

LETTER

Pressure-induced alopecia due to proning in COVID-19

Dear Editor,

Pressure-induced alopecia (PA) includes a group of scarring and non-scarring hair loss disorders that manifest after ischemic injury to the dermis.¹ PA can be seen postoperatively in all patients.² However, in the context of prolonged proning and sedation for treatment of acute respiratory distress syndrome (ARDS) in COVID-19 patients, this condition may become more prevalent.³ Here, we report a case of a COVID-19 patient suffering from PA secondary to proning for ARDS.

1 | CASE REPORT

A 49-year-old male presented with shortness of breath, cough, and fever. Rapid nasopharyngeal COVID-19 testing was positive. His respiratory status rapidly declined, requiring intubation, and emergent admission to the intensive care unit. He was paralyzed and intubated for multiple weeks in the prone position. While in the hospital, the patient had developed an erythematous, indurated nonpainful patch lateral to umbilicus abdominal. Borders were marked for observation with low suspicion for an infectious process at that time. After negative COVID-19 testing and remaining afebrile for 72 h, the patient was discharged to a multidisciplinary rehabilitation center.

While rehabilitating, the patient's rash progressed which prompted further evaluation. A limited abdominal ultrasound showed findings most consistent with cellulitis and showed no evidence of focal fluid collections. The patient was started on cephalexin for 7 days. The erythematous patch then worsened, spreading beyond the superior border and becoming more indurated. He was switched to trimethoprim-sulfamethoxazole for 7 days with only mild improvement. After vancomycin also failed to improve the condition, an

inpatient dermatology consult was requested. A telemedicine consult was performed, and photographs were reviewed of the eruption through the patient's hospital stay. Early images demonstrated well demarcated erythema in areas of pressure. Subsequent photos demonstrated improvement of the erythema and development of alopecia (Figure 1). In the absence of leukocytosis and fever, a diagnosis of PA was given, attributed to prolonged pressure during his intensive care unit course rather than infectious causes, and antibiotics were discontinued.

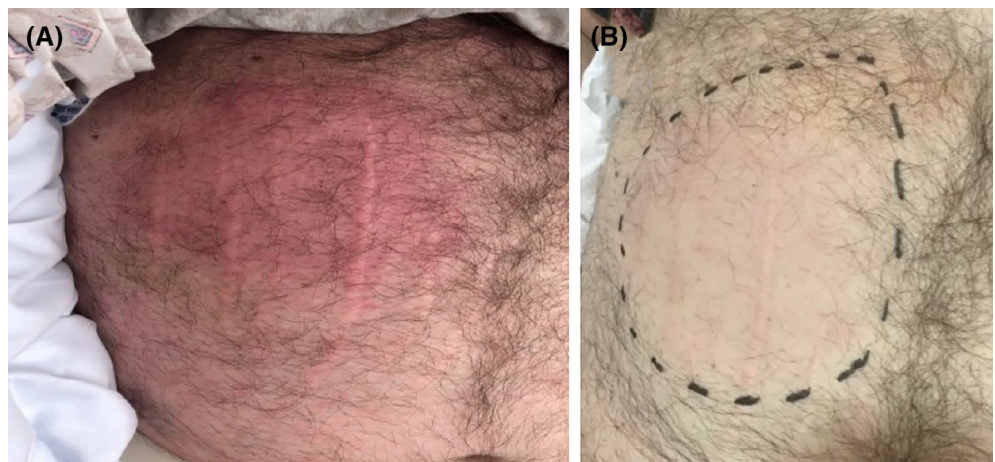
2 | DISCUSSION

15.6% to 31% of COVID-19 patients may present with ARDS.⁴ In a study of 466 patients with ARDS, intubated patients demonstrated decreased mortality when placed in the prone position, for extended periods of time, compared to recumbent.⁵ Because severe COVID-19 is managed similarly to traditional ARDS, the prone position is utilized by physicians for mortality benefit.³ However, this leaves patients susceptible to the complications of immobility, such as pressure ulcers and skin changes.⁶

Primary hair loss disorders are characterized as either scarring or non-scarring based on destruction or preservation of the hair follicle, respectively.⁷ PA describes a group of scarring and non-scarring alopecias that are present following ischemic injury to the dermis.¹ With a pathophysiology similar to pressure ulcers, PA typically presents as a well circumscribed area of hair loss after long surgeries or prolonged stays in the ICU.² First signs of PA may include tenderness, swelling or ulceration to the area, though the alopecia itself can be the presenting feature in some cases.¹

Given the presentation of prior purpura, erythema, and now alopecia, the consult team was highly suspicious of PA. Although the

FIGURE 1 Photographic depiction of pressure-induced alopecia on the right abdomen. A, The image on the left demonstrates erythema in an area previously under pressure secondary to prolonged proning. B, A subsequent photo taken approximately 2 weeks later shows resolution of the erythema and development of alopecia



ultrasound was suggestive of an infectious process, this would have been treated by the time of consult as the patient had several antibiotics in that time. Telogen effluvium was not favored given focal morphology. Alopecia areata and frictional alopecia were considered but not likely due to preceding purpura and sedation.

While PA is typically a self-limited condition, it may be very distressing for the patient.¹ Given that increasing numbers of patients with COVID-19 will undergo prolonged proning therapy for mortality benefit, PA is a complication that may become more prevalent in rehabilitation and office follow-ups.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

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