

Monitored Anesthesia Care with Combined-Spinal-Epidural, Dexmedetomidine Infusion, and Ketamine Bolus for Right Above the Knee Amputation in a Pediatric Patient with Bronchiolitis Obliterans and a Difficult Airway

S. Anthony Lehn M.D., Lauren Moore M.D., Jackson Condrey M.D.
Department of Pediatric Anesthesiology

INTRODUCTION

No case reports exist regarding the use of regional anesthesia as the primary anesthetic in a pediatric patient with bronchiolitis obliterans and a difficult airway. A patient with bronchiolitis obliterans and a difficult airway would pose significant challenges and risks if their respiratory drive is suppressed. The majority of case reports in the literature involving CSEs in pediatric patients utilize propofol infusions for supplemental sedation. Utilizing dexmedetomidine or ketamine as opposed to propofol becomes important when preservation of spontaneous respirations and airway reflexes is of supreme importance, such as in the case described above. This case describes the successful use of a CSE with supplemental sedation from dexmedetomidine and ketamine on one such patient.

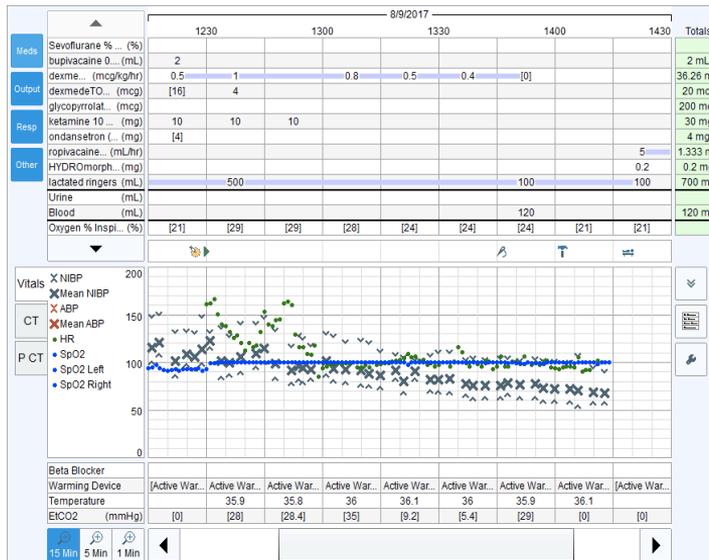
PAST MEDICAL HISTORY

Patient is a 15 yo AA male, 31kg, 4'5", with PMHx of osteosarcoma of R distal femur → initially treated with chemotherapy and limb salvage surgery → developed sAML → underwent BMT → developed severe chronic GVHD → affected multiple organs resulting in decreased mouth opening and bronchiolitis obliterans → failure of limb salvage implant and severe leg length inequality → requiring AKA

ANESTHETIC

No pre-operative midazolam was administered. Once in the room, a ketamine bolus was given and a dexmedetomidine infusion started. The patient was placed in a seated position while listening to his own music and with a CCLS present. A CSE was placed midline at L3-4 with LOR at 3 cm using a 17g Tuohy. 2 ml of 0.5% hypobaric bupivacaine was administered intrathecally through a 25g Whitacre needle. The catheter was left at 7 cm and a b/1 T8 level achieved. The patient was placed in modified beach chair position and the surgery lasted 1.5hrs. The patient's own BiPAP was utilized during the case. The surgery was uneventful. Post-operatively the epidural was ran at 5 ml/hr with ropivacaine 0.2% with 10 mcg/ml of dilaudid. No complications post-operatively. The epidural removed POD 2 and patient discharged home on POD 5.

FIGURES



Test	7/20/17	2/16/17
FEV ₁ /FVC % Pre	90%	89%
FEV ₁ Pre (L)	0.45L	0.48L
FVC Pre (L)	0.5L	0.54L
FVC % Pre	22.79%	28.34%
TLC % Pre	38.34%	56.35%
Diffusion unable to be accurately measured despite multiple attempts.		

CONCLUSIONS

- Keep the patient cooperative and calm
 - Earbuds, home BiPAP, CCLS
- Choose the appropriate anesthetic
 - Neuraxial anesthetic with post-operative pain control
 - Hypobaric solution
 - Preserved spontaneous respirations