Radiology: Cardiothoracic Imaging

CASE SERIES

# Coronavirus-HKU1 Pneumonia and Differential Diagnosis with COVID-19

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Conflicts of interest are listed at the end of this article.

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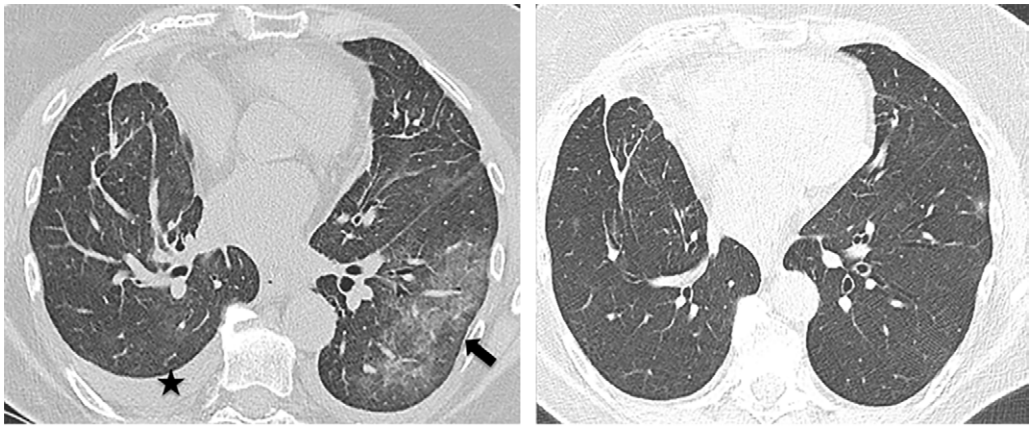
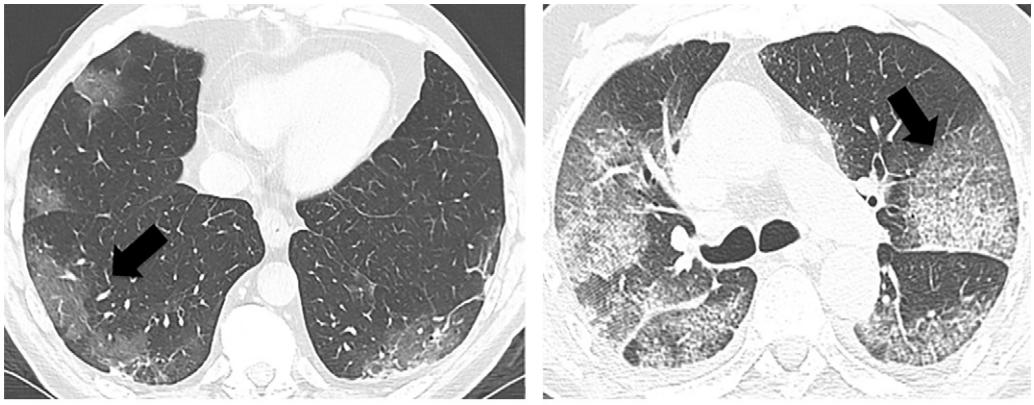


a. b.

**Figure 1:** Images in 74-year-old woman with HKU1 coronavirus pneumonia. **(a)** CT scan performed at admission shows a large area of peripheral ground-glass opacity (arrow) in the lower left lobe and small pleural effusions (star). **(b)** The CT scan performed after 14 days shows almost complete resolution of the imaging findings.



a. b.

**Figure 2:** Images in patient with coronavirus disease 2019 (COVID-19) pneumonia. **(a, b)** Typical CT aspect of COVID-19 pneumonia: initial phase of disease with areas of ground-glass opacity peripherally (arrow in **a**); severe phase of disease with diffuse crazy paving pattern (arrow in **b**). Pleural effusions are absent.

A74-year-old woman, residing in Rome, was admitted on March 4, 2020, with fever and dry cough for 5 days. She had an epidemiologic link with her sister, who tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Laboratorial studies revealed elevated C-reactive protein and normal white cell count with neutrophilia. Chest CT studies obtained at admission showed multiple ground-glass opacities in both upper and left lower lobes, with small pleural effusions (Fig 1a). The patient was negative for SARS-CoV-2 on three polymerase chain reaction (PCR) nasopharyngeal swab tests. Serological tests for SARS-CoV-2 were also negative. A subsequent analysis for other respiratory viruses was positive for human coronavirus HKU1 (HKU1-CoV), and follow-up CT performed after 2 weeks of therapy showed almost complete radiologic resolution (Fig 1b).

Although chest CT has been used for diagnosing coronavirus disease 2019 (COVID-19) (Fig 2), it relies on relatively nonspecific signs, such as multifocal and peripheral ground-glass opacities, consolidations, and crazy paving, which can be also found in other viral pneumonias (1–3). We illustrate a case of HKU1-CoV pneumonia, a

novel group 2 coronavirus discovered in January 2004, which has been also associated with community-acquired pneumonia (4). Given the pandemic setting of COVID-19, the current case underscores the confirmatory role of PCR and the need for considering alternative diagnoses, especially when the full clinical, laboratorial, and radiologic picture does not fit into the most common presentation. Noticeably, neutrophilia and pleural effusions have been infrequently seen at the initial presentation of COVID-19 (5).

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