



LETTERS TO THE EDITOR

Bias in the interpretation of the transcranial color-coded duplex sonography register[☆]



Factores de confusión en el análisis del registro de ecografía dúplex transcraneal codificado color

Dear Editor,

Arroyo Diez et al. presented an interesting clinical case on a female patient admitted to hospital due to brain hemorrhage with findings of iatrogenic pneumothorax secondary to the catheterization of the central vascular access. The color-coded duplex sonography register (CCDSR) confirmed the lack of diastolic wave, which would be later normalized after the insertion of thoracic drainage.¹ However, we should bear in mind that even though the CCDSR is a valuable ultrasound imaging modality that allows real-time simultaneous 2D study of the brain at bedside, the color visualization of basal arterial and venous vessels, and the doppler spectrum analysis of these vessels, if we want to interpret it correctly it is essential to know the hemodynamic characteristics of the patient.² Unfortunately, this piece of information that we think is inevitable is not mentioned anywhere in the manuscript which conditions the CCDSR register in such a way that it cannot be interpreted in isolation without knowing the patient's hemodynamic situation.

Regardless of the method used by the authors – CCDSR – another valid option would have been to use the transcranial doppler ultrasonography. However, this is a more complex imaging modality because it requires appropriate training to be able to obtain the register and its interpretation. As any other flow imaging modality, it is as limited as the CCDSR, and it requires the patient's hemodynamic stabilization and clinical data such as the patient's fever, anemia, CO₂ levels, among others, to be able to interpret the register obtained correctly.³

We think the following should have been reported as they are important pieces of information while conducting a general physical examination: heart and respiratory rates, oxygen saturation, and the presence of decreased vesicular breath sounds during respiratory auscultation. And, in this case, they are particularly relevant data since they are altered in a great number of patients with tension pneumothorax at presentation.⁴

In sum, although the CCDSR image of the case presented here is interesting, we believe it lacks the minimal information required, so we have to be cautious when it comes to interpreting its results. However, we agree with the authors' message on the need to develop non-invasive imaging modalities, to be used at bedside by intensivists, to have more information on the physiopathological processes that critically ill patients actually go through.

References

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2173-5727/

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[☆] Please cite this article as: Rocchetti NS, Egea-Guerrero JJ. Factores de confusión en el análisis del registro de ecografía dúplex transcraneal codificado color. *Med Intensiva*. 2019;43:255.