



LETTER TO THE EDITOR

Understanding depth to choose better: Ultrasound and training in pediatric intraosseous access



Comprender la profundidad para elegir mejor: ecografía y formación en el acceso intraóseo pediátrico

Dear Editor:

In response to the letter that Dr López-Herce¹ submitted to your journal in reference to our article,² we wish to thank him for his kind words and his reflections.¹ We wholeheartedly agree on the need to optimize the range of needle lengths available for intraosseous cannulation, in addition to promoting improved selection among the currently available lengths; it would be interesting to open the door to the evaluation of new, intermediate sizes that could be better suited to pediatric anatomy.

We would also like to emphasize that the optimal length does not depend solely on the thickness of the cortical bone, as the thickness of the subcutaneous tissue is a key determinant of the depth of insertion and, consequently, of the success of the procedure. As Dr López-Herce noted,¹ this thickness can be considerable in the lower extremities of infants³ and in patients with overweight or obesity, and ignoring its influence can result in suboptimal needle length selection. Future studies should investigate in depth how these anatomical variables, in addition to age and weight, affect the success of cannulation, and explore the development of adapted needles to minimize the rate of failure and complications.

As Dr López-Herce mentioned,¹ one of the technical limitations of our study² was the inability to measure cortical bone depth and the diameter of the medullary cavity. Still, we consider that this drawback further reinforces the need for additional research in order to characterize the insertion sites for intraosseous access more accurately. In this regard, we agree with him on the considerable potential of sonography,¹ both to estimate the distance between the surface of the skin and cortical bone before insertion and to verify correct placement after insertion. Our experience

with the use of ultrasound for postprocedural verification is still limited, and we consider this an interesting area of research.

Finally, we believe that training in pediatric intraosseous access must evolve beyond the simple technique of “drilling” to also emphasize the importance of optimal needle selection. Currently, clinical simulation, although essential, does not always reflect the variation in subcutaneous tissue and cortical bone that professionals face in real-world practice. Therefore, it is essential to incorporate training scenarios with variable thicknesses.⁴ Similarly, as evidence emerges regarding the utility of sonography, specific modules on the use of ultrasound for assessment of soft tissue thickness and of correct placement can also be added. Updated training would entail instruction on how to choose, evaluate, and confirm to improve the safety and effectiveness of these procedures for pediatric patients.

To conclude, we thank Dr López-Herce for his valuable contributions,¹ which complement and enhance our results. We share his urgency to reassess the current range of needle lengths, consider new lengths, place emphasis on soft-tissue thickness and enhance training through the use of simulation and sonography, integrating these tools in both the teaching of this technique and the verification of its correct implementation. We are convinced that taking these steps would contribute to increasing the safety and efficacy of pediatric intraosseous cannulation.

References

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