cially in the case of B-line assessments, as described by Lichtenstein and Mezière.[3] Exploring the lateral and posterior regions aids in recognizing other important lung findings that may contribute to a failed SBT, and this is not necessarily time-consuming in trained hands.

Third, given the alterations in systolic and diastolic function intrinsically related to the critically ill patient and the fact that the echocardiographic data were collected at an excessively distant time for the subjects enrolled in this study, an actual cardiac mechanism could not be entirely ruled out in failed SBT cases.

The take-home message is that we, as practitioners, need to consider lung ultrasound in all the ways it contributes to deterioration, not only interstitial syndrome. Even more importantly, we need to point out the relevance of always integrating lung ultrasound into a multimodality approach and avoiding its use in isolation.

Pablo Blanco
Clínica Cruz Azul
Necochea, Argentina

Gabriela Bello
Hospital Central de las Fuerzas Armadas (DNSFFAA)
Hospital Policial
Montevideo, Uruguay

The authors have disclosed no conflicts of interest.

DOI: 10.4187/respcare.06375

REFERENCES

1. Antonio ACP, Knorst MM, Teixeira C. Lung ultrasound prior to spontaneous breathing trial is not helpful in weaning the decision making process. Respir Care 2018;63(7):873-878.
2. Blumhof S, Wheeler D, Thomas K, McCool FD, Mora J. Change in diaphragmatic thickness during the respiratory cycle predicts extubation success at various levels of pressure support ventilation. Lung 2016;194(4):519-525.
3. Lichtenstein DA, Mezière GA. Relevance of lung ultrasound in the diagnosis of acute respiratory failure: the BLUE protocol. Chest 2008;134(1):117-125.

In Reply:

We thank Dr Blanco and Dr Bello for their interest and comments on our manuscript.[1] Bedside lung ultrasound has become a primary tool in daily ICU management. Indeed, it is our concern that, despite its diagnostic success and accuracy, lung ultrasound does not have the same remarkable impact when it comes to patient-centered outcomes. Laursen et al[2] elegantly showed that point-of-care ultrasonography was superior to standard diagnostic tests alone to establish the correct diagnosis in individuals presenting to the emergency department with respiratory impairment. However, no effects on mortality or length of hospital stay were observed, and there was a significant increase in downstream testing in the point-of-care ultrasonography group.

Certainly we do not rule out the usefulness of echocardiography and lung, diaphragm, and vein ultrasound in many critical and emergency scenarios. Nevertheless, withholding a safe test such as a spontaneous breathing trial up to vanishing of B-lines may be harmful or, at least, pointless. It must be highlighted that simple weaning, which is the most common scenario for an ordinary medical-surgical ICU, comprised 75.6% of our study population.[1]

Regarding pleural ultrasound, a systematic review and meta-analysis was unable to identify any evidence to support or refute the use of pleural drainage to promote liberation from mechanical ventilation.[3] Llamas-Álvarez et al[4] raised applicability concerns of diaphragm ultrasound for weaning management after a large number of studies performed it in populations with higher likelihood of weaning failure.

Because de-aeration found in lower lung regions implies gravitational changes after a few days on mechanical ventilation,[5] our simplified 4-zone approach seemed plausible for the purposes of our study. We did recognize that, based on our data, no inference could be made regarding either entire lung assessment or its integration with echocardiography. We cannot completely agree, however, with the argument that an intensivist could perform this approach accurately without consuming a great deal of time.

We fully agree with the compelling need to explore the full potential of lung ultrasound. We do, however, question whether additional diagnostic testing will truly improve the patient's prognosis, given their current presentation of signs and symptoms.

Ana Carolina Peçanha Antonio
Adult Intensive Care Unit
Hospital de Clínicas de Porto Alegre
Porto Alegre, Brazil

The authors have disclosed no conflicts of interest.

DOI: 10.4187/respcare.06748

REFERENCES

1. Antonio ACP, Knorst MM, Teixeira C. Lung ultrasound prior to spontaneous breathing trial is not helpful in the decision to wean. Respir Care 2018;63(7):873-878.
2. Laursen CB, Sloth E, Lassen AT, Christensen R, Lambrechtsen J, Madsen PH, et al. Point-of-care ultrasonography in patients admitted with respiratory symptoms: a single-blind, randomised controlled trial. Lancet Respir Med 2014;2(8):638-646.
3. Goligher EC, Leis JA, Fowler RA, Pinto R, Adhikari NK, Ferguson ND. Utility and safety of draining pleural effusions in mechanically ventilated patients: a systematic review and meta-analysis. Crit Care 2011;15(1):R46.
4. Llamas-Alvarez AM, Tenza-Lozano EM, Latour-Perez J. Diaphragm and lung ultrasound to predict weaning outcome: systematic review and meta-analysis. Chest 2017;152(6):1140-1150.
5. Antonio ACP, Teixeira C, Castro PS, Savi A, Maccari JG, Oliveira RP, et al. Behavior of lung ultrasound findings during spontaneous breathing trial. Rev Bras Ter Intensiva 2017;29(3):279-286.

Noninvasive Ventilation after Surgical Myocardial Revascularization for Left-Ventricular Dysfunction: A Hypothesis-Generating Study

To the Editor:

Noninvasive ventilation (NIV) affects both the pulmonary and the cardiovascular systems. Indeed, it restores lung volume by opening atelectatic areas, increases alveolar ventilation, and reduces the work of breathing. Moreover, NIV reduces left ventricle afterload and improves cardiac output.

Currently, high-quality evidence supports the use of NIV after cardiac surgery because it significantly improves the patient's oxygenation and decreases the need for endotracheal intubation without significant complications. However, data about improvement of cardiovascular function are scarce, and a mild reduction of the cardiac function due to NIV has been reported. Thus, a judicious application is wise, with constant hemodynamic monitoring in case of reduced left ventricular function. In this line,