Radiology: Cardiothoracic Imaging

IMAGES IN CARDIOTHORACIC IMAGING

COVID-19 Infection Presenting with CT Halo Sign

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

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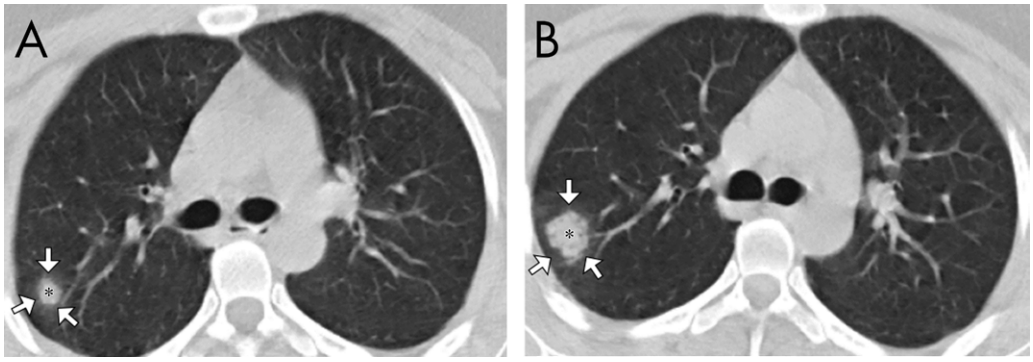

Nonenhanced axial chest CT images in a 27-year-old woman. *A*, Image shows a solid nodule (*) surrounded by a ground-glass halo in the posterior right upper lobe segment (arrows). *B*, Image at the same level as in *A*, obtained 4 days after, shows increase in size of the solid nodule (*), with development of small peripheral air bronchograms.

A 27-year-old woman who worked in Wuhan, China presented to the hospital with a 4-day history of fever and cough. At admission, her body temperature was elevated to 38.5°C (101.3°F) and coarse breath sounds were heard during auscultation. Laboratory studies showed leucopenia, and positive sputum analysis using real-time reverse transcriptase fluorescence polymerase chain reaction confirmed infection by COVID-19 (formerly known as 2019 novel coronavirus [2019-nCoV]) (1,2). Noncontrast chest CTs obtained at admission and after 4 days of hospitalization (Figure) showed a right upper lobe nodule with ground-glass halo, which increased in size between studies, concurrently with the deterioration of clinical symptoms.

A recent case series (3) identified involvement of multiple lobes and predominance of ground-glass opacities as radiologic hallmarks of the outbreak of COVID-19 pneumonia on CT. The CT halo sign has been classically described in hemorrhagic nodules, typically seen in angioinvasive fungal infections, hypervascular metastases, and vasculitides; however, viral infections and organizing pneumonia are known differential causes for the halo sign (4). The present case highlights CT pattern that can be found within the spectrum of radiologic presentations of COVID-19 pneumonia.

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