

## Role of lung ultrasound in patients requiring emergency surgery during COVID-19 Pandemic

### Editor

We read with great interest the letter of Lima *et al*<sup>1</sup>. and we are pleased to add some considerations with regard to the value of lung ultrasound in patients who should be emergently operated on. At present, real-time reverse transcriptase polymerase chain reaction (rRT-PCR) test is required to detect the infection from SARS-CoV-2 but it is time-consuming and requires specialized laboratory and personnel. The use of rapid tests for screening are more efficient in assessing past exposure than present infection. These intrinsic difficulties might be overcome with chest CT which seems to be able to diagnose SARS-CoV-2 pneumonia, screening infected patients from disease-free patients, thus reducing the risk of inter-human in-hospital transmission. However, in life-threatening emergencies, preoperative routine chest CT to detect SARS-CoV-2 pneumonia may jeopardize patient's life delaying surgery

and, therefore, it should not be recommended. Conversely, lung ultrasound might permit to diagnose lung involvement. We recently demonstrated<sup>2</sup>, in fact, that lung ultrasound has a sensitivity, specificity, positive predictive value, negative predictive value of 68%, 79%, 88% and 52%, respectively, and an acceptable diagnostic accuracy in diagnosing SARS-CoV-2 pneumonia. Unfortunately, to complicate this acceptable figure is the possibility that a number of patients might be asymptomatic for pneumonia or have different degree of lung involvement thus acting as a confounder for diagnosis. We are well aware that lung ultrasound has some specific limitations. A pneumonia localization not accessible to ultrasonography can be missed, a patient presenting at a very early stage of lung involvement can be missed, and finally, an eventual overlap with other medical conditions might impair the correct diagnosis of COVID-19 especially in a setting of low disease prevalence. However, we are confident to recommend the use of lung ultrasound in all hemodynamic unstable

patients requiring surgery, and in the presence of pneumonia suspicion, or other medical conditions mimicking SARS-CoV-2 infection, the adoption of this simple and rapid tool might prevent virus spread in emergency situations.

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- 1 Lima DS, Ribeiro MAF Jr, Gallo G, Di Saverio S. Role of chest CT in patients with acute abdomen during the COVID-19 era. *Br J Surg* 2020; **107**: e196.
- 2 Fonsi GB, Sapienza P, Brachini G, Andreoli C, De Cicco ML, Cirillo B *et al*. Is lung ultrasonography a worthwhile procedure for SARS-CoV-2 pneumonia detection? *J Ultrasound Med* 2020. <https://doi.org/10.1002/jum.15487>.