Radial and Longitudinal Right Ventricular Function in Children

To the Editor:
I read with interest the article “Alternation of Right Ventricular Contraction Pattern in Healthy Children” from Hashimoto and Watanabe.1 This is an excellent report on the current need for more detailed investigation of right ventricular (RV) function. The authors clearly state that the normal RV contraction pattern shifts from radial (by measuring the RV anterior wall displacement [RVWD]) to longitudinal (by measuring the tricuspid annular plane systolic excursion [TAPSE]) direction in healthy children within the first year of age.1 They found that RV stroke volume (SV) is primarily generated by longitudinal contraction in children, but, especially in neonates, the RVSV is supported not only by longitudinal but also by radial contraction.1 I want to highlight that this is the first study in current pediatric RV research to include the RVWD as a parameter of radial displacement. Their findings that the systolic longitudinal RV function parameter TAPSE plays a major role in the generation of RV output is in good agreement with previous studies.2,3 It would be of great interest to include the RV outflow tract (RVOT) systolic function in their research about the relation of radial and longitudinal RV function (eg, by using available normative pediatric data).4 The RVOT SE, when used in combination with the long-axis excursion parameters TAPSE, and tricuspid annular peak systolic velocity (S’),4,5 and maybe also together with the RVWD, provides a comprehensive assessment of RV systolic function. I am curious about the authors’ opinion on possible additional information that could be obtained by using this RVOT parameter. I want to thank the authors for addressing the need for careful and systematic evaluation of the RV in the pediatric population and want to encourage their research with new echocardiographic parameters, such as the RVWD. Their current work will enhance our knowledge about the normal RV functional pattern in childhood.1 I hope that with more and more available normal reference values and Z-scores for the pediatric population that quantification of RV function will become an easy, available tool for all sonographers.

References

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(Released online August 1, 2014)