

[NM-148] Spinal Anesthesia in a Neonate with Severe Bronchopulmonary Dysplasia

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Bronchopulmonary dysplasia (BPD) is a well known entity that occurs primarily in premature infants that require positive pressure ventilation and high inspired oxygen content after birth. The majority of these cases are patients with a birth weight of <1250 grams. Pulmonary hypertension is frequently a complication of BPD, and is more consistently associated with an extremely low birth weight (ELBW) of <1000g and a prolonged ventilatory course. We present the unfortunate case of an 8 month male born at 25 weeks weighing 765gm with severe respiratory distress leading to intubation and resuscitation immediately after birth. His perinatal course was complicated by BPD, pulmonary hypertension, retinopathy of prematurity, and a stage IV intraventricular hemorrhage. He presented to our operating room for insertion of a gastrostomy tube. The child's surgical history comprised of a patent ductus arteriosus ligation and placement of ventricular-peritoneal shunt. The patient had a prolonged respiratory course, starting with severe respiratory distress leading to intubation and resuscitation immediately after birth. The patient was extubated after 39 days and transitioned to nasal continuous positive airway pressure (CPAP). Pulmonary hypertension developed and the infant was started on sildenafil and then transitioned to nitric oxide therapy as well. The day before the operation was to proceed, the infant was successfully weaned off of nitric oxide and placed on nasal CPAP with continuous nebulized albuterol. His other medications consisted of prednisolone, furosemide, sildenafil, ranitidine, glycopyrrolate, midazolam, inhaled budesonide, and hydrochlorothiazide. At the time of the surgery the child was 268 days old, weighed 7.5 kg and his respiratory course consisted of a total of 67 days intubated, 164 days of nitric oxide therapy, and 175 days of CPAP. After a lengthy discussion with the surgeon about the critical pulmonary function of the child, a decision was made to pursue spinal anesthesia and continue the nasal CPAP and continuous nebulized albuterol. The thought process was that since the infant had such severe BPD and had required previous prolonged intubation with recent successful weaning of nitric oxide that reintubation would result in another prolonged intubation before he would be able to be successfully weaned. In the operating room the child was placed in left lateral decubitus position and a 25 gauge 1 inch spinal needle was introduced into the L5-S1 interspace using sterile technique. Free flow of CSF was obtained and 3mg(0.4mg/kg) of tetracaine mixed with 0.3ml of D10 and 0.02ml of epinephrine were placed intrathecally. A T6 level was obtained, and the surgical procedure proceeded uneventfully, without any airway manipulation required. Post-operatively the infant remained off of nitric oxide therapy and was successfully discharged to a pediatric chronic rehabilitation facility approximately one month later. We submit this case report as an example of the use of neuraxial anesthesia to avoid any airway manipulation in a complicated neonate with severe BPD and pulmonary hypertension.
