

# Adding an “R” in the “DOPE” Mnemonic for Ventilator Troubleshooting

Sir,

A 20-year-old male was admitted in the emergency department with a diagnosis of abdominal sepsis and septic shock. He was intubated in view of hemodynamic instability and started on vasopressors. A computed tomography scan of the abdomen was advised and was shifted to the radiology suite. The patient was restless and was administered slow intravenous midazolam 2 mg and fentanyl 100 µg for procedural sedation. Patient developed desaturation on the ventilator. The transport ventilator was disconnected, and bag valve oxygenation was initiated. No chest rise was noted. Suctioning of the airway was performed and showed no obstruction or displacement. Lung ultrasonography revealed normal lung sliding bilaterally. A diagnosis of hypoxia due to chest wall rigidity was suspected by fentanyl. Injection naloxone 0.2 mg was administered intravenously and patient saturation improved within a few minutes.

Troubleshooting the ventilator is an important intervention in patients who develop hypoxia postintubation. If hypoxia remains undetected, it can be rapidly fatal without early intervention. A structured approach to concurrently identify and treat the underlying cause is imminent. A helpful mnemonic is “DOPE,” which stands for displacement or obstruction of the endotracheal tube, pneumothorax, and ventilator or equipment failure.<sup>[1]</sup> Fentanyl is known to cause hypoxia and chest wall rigidity and benzodiazepines accentuates its effect.<sup>[2,3]</sup> Chest wall rigidity following administration of fentanyl is a rare complication, but all physicians should be able to recognize this complication and provide appropriate management to prevent life-threatening respiratory compromise. Risk factors for developing opioid-induced rigidity include higher doses and rapidity of opioid injection, extremes of age, patients with critical neurologic or metabolic illness, and usage of medications that are able to modify dopamine levels.<sup>[3]</sup> Management includes supportive care and reversal with either naloxone or a short-acting neuromuscular blocking agent in extreme cases.<sup>[3]</sup> The mnemonic “DOPER” reminds you not only to check for DOPE but also for rigidity of the chest wall.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other

clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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<b>Quick Response Code:</b> 	<b>Website:</b> <a href="http://www.ijccm.org">www.ijccm.org</a>
	<b>DOI:</b> 10.4103/ijccm.IJCCM_501_17

**How to cite this article:** Thomas VK, Abraham SV. Adding an “R” in the “DOPE” mnemonic for ventilator troubleshooting. *Indian J Crit Care Med* 2018;22:388.

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