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Editorial

Lessons learned from chest CT in COVID-19



In late December 2019, an outbreak of an unknown disease called pneumonia of unknown cause occurred in Wuhan, China. A few days later, the causative agent of this pneumonia was identified as a novel coronavirus that was further named severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2). In the same time, the pneumonia was named coronavirus disease 2019 (COVID-19) by the World Health Organization. Early reports about COVID-19 pneumonia have inundated the scientific literature. Although rapid publication of new knowledge about the disease is important, one must keep in mind that many articles have been made publicly available before peer review raising some important concerns [1]. It is sometimes hard to distinguish between studies that report minor findings and those that provide information of outmost importance. However, what is known is that we still have a lot to learn about this disease and that the disease is not limited to the lung.

During these tough times, the radiologic community is on the forefront of the battle. The standard of reference for confirming COVID-19 pneumonia relies on microbiological tests such as real-time polymerase chain reaction (RT-PCR) or sequencing. However, these tests may be not available in an emergency setting or convey a high rate of false-negative results. Although restriction may apply, computed tomography (CT) is thus currently used as a pivotal test for the diagnosis of COVID-19 pneumonia. In this issue of *Diagnostic & Interventional Imaging*, Hani et al. have described the typical CT patterns of COVID-19 pneumonia [2]. A variety of CT findings can be present but the most common finding at all stages is diffuse ground-glass opacities, typically with a bilateral and peripheral distribution. One important part of this article is devoted to potential mimickers of COVID-19 pneumonia. We hope that this will be helpful to the readers to make the correct diagnosis because patients with fever and dyspnea do not always have COVID-19 pneumonia.

Differential diagnosis is an actual issue in patients affected by COVID-19. Cellina and Oliva have reported a patient who presented with fever as a single symptom [3]. RT-PCR was positive for SARS-Cov-2. He was initially in good shape but two days later he suddenly developed dyspnea. Chest CT revealed findings consistent with COVID-19 pneumonia but also acute bilateral

pulmonary embolism. This observation is of major importance. At first sight one may consider that acute pulmonary embolism and COVID-19 are a random association. However, this association warrants further attention as not all patients with COVID-19 undergo chest CT with intravenous administration of iodinated contrast material, thus preventing the determination of the actual prevalence of pulmonary embolism in this population. This approach in terms of CT protocol poses several questions that remain unanswered to date. In this regard, it is important to bear in mind that patients with pulmonary embolism have clinical symptoms overlapping with those of patients with COVID-19 pneumonia. In addition, a substantial number of patients with COVID-19 have elevated blood D-dimers, so that this test used alone, in the absence of discriminating levels, does not help identify patients with acute pulmonary embolism, thus reinforcing the role of CT and a careful image analysis in these patients [4].

Finally, Cellina et al. have reported a patient who received tocilizumab as a treatment of COVID-19 pneumonia [5]. They reported objective, favorable changes in CT findings after administration of this humanized recombinant monoclonal antibody that acts as an IL-6 receptor antagonist. When COVID-19 continues to kill many people, this observation brings some hope but, as always, must be further confirmed by well-designed, prospective studies.

Disclosure of interest

The author declares that he has no competing interest.

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