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Lung Ultrasound and Chest X-Rays: Together to Improve the Diagnosis

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We enjoyed reading the paper by Vizioli et al. [1], which stresses the complementary role of lung ultrasonography (LUS) in interstitial lung diseases. In such conditions, LUS sensitivity is even higher than that of chest X-rays, although the latter is essential to detect inner chest lesions without adhesion to the explorable pleural surface (including those adherent to the mediastinal and retroscapular pleura), also providing information about other intrathoracic organs such as the heart, mediastinum, esophagus, and trachea. The current results are in line with previous ones obtained by our group on larger samples of patients. By facing LUS with imaging and functional data, we showed that it can display typical (though not disease-specific) features such as diffuse and/or focal thickening of the pleural line, subpleural nodules, and an increase in artifacts [2]. Moreover, in 175 patients with systemic sclerosis who had undergone LUS and chest high-resolution CT [3], we

Fig. 1. This asymptomatic patient had normal pulmonary function tests and no sign of fibrosis at chest X-ray examination. High-resolution CT of the chest showing posterior-basilar slight reticulation of the lungs. Lung ultrasonography (same scan) showing a

slight thickening (3.4 mm) of the pleural line and a single B line using a 5-MHz convex probe as well as a hyperechoic thickening (<2 mm) and no B line using a high-definition 12.5-MHz linear probe.

showed that the thickening of the pleural line (>3 mm) could reliably drive timely high-resolution CT assessment, particularly in the early stages of the disease, even with a possible role in the follow-up (Fig. 1). Instead, the B-line count has an uncertain reproducibility and could be compounded by supervening conditions as for instance heart failure, which is a very common co-morbidity of these patients. In addition, many technical details concerning the setup of the device and potentially affecting the B line results, such as gain, presence or absence of harmonics, or electronic focus of the image, are not mentioned. Finally, the authors did not specify whether the use of linear or convex probes changed the detection of artifacts.

References

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