

[NM-257] The use of Lipid emulsion in a 13 month old with bupivacaine-induced cardiotoxicity following single shot caudal blockade

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**Introduction:** The use of local anesthetics in caudal anesthesia prompts precaution with well-known neurotoxic and cardiotoxic effects at suprathreshold levels. Animal studies have demonstrated efficacy of lipid emulsion in resuscitation from local anesthetic toxicity (LAST) (1). Efficacy in the human population is largely based on relatively few case reports. Fewer than 10 cases have been reported in the pediatric population.

**Case presentation:** A 10.8kg, 13 month old born with Beckwith–Wiedemann syndrome who presented for bronchoscopy, orchiopexy, and inguinal hernia repair. A single shot block caudal using 22g needle was done. Aspiration without evidence of blood or spinal fluid preempted a 1ml test dose of the solution without hemodynamic alteration or EKG changes. A total of 13 cc of .25% bupivacaine solution was given. HR fell from the 140s to a nadir in the mid 70s over the following two minutes after skin prep. No T wave morphology noted though wide complex QRS with loss of P waves were noted. The patient's BP decreased from 92/47 to a nadir of 41/13. Hemodynamic instability prompted retrieval of the Intralipid arriving within 60 seconds. 10ml of the 20% solution were administered. 30 seconds later the pulse began to climb peaking in the 130s with narrowing of the QRS complexes and return of P waves. Hemodynamic stability was maintained without subsequent infusion.

**Discussion:** The rapid onset of ventricular dysrhythmia is a result of IV injection of local anesthetic rather than from systemic absorption, dysfunctional/reduced plasma proteins. The addition of epinephrine to local anesthetics has long been utilized as an intravascular marker. In recent studies T-wave changes have been found to be more specific among other hemodynamic alteration in the detection of intravascular injection and have been noted in solutions without the addition of epinephrine suggesting further study for clarification of the role of the local anesthetic in the changes (2,3). The approach to the treatment of LAST is rapidly evolving. Questions remain as to the place of Intralipid in resuscitation practice. Animal studies demonstrating the effect of lipid therapy on LAST appear first in 1998 (1). In humans the first case report of successful resuscitation was in 2006 (4). Studies question the efficacy or detriment of epinephrine in LAST when used in combination with lipid emulsion (5).

**References:**

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