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IMAGING IN INTENSIVE CARE MEDICINE

# "No dose" lung ultrasound correlation with "low dose" CT scan for early diagnosis of SARS-CoV-2 pneumonia

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A 54-year-old male presented to our hospital with fever, cough, and dyspnea of 4-day duration. Due to suspicion for SARS-CoV-2 infection, a nasopharyngeal sample was obtained for PCR analysis and a low-dose thoracic computerized tomogram scan (CT) was performed. The patient was admitted to the intensive care unit due to oxygenation failure where a lung ultrasonography was performed in close temporal relationship to the chest CT. The results of the chest CT and the lung ultrasonography are presented in Fig. 1. The patient tested positive of SARS-CoV-2 infection.

The contemporaneous scans permit direct comparison of the lung ultrasonography findings with the chest CT. They demonstrate similar findings in terms of location of the areas of pulmonary involvement and the pattern of parenchymal disease. Lung ultrasonography may be considered a useful alternative to low-dose chest CT for diagnosis and management of COVID-19 given its ease of use, repeatability, reproducibility, absence of radiation, and immediate bedside application that obviates the need to transport the critically ill patient to the CT scanner.

The transverse thoracic CT scan image shows multilobar asymmetric lung lesions with peripheral distribution of ground glass opacities, consolidation, and crazy pavement pattern. The lung ultrasonography is presented as thumbnail images that correspond to different areas of the CT scan indicated with long yellow arrows. A and B show A lines (normal aeration pattern); C and D show focal and confluent B lines (interstitial pattern); E and F show thickening and irregularity of the pleural line in association with B lines (suggesting primary lung injury as the cause for the B lines). B lines and pleural irregularity are indicated with short yellow arrows.

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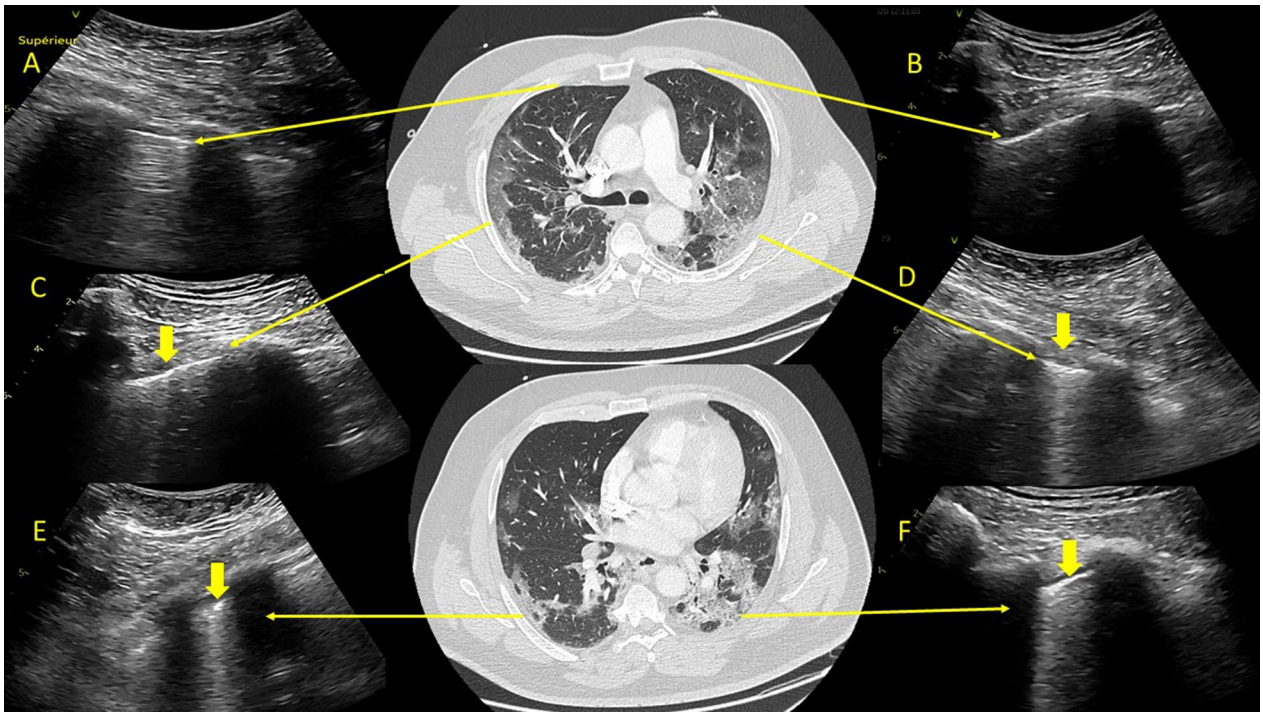


**Fig. 1** Comparison of lung ultrasonography with chest CT scan in a patient with SARS-CoV-2 pneumonia

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**Compliance with ethical standards**

**Conflicts of interest**
Dr Gary Duclos and Dr Alexandre Lopez denied any conflict of interest. Dr Laurent Zieleskiewicz declares a competing interest as an ultrasound teacher for GE (GE MEDICAL SYSTEMS ULTRASOUND) customers. Pr Marc Leone declares a competing interest with Amomed, Aguettant, MSD, 3 M, Pfizer, Aspen and Orion.

**Informed consent**
The present manuscript was written under acceptance of the concerned patient.

## Publisher's Note



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