

Letter on the Article: Role of Contrast-Enhanced Ultrasound (CE/US) in Paediatric Practice: An EFSUMB Position Statement

Dear Editor,

I have read with interest the EFSUMB position statement concerning the role of contrast-enhanced ultrasound (CEUS) in pediatrics [1].

The authors claim to be able to reduce the use of CT and MRI considerably. This should be the aim of the article. I doubt that this is possible with CEUS while maintaining an acceptable diagnostic/therapeutic standard, especially with regard to masses.

1. Focal liver lesions: in severe cases, the major role of imaging is to accurately define the extent of a lesion in relation to the hepatic lobar anatomy and vascular and biliary structures for pre-operative planning and to monitor tumor response to chemotherapy or radiation (i. e., hepatoblastoma, lymphoma, etc.). CT and MRI are necessary. The article with the largest series does not include malignant lesions, the sensitivity and accuracy are not calculated, the specificity for identifying a benign lesion is 98% and the negative predictive value is 100% [2]. Multifocal lesions in newborns/infants are usually hemangiomas and neuroblastoma metastases. Doppler ultrasound usually allows differential diagnosis.
2. Renal lesions that necessitate CT or MRI are usually Wilms tumors and CEUS plays no role in oncologic protocols. Renal cyst classification with the modified US Bosniak system is not a pediatric problem.
3. Lung CEUS may improve the diagnostic accuracy of grayscale US supplemented by color and power Doppler imaging

for the differentiation of consolidated lung from cavitating pneumonia in children. In this sense, the gold standard is CT and currently does not change management. Therefore, CEUS is useless.

4. The most common adrenal mass in children is neuroblastoma. Staging is based on CT/MRI, metaiodobenzylguanidine (MIBG), bone scintigraphy. In the neonatal period differential diagnosis with adrenal hemorrhage depends on the follow-up.
5. With respect to the spleen, the authors report the differential diagnoses of splenic lymphoma and hemangioma as a suitable indication in children. Lymphomas in children are systemic diseases. Except for in infants, so-called hemangiomas are vascular malformations that are hypervascularized on color Doppler [3]. Lymphatic malformations usually require a complete detailed anatomic assessment.
6. Regarding inflammatory bowel diseases, the ESGAR/ESPR consensus statement concludes that the routine use of contrast-enhanced US (CEUS) is currently not recommended [4].
7. Although not widely available or clinically used, CEUS (CT as the reference standard) has a sensitivity of 92 % and a specificity of 100 % for liver and spleen injuries and 80 – 90 % for renal injuries [5].

I believe that the review of the literature is optimistic and inhomogeneous. In particular, it is evident that the conclusions come mainly from radiological experience acquired on the basis of adults.

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