Ultrasound in Suspected Pulmonary Embolism

To the Editor:

Although we applaud the effort by Koenig and colleagues1 presented in a recent issue of CHEST (April 2014) to transmit the message that point-of-care ultrasonography may help to avoid unnecessary CT pulmonary angiography (CTPA) in patients with suspected pulmonary embolism (PE), we wish to raise a few concerns regarding the study. We believe the fact that only 12 patients (12.5%) undergoing a CTPA had a PE diagnosed reflects poor clinical decision-making. There was no mention in the article about either the Wells score or revised Geneva score in this cohort, which may have helped us to understand the real need for a CTPA in these patients. As experienced clinicians, we believe that the patterns discovered by the authors on ultrasonography, namely alveolar consolidation, pleural effusion, and pulmonary edema, can be detected by a plain chest radiograph most of the time, and alveolar consolidation and pulmonary edema can be suspected from a proper clinical history and chest examination. The chest radiograph findings are not presented as well.

Some studies have suggested that gestalt assessment may perform better than clinical decision rules, but the low number of PEs detected in this group calls for a better method for selecting patients to undergo CTPA for suspected PE.2 Although lung ultrasonography may avoid unnecessary CTPAs in patients with PE, good clinical judgment may be even more effective.

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References

Response

To the Editor:

We thank Drs Nobre and Thomas for their insightful comments regarding our article.1 They call attention to the fact that the rate of CT pulmonary angiography (CTPA) results that were positive for pulmonary embolism in the study was only 12.5%. This reflects the difficulty that nonpulmonary specialists may have in deciding when to perform CTPA and is not a problem unique to our hospital. Schissler et al2 reported a 4.5% rate of positive CTPA findings at another large hospital in New York City. We agree completely that combining clinical judgment, a formal scoring system, and an alternative imaging study could substantially reduce the number of unnecessary CTPAs. We focused on the utility of ultrasonography as an imaging tool that could be useful in avoiding CTPA and did not include other factors that are useful in determining the need for a CTPA. We believe that in combination with clinical assessment and formal scoring, ultrasonography would have even greater utility. The results, although limited, are supported in a recent article by Nazerian et al.3 Although chest radiography is useful in identifying alternative diagnoses, thoracic ultrasonography has operating characteristics that are superior to chest radiography.4-6 Additionally, it may be used to assess cardiac function and to examine for DVT.

There is no doubt that the low rate of positive CTPA findings is problematic. A key question is how to convince our nonspecialist colleagues to be more thoughtful about their decisions to perform CTPA. The combination of clinical gestalt, formal scoring, and ultrasonography (or chest radiography) would likely greatly reduce the use of unnecessary CTPA.
References


