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Response



To the Editor:

We thank Pineton de Chambrun et al for their interest in our reported case of systemic capillary leak syndrome (SCLS) associated with coronavirus disease 2019 (COVID-19), and we read with interest their report of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) induced episode of Clarkson's disease in a pediatric patient that they recently reported.¹ They bring up multiple important points and questions that we will clarify and address.

Although we agree that most cases of primary SCLS occur in older patients, there is no defined age distinction between patients with primary or secondary capillary leak syndrome, whether it is associated with a viral infection (most common cause), hematologic malignancies, autoimmune diseases, or medications. The authors are correct in pointing out that, based on the available literature, hemoconcentration is less pronounced in secondary SCLS compared with the idiopathic form²; however, there is no way to distinguish between primary and secondary SCLS based on the level of hemoconcentration and clinical presentation alone. In fact, when a diagnosis of primary SCLS is being made, most patients have evidence of a monoclonal gammopathy, and acute episodes are often recurrent.² In addition, the degree of hypotension, hemoconcentration, and hypoalbuminemia has been associated with the severity of the disease and clinical course of patients presenting with SCLS.³ Our patient did not have any monoclonal gammopathy; this was his only presentation with SCLS, and he did have a clear inciting infection with SARS-CoV-2 that supported secondary SCLS.

Regarding the diagnosis of COVID-19, it was made by reverse transcription polymerase chain reaction for SARS-CoV-2 from both a nasopharyngeal swab and tracheal aspirate at the time of admission. The patient also had evidence of highly elevated inflammatory biomarkers: ferritin of 9,190 ng/mL, C-reactive protein of 15.96 mg/L, and D-dimer >20.0 µg/mL, in the setting of COVID-19.

Finally, we agree that no single therapy has yet showed efficacy during acute SCLS episodes and that supportive care and fluid resuscitation are the cornerstone of treatment during the acute phase, which carries a high mortality rate when patients require ICU admission.⁴ Our patient had a rapidly deteriorating clinical course, despite supportive care and aggressive fluid resuscitation.

There is still much to learn to the various aspects and presentations of COVID-19. Patients with primary or secondary SCLS can have an acute event triggered by SARS-CoV-2 that leads to uncontrolled inflammatory response and profound capillary-leak syndrome. Based on the available information, we believe our reported case had secondary SCLS associated with acute infection with COVID-19.

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References

1. Pineton de Chambrun M, Cohen-Aubart F, Donker DW, et al. SARS-CoV-2 induces acute and refractory relapse of systemic capillary leak syndrome (Clarkson's Disease). *Am J Med*. 2020;133(11):e663-e664.
2. Duron L, Delestre F, Amoura Z, Arnaud L. [Idiopathic and secondary capillary leak syndromes: A systematic review of the literature]. *Rev Med Interne*. 2015;36(6):386-394.
3. Druey KM, Greipp PR. Narrative review: the systemic capillary leak syndrome. *Ann Intern Med*. 2010;153(2):90-98.
4. Pineton de Chambrun M, Luyt CE, Beloncle F, et al. The clinical picture of severe systemic capillary-leak syndrome episodes requiring ICU admission. *Crit Care Med*. 2017;45(7):1216-1223.

What Is Tracheobronchomalacia in Obstructive Lung Disease?



To the Editor:

We read with great interest the article by Shah et al¹ in *CHEST* (June 2020). They report a significant association between use of inhaled corticosteroids (ICS) in higher doses for a longer duration of time with tracheobronchomalacia in patients with COPD and asthma. The authors postulate that ICS could cause tracheobronchomalacia and be a risk for tracheobronchomalacia. That is an important and eye-opening message for clinicians because we occasionally overlook tracheobronchomalacia. Another