See Article page 381.

Commentary: Veno-venous extracorporeal membrane oxygenation in areas with high coronavirus disease 2019 (COVID-19) burden: Other causes must still be ruled out

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The cardiac surgical community's attention has been highly focused, and rightly so, on the coronavirus disease 2019 (COVID-19) pandemic crisis for the past few months. Our extracorporeal membrane oxygenation (ECMO) expertise has been mobilized to address the patients with the most severe forms of respiratory failure secondary to COVID-19.¹ The clinical picture of severe acute respiratory distress syndrome coronavirus 2 (SARS-CoV-2) infection is deceptively similar to many other known, and some less well described, causes of acute lung injury (ALI).²

In this issue of the *Journal*, Hayanga and colleagues³ reported a complex case of ALI during the early phase of the COVID-19 pandemic. A 30-year-old woman at 33 weeks of gestation, with a high index of suspicion for SARS-CoV-2 infection, presented with a rapidly progressive severe hypoxic ALI refractory to maximal therapy. After failed traditional treatment maneuvers, the patient underwent veno-venous ECMO and immediate safe delivery of the fetus by cesarean delivery. The patient had a history of direct contact with individuals who were positive for SARS-CoV-2, and a radiologic pattern on thoracic

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CENTRAL MESSAGE

Even in patients with a high probability of exposure to SARS-CoV-2, one must be vigilant for other causes of respiratory failure requiring veno-venous ECMO.

computed tomography highly suggestive of COVID-19. However, testing for COVID-19, as well as other microbiologic and viral pathogens, was negative, and further investigation revealed that she had been an active “vaper” up to her hospitalization. The patient ultimately did well; ECMO was weaned and the patient was discharged from hospital without complication.

Amid the new “clinical normal” imposed by the COVID-19 pandemic, the case report by Hayanga and colleagues³ illustrates that cardiac surgeons, who remain the gatekeepers of mechanical circulatory support in most hospital systems, must remain sensitive to the panoply of causes of severe respiratory failure requiring veno-venous ECMO. An emerging indication, unfortunately obscured by the overwhelming global catastrophe of COVID-19, is vaping and e-cigarette-induced ALI, and must be evaluated in the differential diagnosis of severe refractory respiratory failure, even in patients with a high probability of exposure to SARS-CoV-2.

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