Retiform Purpura on the Buttocks in 6 Critically Ill COVID-19 Patients

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PRACTICE **POINTS**

- Retiform purpura in a severely ill patient with COVID-19 and a markedly elevated D-dimer concentration might be a cutaneous sign of systemic coagulopathy.
- This constellation of findings should prompt consideration of skin biopsy and hematology consultation.

To the Editor:

There is emerging evidence of skin findings in patients with COVID-19, including perniolike changes of the toes as well as urticarial and vesicular eruptions.[1] Magro et al[2] 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 NewYork 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.

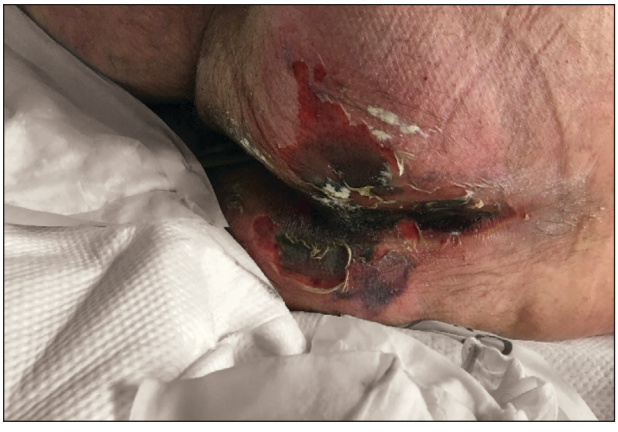

FIGURE 1. Retiform purpura with central necrosis on the buttocks and intergluteal cleft.

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The authors report no conflict of interest.

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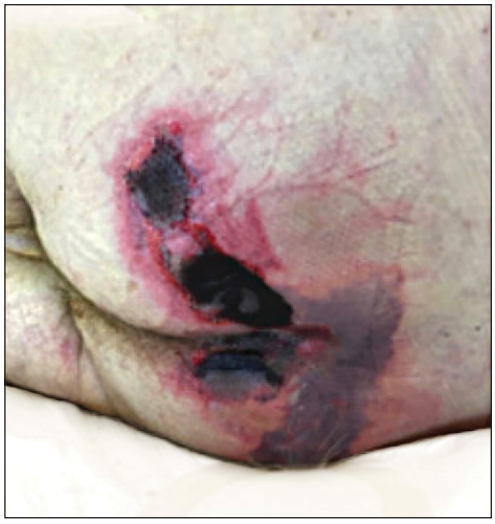

FIGURE 2. Retiform purpura with striking surrounding erythema and central necrosis on the buttocks.

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,[2] 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[2]), 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,[3] a clinical picture that portends a poor prognosis.[4]

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 hypercoaguable 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.

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