Pettersen et al document that the right ventricular (RV) contraction pattern alters according to RV hemodynamics.\textsuperscript{1} In other words, the RV maintains stroke volume by adjusting its geometry to the hemodynamics. We proved that this change in the contraction pattern exists in healthy neonates, with approximately 15 mm of tricuspid annular plane systolic excursion.\textsuperscript{2} Although the structure and function of the RV are complex, its muscle fiber architecture is relatively simple. RV muscle fibers are predominantly arranged longitudinally from the tricuspid valve annulus to the apex under normal hemodynamics. However, with an increase in RV dilatation, the muscle fibers change from the longitudinal to a lateral direction to the apex, especially in the neonatal period and in patients with serious medical conditions.\textsuperscript{3} This rearrangement of the RV muscle architecture is considered to cause the change in the RV contraction pattern. We therefore consider it important to measure not only the longitudinal but also the radial contraction for accurate assessment of RV systolic function.

The merit of measuring the RV wall displacement (RVWD) when evaluating radial RV contraction is very simple compared with other methods, such as strain or the strain rate.\textsuperscript{1,4} However, measuring the RVWD using M-mode is susceptible to movement of the whole heart. In addition, the influence of the interventricular septum on RV function cannot be ignored. These 2 problems should be solved in future studies.

References


