Echocardiography in Pulmonary Hypertension

To the Editor:

In their well-elicitated point-counterpoint editorials in a recent issue of CHEST (June 2013), Rudski1 and Rich2 have described some of the advantages and pitfalls of echocardiography in the evaluation of pulmonary hypertension (PH). Although it is true that as practicing physicians and echocardiographers, we find the envelope of tricuspid regurgitation (TR) sometimes hard to evaluate, we have participated in a study on the use of Levovist (Bayer Healthcare Pharmaceuticals), a contrast agent, in the evaluation of systolic pulmonary artery pressure (sPAP) in patients with COPD, a difficult subset of patients to study, with deficient parasternal and apical views.3 We were able to elucidate the TR envelope in 49% of patients before contrast injection and 95% of patients after contrast injection. There was also an increase in the severity of TR after contrast. In those for whom a reliable signal was obtained before and after contrast agent, we detected a significant increase in the sPAP values after contrast (44 ± 10 mm Hg vs 56 ± 15 mm Hg, P < .01). To exclude the possibility that the contrast agent per se could cause an increase in the sPAP, we studied 15 patients in the cardiothoracic postoperative unit with right-sided heart catheters before and after the same contrast agent and found no increase in pressures after injection of contrast (35 ± 10 mm Hg vs 35 ± 9 mm Hg, P = not significant).

The discussion of the pitfalls of echocardiography revolves around the severity of estimated TR. Some of these pitfalls can be overcome by better techniques and careful attention to the interpretation of the numbers. As practicing physicians, we find echocardiography indispensable as a screening tool for patients with clinical features suggestive of PH, but it is ingenuous of anyone these days to claim to accurately make the diagnosis of pulmonary hypertension? Yes. CHEST. 2013;143(6):1533-1536.


It is evident that the noninvasive measurement of systolic PAP is critical in evaluating patients with dyspnea. The basis of this remains an expert, comprehensive transthoracic echocardiogram that uses all available tools (including contrast when needed) to ensure the most accurate and reproducible PAP estimate.

Lawrence G. Rudski, MD
Montreal, QC, Canada