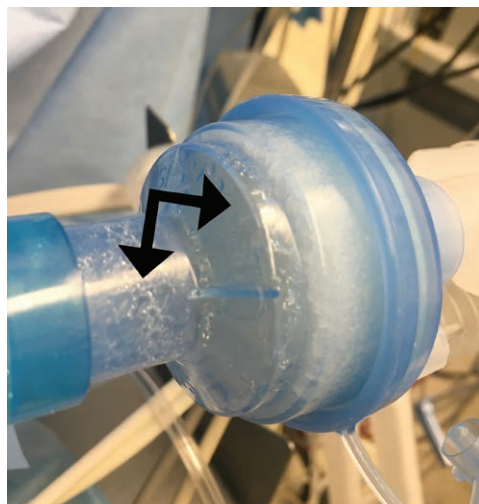
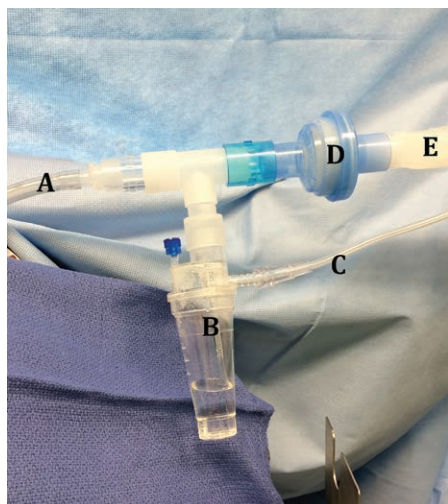


Clinical Complications with the Delivery of Inhaled Epoprostenol in the Operating Room

Amar M. Bhatt, M.D., Erica J. Stein, M.D.



INHALED epoprostenol is used perioperatively in patients with pulmonary hypertension or right ventricular dysfunction to decrease pulmonary vascular resistance.¹ The image on the left depicts the intraoperative setup for administration of inhaled epoprostenol through the ventilator circuit of the anesthesia machine with the following labels: (A) endotracheal tube; (B) miniHEART jet nebulizer (Westmed Inc., USA); (C) oxygen tubing for

bypass flow; (D) heat and moisture exchange filter; and (E) Y-piece connecting filter to expiratory and inspiratory limbs of anesthesia machine breathing circuit. The clinical challenge arises due to epoprostenol commonly being reconstituted with glycine, an inherently viscous diluent, which leads the filter to become clogged.² We also recommended that the level of the nebulizer be lower than the filter to allow drainage by gravity of the condensate. The image on the right shows a clogged ventilator circuit filter, which typically presents with significant droplet accumulation (*arrows*) in conjunction with elevated expiratory resistance and may include unexplained hypoxia, hypercapnia, and capnography changes.

The use of epoprostenol as an inhaled agent is considered off-label; thus, the manufacturer has no recommendation on the safety or efficacy of the administration apparatus. Although there are no specific guidelines, most institutions advocate changing the circuit filter every 2 to 4 h due to accumulation of diluent.³ Therefore, it is imperative that the anesthesiologist be vigilant to the status of the circuit filter and replace it if it appears to become clogged with increasing condensate or has elevated peak airway pressures with auto-positive end-expiratory pressure or an unexpected change in the capnogram waveform occurs.

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Competing Interests

The authors declare no competing interests.

Correspondence

Address correspondence to Dr. Bhatt: Amar.bhatt@osumc.edu

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From the Division of Cardiothoracic Anesthesiology, Department of Anesthesiology, Ohio State University Wexner Medical Center, Columbus, Ohio.

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