To the Editor:
There is emerging evidence of skin findings in patients with COVID-19, including pernio-like changes of the toes as well as urticarial and vesicular eruptions. Magro et al reported 3 cases of livedoid and purpuric skin eruptions in critically ill COVID-19 patients with evidence of thrombotic vasculopathy on skin biopsy, including a 32-year-old man with striking buttocks retiform purpura. Histopathologic analysis revealed thrombotic vasculopathy and pressure-induced ischemic necrosis. Since that patient was first evaluated (March 2020), we identified 6 more cases of critically ill COVID-19 patients from a single academic hospital in New York City with essentially identical clinical findings. Herein, we report those 6 cases of critically ill and intubated patients with COVID-19 who developed retiform purpura on the buttocks only, approximately 11 to 21 days after onset of COVID-19 symptoms.

We provided consultation for 5 men and 1 woman (age range, 42–78 years) who were critically ill with COVID-19 and developed retiform purpura on the buttocks (Figures 1 and 2). All had an elevated D-dimer concentration: 2 patients, >700 ng/mL; 2 patients, >2000 ng/mL; 2 patients, >6000 ng/mL (reference, 229 ng/mL). Three patients experienced a peak D-dimer concentration on the day retiform purpura was reported.

Further evidence of coagulopathy in these patients included 1 patient with a newly diagnosed left popliteal deep vein thrombosis and 1 patient with a known history of protein C deficiency and deep vein thromboses. Five patients were receiving anticoagulation on the day the skin changes were documented; anticoagulation was contraindicated in the sixth patient because of oropharyngeal bleeding. Anticoagulation was continued at the treatment dosage (enoxaparin 80 mg twice daily) in 3 patients, and in 2 patients receiving a prophylactic dose (enoxaparin 40 mg daily), anticoagulation was escalated to treatment dose due to rising D-dimer levels and newly diagnosed retiform purpura. Skin biopsy was deferred for all patients due to positional and ventilatory restrictions. At that point in their care, 3 patients remained admitted on medicine floors, 2 were in the intensive care unit, and 1 had died.
Although the differential diagnosis for retiform purpura is broad and should be fully considered in any patient with this finding, based on the elevated D-dimer concentration, critical illness secondary to COVID-19, and striking similarity to earlier reported case of buttocks retiform purpura with thrombotic vasculopathy and pressure injury noted histopathologically, we suspect the buttocks retiform purpura in our 6 cases also represent a combination of cutaneous thrombosis and pressure injury. In addition to acral livedoid eruptions (also reported by Magro and colleagues), we suspect that this cutaneous manifestation might be associated with a hypercoagulable state in some patients, especially in the setting of a rising D-dimer concentration. One study found that 31% of 184 patients with severe COVID-19 had thrombotic complications, a clinical picture that portends a poor prognosis.

COVID-19 patients presenting with retiform purpura should be fully evaluated based on the broad differential for this morphology. We present 6 cases of buttocks retiform purpura in critically ill COVID-19 patients—all with strikingly similar morphologic findings, an elevated D-dimer concentration, and critical illness due to COVID-19—to alert clinicians to this constellation of findings and propose that this cutaneous manifestation could indicate an associated hypercoagulable state and should prompt a hematology consultation. Additionally, biopsy of this skin finding should be considered, especially if biopsy results might serve to guide management; however, obtaining a biopsy specimen can be technically difficult because of ventilatory requirements.

Given the magnitude of the COVID-19 pandemic and the propensity of these patients to experience thrombotic events, recognition of this skin finding in COVID-19 is important and might allow timely intervention.

REFERENCES