Radiology

REVIEWS AND COMMENTARY • IMAGES IN *RADIOLOGY*

Chest CT Cinematic Rendering of SARS-CoV-2 Pneumonia

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Software development and access provided in cooperation with Siemens Healthineers.

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

Online supplemental material is available for this article.

Radiology 2022; 303:501 • **https://doi.org/10.1148/radiol.212902** •

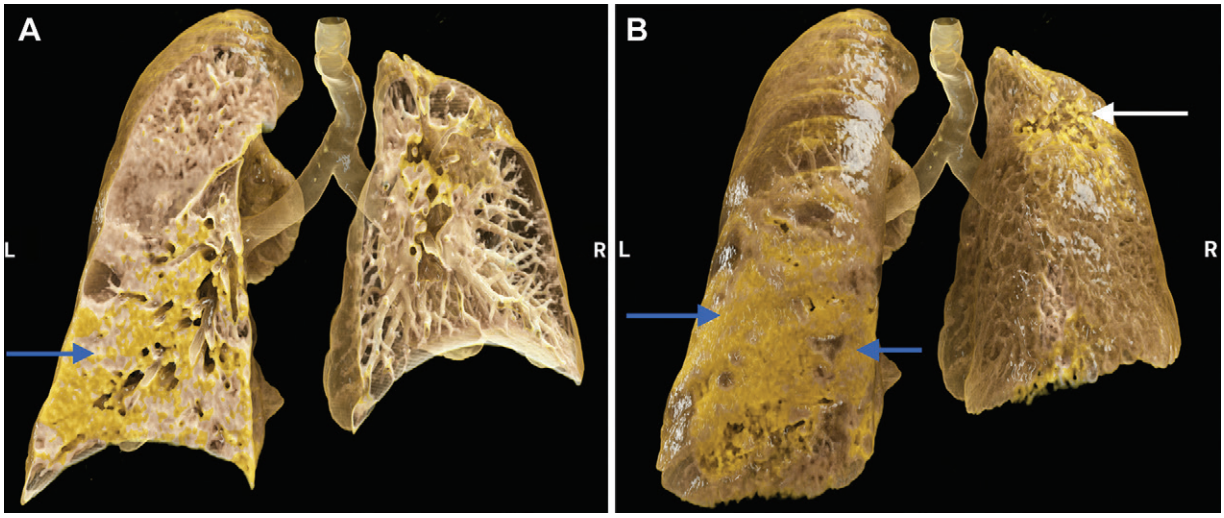

Figure 1: **(A)** Cinematic rendering of a chest CT image in a 60-year-old man who presented with real-time polymerase chain reaction–positive SARS-CoV-2 pneumonia shows a coronal cross-section with consolidation in the left lower lobe (arrow). **(B)** Coronal shaded-surface display after cinematic rendering of image in the same patient, transitioning from denser tissue structures (collapse of pulmonary alveoli) (blue arrows) to less dense areas (transudate fluids) (white arrow).

The SARS-CoV-2 pandemic has spread rapidly throughout the world since its first reported infection in Wuhan, China. Despite the introduction of vaccines for this viral infection, there remains a significant public health risk to the population as this virus continues to mutate. While it remains unknown if these new mutations will evade the current vaccines, there is a possibility that we may be living with this infection for many years to come as it becomes endemic.

Cinematic rendering of CT images is a new way to show the three-dimensionality of the various densities of different pneumonia-affected lung tissues contained in volumetric CT data. We show an example of a patient with polymerase chain reaction–positive SARS-CoV-2 pneumonia using this new technique in the Figure (Figure). This case is from the RSNA International COVID-19 Open Radiology Database (RICORD) data set (1–3). It shows the typical presentation of SARS-CoV-2 pneumonia with ground-glass subpleural opacities that are clearly seen in both parts of the Figure and in the Movie (online). The higher attenuation of lung tissue filled with fluid results in these areas appearing patchy or spongy.

Cinematic rendering is a digital three-dimensional visualization technique that converts gray-scale sections from CT or MRI into colored three-dimensional volumes by means of transfer functions illuminating the reconstruction with physical light simulation. This produces a natural, photorealistic image that is intuitively understandable and can be used for clinical purposes.

Disclosures of conflicts of interest: **F.N.N.** Research student at Siemens Healthineers developing the Cinematic Anatomy application. **M.S.** No relevant relationships.

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