

IMAGING IN INTENSIVE CARE MEDICINE



Imaging changes in severe COVID-19 pneumonia

Wei Zhang* 

© 2020 The Author(s)

A 75-year-old male who was confirmed as suffering of severe COVID pneumonia was transferred to the intensive care unit (ICU) of our hospital—a tertiary teaching hospital of a medical university. He had a history of 10-year hypertension and one-year diabetes. A physical examination unveiled that his body temperature was 35.5 °C, his pulse was 54 beats per minute, his blood pressure was 136/79 mm Hg (noradrenaline 0.2 µg/kg/min), his oxygen saturation was 91% (noninvasive ventilation), and oxygenation index (OI: PO_2/FiO_2) 100 mmHg. He was diagnosed with severe COVID-19 pneumonia combined with acute respiratory distress syndrome (ARDS),

septic shock, and multiple organ dysfunction syndrome (MODS). We focused on the typical imaging feature of chest CT in the patient (Fig. 1). The white “Septal Line” marked by the red arrow in Fig. 1 (Panel a–d) suggests that cellulosic exudation occurred in the surface of lung lobes. In dynamic imaging, these white lines are clearly visible, which provides evidence for us to judge severe COVID-19 pneumonia. In the three-dimensional imaging system, three-dimensional reconstruction of bilateral lung lesions provided a key clue for early identification of the disease. Presently, his condition is relatively stable.

*Correspondence: zhangwei_hxicu@163.com

Department of Emergency and Critical Care Medicine, Affiliated Hospital of Zunyi Medical University, Zunyi Medical University, 149 Dalian Road, Zunyi 563000, Guizhou, China

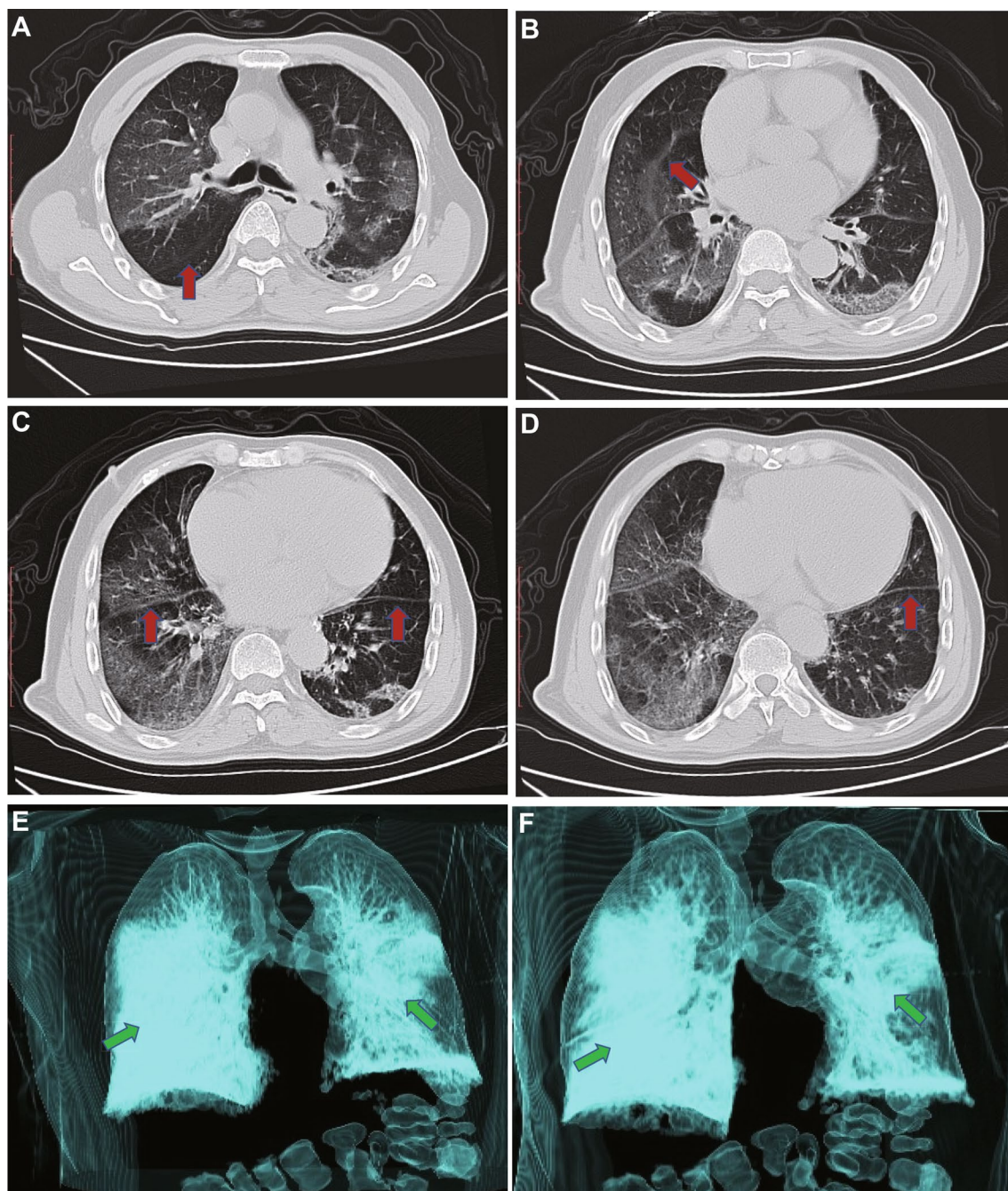


Fig. 1 Chest computed tomography and three-dimensional reconstruction of the patient's lungs. Shown are chest CT scans obtained at admission (onset the fifth day) in the local hospital: Chest computed tomography (CT) scan (**a, b, c, d**) red arrows denote "Septal Line" formed by cellulosic exudation between lung lobes; three-dimensional reconstruction (**e, f**) green arrows denote multilobed lesions of bilateral lungs

Acknowledgements

The author thanks the patient and all the members of his family.

Availability of data and materials

The author stated that all the data and materials were true and available in the study.

Compliance with ethical standards

Conflicts of interest

The author has no conflicts of interest to disclose.

Ethical statement

There are no ethical/legal conflicts involved in the article.

Ethical approval and consent to participate

Written consent from the patient was waived, because of entirely anonymized images from which the individual cannot be identified.

Consent to publish

The author confirms that he has read the Journal's position on issues involved in ethical publication and affirms that this report is consistent with those guidelines.

Open Access

This article is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License, which permits any non-commercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The

images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc/4.0/>.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Received: 15 February 2020 Accepted: 17 February 2020

Published online: 03 March 2020