

Comment on “Acute Thrombosis of Lower Limbs Arteries in the Acute Phase and After Recovery From COVID-19 Infection”

This original research article, titled “Acute Thrombosis of Lower Limb Arteries in the Acute Phase and After Recovery from COVID-19 Infection” by Sterpetti et al, is a report of a series of 9 patients who developed arterial thrombosis in the context of COVID-19 infection. The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has resulted in 72.6 million cases and 1.6 million deaths as of this writing.¹ Since early in the pandemic, there have been multiple reports of a hypercoagulable state and increased risk of ischemic stroke and venous thromboembolism in patients with COVID-19.^{2,3} Lower extremity arterial thrombosis has been observed anecdotally in the context of COVID-19 but is not a well-described problem. In this article, Sterpetti et al explore the clinical presentation, management, and eventual outcome in 9 patients with acute lower extremity ischemia during or after COVID-19 infection.

The authors are to be commended on this timely report of what is, to my knowledge, the largest series of such patients with arterial thromboembolic phenomena to the

lower extremity secondary to COVID-19 infection. Notably, 6 of the thrombotic events occurred during active infectious symptoms, and the other 3 occurred 41 to 149 days after the index infection. Four patients had thrombosis in the setting of pre-existing atherosclerotic disease within the lower extremity vessels, managed by concurrent endarterectomy or endovascular intervention as appropriate; the other 5 patients had no evidence of peripheral arterial disease and, presumably, suffered from an embolic event from a proximal source. D-dimer and lactate dehydrogenase levels were elevated in nearly all patients; this is difficult to interpret and draw conclusions from, however, without examining patients with no thromboembolic events. After thromboembolism, 7 patients recovered successfully, of which 1 required minor amputation. There were 2 recurrent thromboses. One of these patients survived but required major amputation, and the other deceased with laboratory values suggestive of disseminated intravascular coagulopathy.

Based on these findings the hypercoagulable state associated with COVID-19 infection seems to uncommonly result in lower extremity ischemia secondary to arterial thromboembolism. This risk persists even months after complete symptomatic recovery from COVID-19. As with other reports of thromboembolic events in COVID-19 patients, Sterpetti et al’s findings raise the questions of (1) whether

prophylactic or therapeutic anticoagulation is warranted to prevent such events, (2) which patients would most benefit from antithrombotic therapy, and (3) whether therapy should be continued after hospital discharge. Future research is needed to more closely investigate the incidence and risk factors for, and time course of, arterial and venous thromboembolic events in this patient population. This will help to better inform treatment guidelines and consensus recommendations for management of the hypercoagulable state associated with COVID-19 infection.

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