Acute Skin Failure Associated with Severe COVID-19

The term “skin failure” refers to skin changes seen toward the end of life or during a period of acute critical illness.1 Resulting ulcers are suspected to occur secondary to multisystem organ failure, hyperperfusion, and “skin death” (a distinguishing characteristic from pressure ulcers). Often appearing as a characteristic butterfly-shaped or pear-shaped lesion, these areas may have rapid progression from skin discoloration to overt tissue necrosis.2 Literature on an association of severe COVID-19 with iatrogenic pressure–associated injuries secondary to prolonged intubation or prone positioning.3 In contrast, skin failure serves as an umbrella term for failure of this organ, including manifestations at the end of life (ie, Kennedy terminal ulcer) and in critically ill patients (acute skin failure), and must be distinguished from pressure injuries. This differentiation is often challenging for providers.4

Our patient developed an ulceration despite frequent repositioning while critically ill with severe COVID-19, consistent with acute skin failure. Although risk factors have been identified, there remains broad underdiagnosis of skin failure as an entity.1 4 In cases of severe COVID-19 requiring intensive care, providers should be vigilant in early identification of soft tissue necrosis, which may act as a heralding sign. Proper diagnosis has significant implications for prognosis and management, and even litigation.5 In an era when frequent resource shortages are present, skin-related complications of COVID-19 may lead to prolonged hospital stays, increased health care costs, and an additional toll on an already strained health care system.

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Fig. 1. Acute skin failure in a critically ill patient with severe COVID-19 was identified with rapid appearance of a butterfly-shaped ulceration in the gluteal area despite frequent repositioning.

Fig. 2. After serial débridement, wound care, and reconstruction with bilateral V-Y fasciocutaneous flaps, the wound was healed at follow-up.

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Epidemiological Research in Plastic Surgery: Barriers and Opportunities for Growth

Plastic surgery is distinct from other surgical specialties as it encompasses a diverse range of pathologies over the entirety of the human body, each with their own unique aspects of care. Conducting innovative research studies with sound methodology and practicing evidence-based medicine supported by data derived from said studies is key to advancing the field of plastic surgery and optimizing patient outcomes.1

Much of plastic surgery research is outcome-based; however, these studies are highly granular and are limited in their ability to extract broader, population-level insights regarding clinical and demographic factors that influence patient care. Epidemiologic studies, by nature of their design, provide this information, but are rarely conducted by plastic surgeons.

Epidemiologic studies primarily serve to describe trends in clinical and demographic data and, as a