

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

William Pitts, S Cais, E Simon, D Hunt

Intensive Care, Frimley Health NHS Foundation Trust, Surrey, UK

## Correspondence to

Dr William Pitts, Intensive Care, Frimley Health NHS Foundation Trust, Frimley GU16 7UJ, UK; wpitts10@gmail.com

Received 3 March 2021

Revised 2 April 2021

Accepted 8 April 2021

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 ARDS<sup>1</sup> and the ability to improve oxygenation in patients with COVID-19 pneumonitis.<sup>2,3</sup> 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 <sub>2</sub>	0.75	0.55
PaO <sub>2</sub>	8.5	9.4
PaCO <sub>2</sub>	5.78	6.19
pH	7.44	7.42
SaO <sub>2</sub>	92%	94%

**Contributors** WP and SC wrote the article and captured the images. ES edited the article. DH conceived the idea and edited the article. All authors were involved in the care of the patient.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Obtained.

**Provenance and peer review** Not commissioned; internally peer reviewed.

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial



© Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite:** Pitts W, Cais S, Simon E, et al. *BMJ Mil Health* Epub ahead of print: [please include Day Month Year]. doi:10.1136/bmjilitary-2021-001826

purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

### REFERENCES

- 1 Guérin C, Reignier J, Richard J-C, *et al.* Prone positioning in severe acute respiratory distress syndrome. *N Engl J Med* 2013;368:2159–68.
- 2 Coppo A, Bellani G, Winterton D, *et al.* Feasibility and physiological effects of prone positioning in non-intubated patients with acute respiratory failure due to COVID-19 (PRON-COVID): a prospective cohort study. *Lancet Respir Med* 2020;8:765–74.
- 3 Mittermaier M, Pickerodt P, Kurth F, *et al.* Evaluation of PEEP and prone positioning in early COVID-19 ARDS. *EClinicalMedicine* 2020;28:100579.