



Reply to Letter to the Editor

Reply to Letter to the Editor Regarding Predicting the Optimal Depth of Ultrasound-Guided Right Internal Jugular Vein Central Venous Catheters in Neonates[☆]

Dear Editor:

We thank Dr. Suk Bae Moon for his letter to the editor regarding our article. We would like to point out that the complications mentioned in his letter, such as pneumothorax and hemothorax, are almost exclusively described as complications of puncture using anatomical landmarks.

In our first report of ultrasound-guided access of the right internal jugular vein in a comparable group (a series of 100 neonates) [1], we did not have any of these two complications. Likewise, Di Nardo et al. [2] and Pedicelli et al. [3], and other reports in pediatric patients also corroborated that ultrasound-guided puncture in real-time had another pattern of complications, such as venous hematoma, multipunctures, and failure to catheterize the vein, which have a smaller impact on the patient and a lower incidence than referred [1,4].

In relation to catheters that are unintentionally inserted into atypical veins, Tristo et al. [5] and Li et al. [6] report adult patients. During the neonatal period, only azygos vein cannulation malposition [7,8] has been reported in association with pathologies that increase pulmonary pressure and a probable increase of azygos vein diameter with the subsequent space that allows a catheter greater than 4 Fr like we used in our study. Also, there are only reports of the anterior thoracic vein in adults [5] and none in the neonatal or pediatric period; this is due to the small diameter of this vein in this age group. Special mention should be made of peripherally inserted central catheters (PICCs) that, due to their small diameters (1 or 2 Fr), could be housed in small veins [9].

Finally, we would like to emphasize that as we mentioned in the discussion of our report, *"Furthermore, if the x-ray shows that the tip is deeper than expected, it must be repositioned and will require another x-ray to confirm the position, increasing costs and radiation received by the patient"*. We do not intend to say that the first post-procedure radiograph should not be obtained, but rather that the second x-ray is not necessary because the formula predicts the optimal length of the CVC for right internal jugular vein catheterization.

Therefore, our proposal at this time is to use the formula to place the catheter in the safest position and check its location without complications on the first X-ray.

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[☆] Conflict of Interest: None.