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personal protective equipment, and reducing patient transport for imaging studies. Nurses and respiratory therapists can also be easily trained to perform focused ultrasound assessments.<sup>5,6</sup>

During the current pandemic, disease containment and provider safety are high priorities. We must embrace emerging technologies such as handheld ultrasound devices to allow us to achieve these aims while providing high quality care to our patients.

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## Chest tube with air leaks is a potential “super spreader” of COVID-19



To the Editor:

The COVID-19 pandemic has spread worldwide, causing more than 5.8 million infections at present (May 30, 2020).<sup>1</sup> Infectious aerosols disperse during aerosol-generating procedures such as tracheal intubation.<sup>2</sup> There is a concern that aerosols may also be generated from the chest tube, especially with air leaks, even after placement.<sup>3</sup> We would like to share our experience.

An 85-year-old man was admitted to our hospital with fever, cough, and dyspnea. Chest computed tomography revealed unilateral pleural effusion and no findings of pneumonia. We performed chest tube drainage and diagnosed an acute empyema with a bronchopleural fistula causing persistent air leaks. Three days later, screening RT-PCR assays for COVID-19 were positive for the patient and his 5 nurses. We strictly used personal protective equipment; nevertheless, another 7 people (2 physicians and 5 nurses) associated with the patient were infected with COVID-19. The outbreak of COVID-19 in our hospital was thought to be related to aerosols produced by the chest tube with air leaks. For the outbreak, we could not rule out accidental hospital-acquired infection or community-acquired infection.

Further research is required to determine whether chest tubes with air leaks are a source of infectious aerosols. However, we clinicians should be attentive to the risk of nosocomial infection with COVID-19 due to chest tubes. To prevent aerosols, closing the safety valve of a suction system is proposed.<sup>3</sup> It is important to note that the intrathoracic pressure will increase and tension pneumothorax may occur if the suction system is switched off with the valve closed.

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## Cautious handling of urine from moderate to severe COVID-19 patients



To the Editor,

Since December 2019, coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-