to a reduction of image quality, with an even more uncertain outcome.

So, it has been recommended to examine all the patients with open eyelids and with eyes in the primary position using the anaesthetic eyedrops and utilising methylcellulose as a coupling medium between the eye and the US probe.[5]

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Mario Graziano, Marco Gioia and Danilo Biondino

Department of Opthalmology, University of Salerno, Salerno, Italy

Correspondence to: Dr. Mario Graziano, Department of Opthalmology, University of Salerno, Salerno, Italy
E-mail: mgraziano@unisa.it

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AUTHOR'S REPLY:

Sir,

We would like to thank you for your interest in our article. To our knowledge, most of the optic nerve sheath diameter (ONSD) measurements were performed in B-scan mode.[1-3] However, A-scan mode is preferred recently, because of some artefacts and blooming problems in B-scan mode. We think the best ONSD examination method is the combined use of A-scan and B-scan. There is a recent article supporting this idea.[4] Unfortunately, our portable US did not have A-scan mode. So, we could not perform ONSD measurements in A-scan mode.

Our patients in the study did not have any sedative agents, and they were cooperative. They had been ordered to look across and not to move their eyes to limit the change of position of the primary gaze. The preferred measurement method includes closed eyelids because of the possibility of eye infection. Furthermore, most of the ONSD measurements were performed in the closed eyelid positions.[5-7]

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Oguz Gundogdu

Department of Anesthesiology and Reanimation, Sivas Cumhuriyet University, Sivas, Turkey

Correspondence to: Dr. Oguz Gundogdu, Department of Anesthesiology and Reanimation, Sivas Cumhuriyet University, Sivas, Turkey
E-mail: droguzgundogdu@gmail.com