Supine *versus* Prone Positioning in COVID-19 Pneumonia: Comment

To the Editor:

Prone positioning is a simple method to improve oxygenation in ventilated patients with acute respiratory distress syndrome (ARDS).[1] Potential explanations are reduction of ventilation/perfusion mismatch, a more homogeneous distribution of transpulmonary pressure along the ventral-to-dorsal axis, and recruitment of nonaerated dorsal lung regions of the lung, with an increase in lung volume.[2] Many of these mechanisms could also apply to awake patients with ARDS by COVID-19.[3]

Here, we present an image (fig. 1) from a computed tomography performed in a 71-yr-old woman with ARDS from COVID-19 in both supine and prone positioning during awake spontaneous ventilation. Arterial blood gas analysis in the supine position with high-flow nasal cannula oxygen therapy (50% concentration; flow rate, 50 l/min) showed Pa_{O_2}/fractional inspired oxygen tension (F_{IO_2}) of 130, with an improvement in prone positioning (Pa_{O_2}/F_{IO_2}, 238). Bilateral, multifocal, and asymmetric lung disease was present in the supine computed tomography, with a "crazy paving" pattern (ground-glass opacities associated with smooth interlobular thickening) in the upper lobes, and peripheral, heterogeneous, and ill-defined consolidations in the lower lobes. An increase in total lung volume, mainly due to a significant expansion of both lower lobes (fig. 1, *black arrows*),
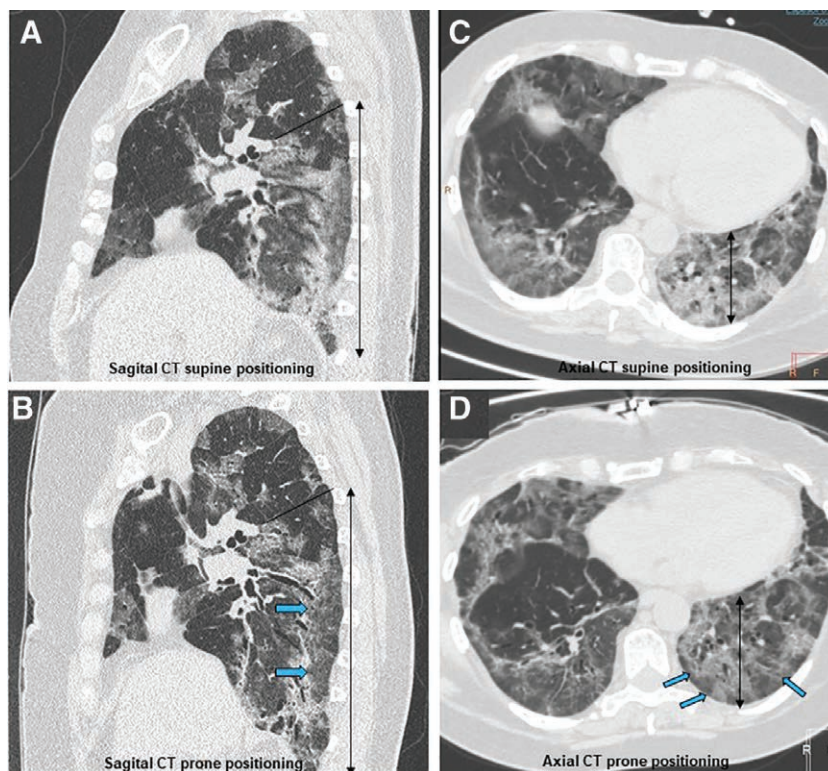

Fig. 1. Chest computed tomographic image of an awake 71-yr-old patient with pneumonia by COVID-19 in supine (*A* and *C*) and prone positioning (*B* and *D*). Sagittal computed tomography (*A* and *B*) shows a slight decrease in attenuation of some of the lung lesions in prone study (*blue arrows*) and an increase in lung volumes of the right lower lobe (*black arrow*; *B*) compared with the supine study (*A*). Axial computed tomography (*C* and *D*) shows an increase in lung volumes of the left lower lobe (*black arrow*) with decrease in attenuation in the prone study (*blue arrows*; *D*) compared with the supine study (*C*). The prone studies (*B* and *D*) show a partial recovery of the aerated lung parenchyma in the left (*B*) and right (*D*) inferior lobe.

was detected in the prone position (2,749 ± 31 ml) compared to supine (2,418 ± 30 ml). This change was accompanied by a moderate decrease in the attenuation of the lesions in the lower lobes (fig. 1, *blue arrows*), the vast majority showing a ground glass attenuation. These findings support the hypothesis of functional lung tissue recruitment in the prone position in awake patients with ARDS by COVID-19.

Competing Interests

The authors declare no competing interests.

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This letter was sent to the author of the original article referenced above, who declined to respond.—Evan D. Kharasch, M.D., Ph.D., Editor-in-Chief.

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