Anesthesia for a Child with Reflex Anoxic Seizures

To the Editor:

Reflex anoxic seizure is a vagally mediated cardiac arrest producing cerebral ischemia (1). Infants and young children aged 6 mo to 2 yr are particularly susceptible, with girls being more commonly affected. The attack is almost always provoked by pain or fright; venipuncture or an excessively hot or cold bath are recognized examples (2). Anesthesia can also precipitate an attack (3). The sudden shock of pain causes the heart to stop, the eyes to roll up into the head, the complexion to become deathly white, the jaw to clench, and the body to stiffen with arms and legs jerking. After approximately 30 s the body relaxes and the heart restarts. Cardiac massage is rarely necessary, as the episode is self-resolving. Treatment for reflex anoxic seizure is mainly supportive and reassurance of the parents is required. Occasionally regular antimuscarinic agents (atropine) have been used prophylactically in children in whom seizures are common. Permanent pacing has been occasionally used to treat children with a severe form of this condition (4). Reflex anoxic seizure is often misdiagnosed as simple breath holding or, more worryingly as epilepsy (4).

An 8-yr-old boy was admitted with fracture of the left radius requiring urgent manipulation under anesthesia. He weighed 25 kg and was fit and well apart from reflex anoxic seizure first diagnosed at 8 mo of age. A typical episode for him would last a few seconds and was typically precipitated by pain. It had occurred once every few days or weeks, but his last attack had been 2 mo previously. We sought advice from pediatric registrar and we did a quick literature search before we brought him to operating room. Ametop cream (Smith & Nephew Healthcare) was applied to his right hand while he was in the Accident & Emergency unit. We brought him directly to the operating room, applied full monitoring, and inserted a cannula while distracting him. His initial heart rate was 82 bpm, so we gave him 300 μg of atropine, which decreased the heart rate to 60 bpm, but it increased to 100 bpm after a further 300 μg of atropine. Anesthesia was induced with fentanyl 25 μg and propofol 120 mg, and a laryngeal mask airway was inserted. Maintenance of anesthesia was achieved with isoflurane and nitrous oxide 60% in air 40%. Anesthesia care unit in our protocol. We apologize for omitting this piece of information from our final manuscript and thank you for bringing this to our attention.

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References

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Comparison of Propofol with Lidocaine Pretreatment Versus Propofol Formulated with Long- and Medium-Chain Triglycerides or Confounding Effect of Tourniquet

To the Editor:

We read with interest the Schaub et al. study (1) and have concerns. The authors have compared the pain on injection in propofol with lidocaine pretreatment versus propofol formulated with long- and medium-chain triglycerides. In the lidocaine group, lidocaine 2% 2 mL (40 mg) IV and in the long- and medium-chain triglycerides group Neoral 0.9% 2 mL was given 1 min before the injection of propofol with a tourniquet in place on the forearm.

Ischemia/reperfusion injury, which may occur during tourniquet application, results in neutrophil-mediated endothelial cytotoxicity and activation, generation of free radicals, and triggering of cytokines and chemokines (like kinin) (2). However, the mechanism responsible for propofol pain on injection is unknown; the activation of pain mediators such as kinin cascade system has been suggested (3).

Both of these mechanisms have a common kinin component. It is possible that ischemia/reperfusion injury aggravates the propofol pain on injection. So the more frequent (46%) incidence of pain with propofol formulated with long- and medium-chain triglycerides (Schaub et al. study compared with that reported by other investigators using this formulation (1) could be explicated. Furthermore, significantly more frequent incidence of pain among the long- and medium-chain triglycerides group compared with the lidocaine group may not be unexpected.

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In Response

We would like to thank Drs. Eghtesadi-Araghi and Marashi for their interest in our randomized clinical trial. They have raised some concerns regarding tourniquet use and the potential for an interaction between ischemia/reperfusion injury and the pain triggered by the injection of propofol.

First, the tourniquet used on the forearm of our patients in this trial was not a “surgical tourniquet” whereby two cuffs are inflated to a pressure of 300 mm Hg to prevent arterial flow to provide a bloodless surgical field during microsurgery, to minimize blood loss during orthopedic surgery, or to perform distal limb anesthesia with prilocaine. As is our routine practice when using standard