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Essential image

Lung cavitation in COVID-19 pneumonia

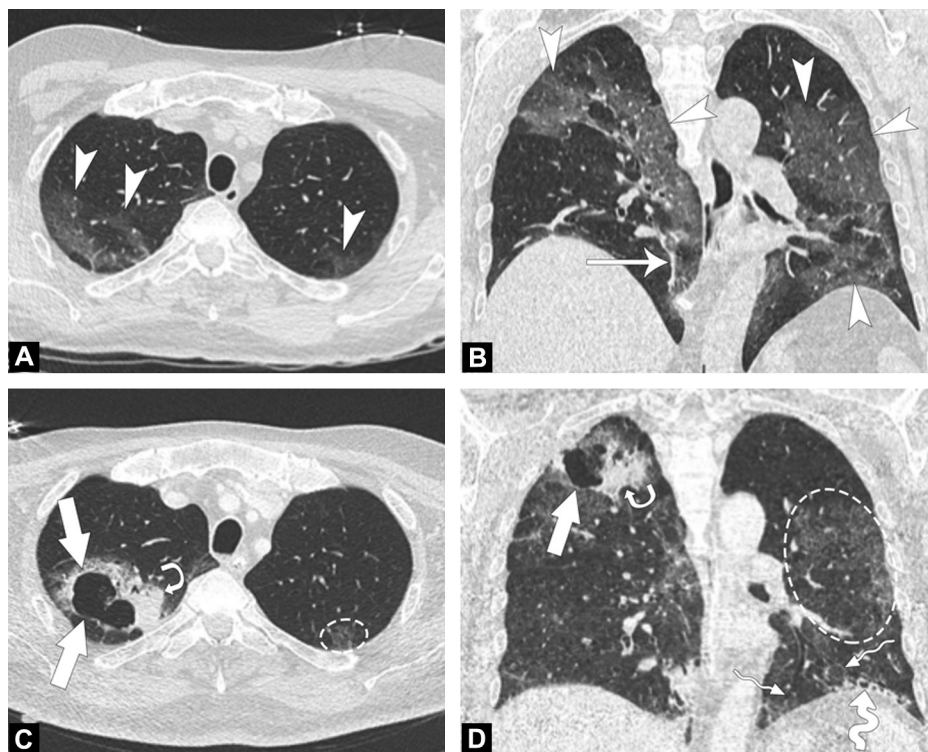
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Fig. 1. Chest CT examinations obtained at day 1 and day 20 in a 62-year-old man with severe COVID-19 pneumonia. A, B, CT images in the axial (A) and coronal (B) planes in lung window obtained at day 1 of hospitalization reveal ground glass opacities (arrowheads) and linear consolidations (arrow). C, D, Follow-up CT images in the axial (C) and coronal (D) planes in lung window at the same level than in A & B, obtained at day 20 of hospitalization in intensive care unit demonstrate a large cavitation (arrows) and evolution towards consolidation of ground glass opacities (curved arrow) in the right upper lobe, interlobular septal thickening resulting in left upper lobe crazy paving appearance (dotted circle), cystic changes (large wave arrow) and traction bronchiectasis (thin wave arrows).

A 62-year-old man was hospitalized in intensive care unit for severe Covid-19 pneumonia confirmed by reverse-transcriptase polymerase chain reaction positivity on oropharyngeal swabs. At initial examination, arterial blood pressure was within the normal range (100/76 mmHg) but tachyarrhythmia (heart rate,

120/min), tachypnea (respiratory rate, 38/min) and low oxygen saturation at 82% were found. Body temperature was 38.1 °C. Supplemental oxygen (15 L/min) was insufficient to restore oxygen saturation above 90% and sedation and orotracheal intubation were required. Laboratory tests revealed hemoglobin concentration of 16.8 g/dL, platelet count of $306 \times 10^9/L$, leucocyte count of $13.5 \times 10^9/L$ and fibrinogen serum level of 6.13 g/L. Procalcitonin serum level was not elevated. Initial low dose computed tomography examination (CT) [1] was strongly suggestive of COVID-19

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pneumonia (Fig. 1A and B). Repeated cultures from bronchoalveolar lavage were positive for *methicillin-sensitive-Staphylococcus-aureus*, *Pseudomonas-Aeruginosa* and *Klebsiella-Pneumonia*. The patient was given meropenem, tobramycin and ciprofloxacin with gradual improvement of symptoms. Follow-up CT examination showed thin-walled large cavity within consolidation of the right upper lobe (Fig. 1C and D). Additional bacteriological tests were positive for *Aspergillus-niger* on bronchoalveolar fluid and aspergillus antigenemia. Antifungal treatment (amphotericin B then voriconazole) was added, followed by a favorable clinical course. Typical CT patterns of COVID-19 pneumonia are well known, but lung cavitation remains uncommon [2]. It might be explained by viral damage to the alveolar walls leading to pneumatoceles. Bacterial and fungal superinfections can also be observed.

Informed consent and patient details

The authors declare that this report does not contain any personal information that could lead to the identification of the patient(s) and/or volunteers.

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Author contributions

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Amine Ammar: conceptualization, writing - original draft preparation, visualization. Jean-Luc Drapé: supervision, writing - review & editing. Marie-Pierre Revel: supervision, writing - review & editing, validation.

Disclosure of interest

The authors declare that they have no competing interest.

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