




## A case of possible Fournier's gangrene associated with proning in COVID-19 ARDS

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### To the Editor,

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), the virus responsible for the coronavirus disease (COVID-19) pandemic, has contributed to significant morbidity and mortality, and presents with a myriad of clinical manifestations. We report a case of a 46-year old obese male with acute respiratory distress syndrome (ARDS) secondary to COVID-19, who went on to develop Fournier's gangrene following prolonged and repeated ventilation in prone position (proning). The patient was transferred to our intensive care unit (ICU) from a community hospital with pneumonia suspected to be COVID-19 after presenting to the emergency department with fever, dyspnea, dry cough, and diarrhea for several

days. His wife had known COVID-19 exposure during a recent international flight. The patient was previously healthy, a lifetime non-smoker, with a body mass index of 40.6 kg·m<sup>-2</sup>.

He initially required 50% oxygen via high-flow nasal cannula. On day 2 of admission, his nasopharyngeal swab tested positive for SARS-CoV-2, his respiratory status decompensated, he failed a trial of awake proning, and he required intubation for worsening hypoxia. Serial chest radiographs showed worsening bilateral patchy airspace opacities consistent with ARDS. Despite optimized positive end-expiratory pressure (20 cmH<sub>2</sub>O) and lung-protective ventilation, the patient had ongoing hypoxia with PaO<sub>2</sub>/F<sub>i</sub>O<sub>2</sub> ratios less than 150, and by day 4 of ICU admission was started on a 16–18 hr·day<sup>-1</sup> proning protocol. He required proning for 14 consecutive days for a cumulative exposure of 252 hr. On day 16 of ICU admission, he had worsening leukocytosis (22.3 × 10<sup>9</sup>·L<sup>-1</sup>) and severe scrotal edema with slight discoloration. The following day, examination revealed multiple areas of necrotic tissue without crepitus around the glans of the penis, the superior scrotum, and at the base of the penis. Intravenous vancomycin and piperacillin/tazobactam were initiated, and the urology service was consulted who made a diagnosis of Fournier's gangrene. The patient went to the operating room for an urgent penile and scrotal debridement. Intraoperative examination revealed necrosis at the base of the penis, more prominent at the glans penis and a small area of necrosis at the superior scrotum penoscrotal junction. Wound cultures initially revealed mixed aerobic organisms on gram stain, although final cultures were negative. The infectious disease team was consulted, and the patient was treated with a nine-day course of antibiotics without further surgical intervention. At the time of writing, he has

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successfully been liberated from the ventilator with no further urologic concerns.

There are numerous well-described complications associated with proning in ARDS, especially regarding pressure ulceration of the eyes and face.<sup>1</sup> Measures such as frequent head repositioning and protocolized turns are used to avoid these complications. Interestingly, Fournier's gangrene has not been described previously in association with ARDS or COVID-19. We hypothesize that this patient had multiple risk factors for this presentation, including obesity, proning (associated with prolonged pressure to the genitals), and critical illness. The prothrombotic and inflammatory nature of COVID-19<sup>2,3</sup> may have also contributed to tissue breakdown and infection. It is also possible this necrosis was due to a macrovascular thromboembolic event. Given the risks faced by healthcare workers treating critically ill patients with COVID-19, they may be tempted to perform limited, focused, or less frequent physical examinations. Nevertheless, given the prolonged duration of ventilation required by most COVID-19 patients and the risk of both common and unique complications due to proning (as highlighted by this case), clinicians ought to be increasingly vigilant with monitoring.

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