

The Rehabilitation of a Survivor of Severe COVID-19 Infection Requiring ECMO

Daniel R. Braggi, MBA and Lauren T. Shapiro, MD MPH

Department of Physical Medicine and Rehabilitation, University of Miami/Jackson Memorial Hospital, Miami, FL, USA

Case Description

A 41 year-old obese woman with diabetes mellitus and SARS-CoV-2 infection (COVID-19) developed acute respiratory distress syndrome (ARDS) and required extracorporeal membrane oxygenation (ECMO). Her bilateral fingers became ischemic. Her hospitalization was also notable for deep vein thromboses, a sacral pressure ulcer, and severe critical illness myopathy. She was subsequently admitted to an inpatient rehabilitation facility (IRF) approximately 6 months after first becoming ill.

On admission to IRF, she was dependent for all care and had 0/5 strength throughout the bilateral lower limbs. She had a stage IV sacral pressure ulcer and profound orthostatic hypotension limiting her ability to sit upright.

Interventions

- Physical and occupational therapy
- Psychology for adjustment and anxiety
- Tilt table, midodrine, & leg wrapping for orthostatic hypotension
- Gabapentin for neuropathic pain
- Universal cuff training for feeding, grooming
- Offloading & alginate dressing for skin ulcer
- Caregiver training

Diagnoses

- Severe critical illness myopathy
- Orthostatic hypotension
- Stage IV sacral pressure ulcer
- Dry gangrene of the fingers (photographed)



Status

Following a 116 day stay in IRF

- Set-up assist with upper body activities of daily living (ADLs)
- Family independent in assisting her with lower body ADLs and wound care
- Supervision with functional transfers and to ambulate 150 feet with rolling walker and bilateral ankle foot orthoses
- Sacral pressure ulcer nearly healed

Continues to receive outpatient rehabilitation

Awaiting surgical amputation of remaining gangrenous digits

Discussion

- ECMO is a treatment of last resort for patients with severe respiratory failure due to COVID-19
- Potential complications of ECMO include stroke and distal limb ischemia^{1,2}
- Survivors who have received ECMO may also experience other complications seen in COVID-19 survivors such as pressure ulcers, critical illness neuropathy and myopathy, and profound deconditioning

Conclusions

- COVID-19 has caused significant morbidity and mortality worldwide
- Intensive rehabilitation therapies, meticulous nursing care and physiatric management are essential to maximize function and minimize caregiver burden among survivors of severe infection, particularly those who required ECMO

References

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