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Lung Ultrasound for COVID-19 Evaluation in the Emergency Department: Is It Feasible?



To the Editor:

Fiala¹ reviewed the emerging literature regarding the correlation of lung ultrasonography with computed tomographic (CT) findings in novel coronavirus (severe acute respiratory syndrome coronavirus 2 [SARS-Cov2]) lower respiratory disease (coronavirus disease 2019 [COVID-19]) and noted the promising utility of lung ultrasonography in the emergency department (ED) evaluation of patients with suspected COVID-19. We agree that lung ultrasonography appears more sensitive for pneumonia than chest radiograph and that it has great potential in early identification and monitoring of disease progression in COVID-19. It could indeed be useful, but are US emergency physicians sufficiently comfortable in the use of lung ultrasonography to make a widespread ED identification strategy feasible?

We know that point-of-care ultrasonography is operator dependent and individual emergency physician comfort level with it varies widely. Studies have suggested that emergency physician use of point-of-care ultrasonography is still limited in North America, particularly in nonacademic centers.^{2,3} To our knowledge, no study has yet gauged US emergency physicians' familiarity with and use of lung ultrasonography specifically. Are US emergency physicians aware of lung ultrasonography as a feasible imaging modality for pneumonia? If they are, what barriers prevent them from applying it as a diagnostic aid?

In March 2020, we surveyed the Emergency Medicine Practice Research Network, a geographically diverse group of American College of Emergency Physicians (ACEP) members from both community-based practices and academic centers. In total, 181 of 835 emergency physicians responded to our survey (response rate 21.7%). Thirty-four percent indicated they were aware of the superior diagnostic utility of lung ultrasonography compared with chest radiography in diagnosing pneumonia. Just 11% regularly considered using lung ultrasonography to evaluate for pneumonia and only 5% regularly used this modality. The only statistically significant predictor of awareness, consideration, or use of point-of-care ultrasonography for the diagnosis of pneumonia was having specific targeted education and training in the application of lung ultrasonography. The availability of ultrasonography (or lack thereof), type of facility, and lack of time were not predictors of nonuse of lung ultrasonography.

Despite the encouraging correlation between lung ultrasonography and CT findings in COVID-19–related pathology reviewed by Dr. Fiala, our survey data suggest that a majority of emergency physicians are not prepared to implement lung ultrasonography–based evaluations. Our findings have identified an important educational opportunity: the need for directed training in lung ultrasonography. Numerous online resources offer educational content for asynchronous learning, but we believe that changes in emergency medicine residency training will have the greatest influence over time. A previous study showed that faculty-guided point-of-care ultrasonographic training was superior to self-guided training in both learner preference and skill acquisition.⁴ Although the 2016 ACEP Policy Statement on ultrasonographic guidelines includes an airway and thoracic section as 1 of the 12 core emergency ultrasonographic applications,⁵ we believe our findings show that a higher standard of lung ultrasonographic training for the identification of pneumonia is warranted for emergency medicine residency training programs. We believe that such enhanced training would hasten the adoption of this rapid, radiation-sparing, useful modality.

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