Primary Caudal Anesthesia in an Ex-Premature infant with Unrepaired Large Omphalocele and RDS undergoing Bilateral Inguinal Hernia Repair and Circumcision using Ropivacaine and Clonidine

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Introduction: Infants with omphalocele born with respiratory distress had lowers birth weights and gestational ages than those with normal respiratory function. (3) Management of these defect continue to evolve and there are no consensus regarding the treatment of large omphalocele defects.(3) Primary or staged closure of the defect remains the treatment of choice for infants with omphalocele. We must be aware that respiratory insufficiency at birth is a significant prognostic factor indicative of high risks and changing how large omphalocele are managed to avoid respiratory exacerbation should be attempted in this population to improve survival. (3) Some surgeons wait for epithelization of the omphalocele which may take over a year to complete before repairing the abdominal wall defect. Anesthesiologist may see more of this patient population on outpatient bases for other surgical procedures prior to the repair of the omphalocele. Here we report of an ex-premie with RDS and an unrepaired large omphalocele (includes liver) presents for an inguinal hernia and circumcision done under sole caudal anesthesia.

Case Report: This infant was born at 35 weeks under urgent C-section because of decelerations during labor. He was 2.4 kg and presented with large omphalocele which included liver and pneumonia. He developed RDS and was intubated for two weeks. Upon discharge, his PDA and Pulmonary Hypertension resolved and was sent home on home O2 .2L Pulmicort. Albuterol nebulizer, Diuril Aldactone, and Zantac. Plan was repair of Omphalocele between 6-12 months along with circumcision. On the day of surgery he was 45 weeks PCA, 3.8kg, on home O2 with constant chest retraction. His vital signs were P170, BP 63/37, and Reps. 40-50. In the OR, 24 gauge IV was placed in the left foot and IV fluid started at 16cc/hr. Caudal was done in a lateral position using sterile techniques. 1 cc/kg of .375% Ropivacaine with 1mcg/cc clonidine and 1:200,000 epinephrine solutions was used. Caudal landmarks were identified and injection of the solution occurred without problems. Sensory block was achieved approximately 5minutes using the skin pinch technique. Incision was made 15 minutes after caudal was completed. Patient was maintained on NC O2.2L and slept throughout the procedure. Surgery was completed approximately one hour after it was started and the infant tolerated the procedure and without complication. No additional medications were needed during the surgery. Overnight observation was warranted because of his prematurity history and home O2 use and occasional desaturations at home. The infant was discharged the next day without any problems during the overnight hospital stay.

Discussion: Despite extensive literature search, anesthesia management for outpatient surgical procedure in infant with delayed closure of large omphalocele (and increased
respiratory risk) was unavailable. Avoiding intubation in these patients is preferred, when possible. We used ropivacaine because of its cardiac safety and clonidine because of ability for sedative properties and prolonged block. We acknowledge our patient stayed overnight. Given the age and history and the special circumstances we felt overnight observation was warranted. In hindsight, after motor blockade receded and patient had 12 hours of apnea free period, he could have been discharged.