**A Critical Incident Involving Propofol Damage to a Three-Way Stopcock in the Intensive Care Unit**

**Authors:** Matthew L. Kolz, M.D., Ph.D., John L. Chow, M.D., M.S.
**Affiliation:** Department of Anesthesia, Stanford University School of Medicine

**Introduction:** Propofol is a commonly employed sedative in the intensive care unit (ICU) [1,2]. While limited *in vitro* data have demonstrated that infusions of propofol and other lipid-based solutions can cause cracking and leakage at the connection site to the arms of polycarbonate-based stopcocks [3,4], the potential clinical implication of this problem has never been reported in the literature. Although manufacturers of stopcocks have addressed this issue by producing lipid resistant stopcocks, their availability in the perioperative patient care settings is not uniform. We report a sentinel case of critical incident involving propofol damage to three-way stopcocks during the concomitant infusion of vasoactive medications in the ICU.

**Case:** A 41 year-old man with a history of dilated cardiomyopathy secondary to presumed viral myocarditis was transferred to our hospital for management of refractory ventricular arrhythmias. After failing optimal medical therapy and a ventricular resynchronizing automatic implantable defibrillator device, he was listed as a candidate for cardiac transplantation. On hospital day twenty-two, the patient underwent a heart transplant that was complicated by acute right heart failure requiring the placement of a right ventricular assist device. His postoperative course in the ICU was further complicated by severe inflammatory response and multiorgan dysfunction requiring multiple vasopressors and ionotropic agents to maintain hemodynamic stability. While in the ICU, he received a propofol infusion for sedation. On postoperative day (POD) five, the patient developed a pulseless ventricular tachycardic arrest. During the cardiopulmonary resuscitation effort, a partial disruption and leakage was noted at the stopcock connecting the central intravenous catheter to the vasopressors and propofol infusion lines. This was later discovered to be due to a cracked stopcock arm that was being used for a propofol infusion. The origin of the stopcock – from the operation or ICU stay – is unknown. The patient was successfully resuscitated but remained in critical condition. On POD eight, he again developed another cardiac arrest and was resuscitated briefly before the surgical team and his family jointly agreed upon a do not resuscitate status. The patient expired shortly thereafter.

**Discussion:** Although it is unlikely that this critical incident involving the leaking stopcock ultimately changed the outcome for this patient, the arrest on POD five emphasizes the danger of damage to stopcocks by lipid-based infusions. Perioperative care providers need heightened awareness of this issue and should develop guidelines for proper stopcock usage when lipid-based medications are employed. Possible safety measures include educating nurses and physicians about proper type of stopcocks for propofol infusions and using dedicated lines for propofol infusions to prevent the occurrence of such a critical event. A discussion on the various types of lipid resistant stopcock will be provided.

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benefit and adds to the growing evidence for the efficacy of rFVIIa in obstetrics for severe postpartum hemorrhage.

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