

## Physician - Vascular Access

[MEP-43]

### Methemoglobinemia After Central Venous Catheterization Due to Local Anesthesia with Prilocaine: A Case Report

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*Cardiovascular Surgery and Interventions* 2024;11(Suppl 1):MEP-43

Doi: 10.5606/e-cvsi.2024.mep-43

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Received: September 13, 2024 - Accepted: September 29, 2024

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Local anesthetics such as prilocaine, bupivacaine, and lidocaine can rarely cause methemoglobinemia. Methemoglobinemia should be considered in patients presenting with hypoxia and cyanosis after taking local anesthesia for interventions. The severity of symptoms correlates with the existing methemoglobin level. Herein, we presented a patient who developed methemoglobinemia after local anesthesia with prilocaine use for dialysis catheter insertion. A 78-year-old male patient with prostatic adenocarcinoma and chronic renal failure developed methemoglobinemia after 20 min of temporary hemodialysis catheter insertion due to prilocaine use. The patient had dyspnea and respiratory distress, and his saturation dropped under 90% while the arterial oxygen partial pressure was above 80 mmHg. After intravenous methylene blue administration, the patient's symptoms resolved, and the need for intubation was eliminated. The prilocaine dose recommended for adults is lower than 5.0 mg/kg, which is reduced to 3.2 mg/kg in the presence of renal insufficiency and to 1.3 mg/kg if other oxidizing drugs are used concurrently. An alternative to methylene blue would be a 20% lipid emulsion infusion with a bolus injection of 1.5 mL/kg, followed by an infusion dose of 0.25 mL/kg/min. The ability to recognize and treat local anesthetic systemic toxicity is critical for clinicians and vascular surgeons who frequently perform local anesthetic interventions. Several measures may reduce the risk of toxicity: limiting the cumulative dose, using ultrasound or direct visualization for catheter placement, test dosing, incremental injections, negative catheter aspiration, and adherence to guidelines. Treatment with methylene blue should be kept in mind along with supplemental oxygen therapy for patients with methemoglobinemia.

**Keywords:** Local anesthetic, methemoglobinemia, peripheral venous catheterization, prilocaine.