

'Assisted self-proning' in a case of severe COVID-19 pneumonitis

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An independent 60-year-old man with no previous medical conditions was admitted to hospital after 10 days of worsening shortness of breath. On arrival, he had oxygen saturations of 70% on room air and was subsequently admitted to intensive care with a positive result for COVID-19 infection. Despite non-invasive ventilation with continuous positive airway pressure, his oxygenation continued to deteriorate. He subsequently underwent endotracheal intubation and mechanical ventilation using airway pressure release ventilation (APRV).

The following day, a sedation hold was performed. He was found to be neurologically appropriate (E4VTM6) with mild tube intolerance, still ventilated on APRV with an inspired fraction of oxygen of 55%. Over the subsequent 3 days, the patient remained neurologically appropriate, was tolerant of his endotracheal tube on low-dose fentanyl and propofol sedation, and he demonstrated the ability to self-prone with the assistance of a single member of the staff (figure 1). During this time, he remained on APRV with P-high of 24 and T-high of 4.5. Table 1 illustrates the improvement in his oxygenation on his initial self-prone.

He continued to self-prone or lateralise (figure 2) with assistance from one throughout his admission, and his oxygen requirement was gradually weaned. Following a failed extubation, he underwent surgical



Figure 2 Patient in the process of moving into the prone position, awake and ventilated on APRV via endotracheal tube. The patient spent most time in the prone or supine positions; however, at the time of photography, we did not obtain a photo of the prone position due to patient discomfort.

tracheostomy from which he was successfully weaned and subsequently discharged from intensive care.

The prone position has demonstrated a clear mortality benefit in severe ARDS¹ and the ability to improve oxygenation in patients with COVID-19 pneumonitis.^{2,3} It is now at the forefront of the management of ventilated patients with severe COVID-19 pneumonitis. This case illustrates the novel option of 'assisted self-proning' mechanically ventilated patients on high-pressure ventilation and minimal sedation. The potential benefits of this include reduced sedation-related complications such as delirium, potentially reduced time to wean from mechanical ventilation and the consideration of requiring less staff to prone. We also noted that the added engagement of the patient with medical and nursing staff, as well as physios, contributed to progression with his rehabilitation. Additionally, there is a possible benefit to patients who may have the ability to alleviate pressure on their own pressure areas, which would reduce the risk of pressure area necrosis.



Figure 1 Patient in the process of self-proning with assistance from a single member of the staff.

Table 1 Comparison of arterial blood gases supine vs two hours prone (no change in ventilator settings other than inspired fraction of oxygen).

	Supine	After 2 hours prone
FiO ₂	0.75	0.55
PaO ₂	8.5	9.4
PaCO ₂	5.78	6.19
pH	7.44	7.42
SaO ₂	92%	94%

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