

[NM-138] Same day discharge following robotic urologic surgery using a standardized perioperative anesthesia/analgesia protocol: A pilot study

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Introduction: Minimally invasive urologic surgery can significantly reduce pain, hospital stay and health care costs.(1) The goal of this pilot study was to evaluate the efficacy, safety and patient satisfaction with same day discharge after robot-assisted laparoscopic surgery utilizing a standardized perioperative anesthetic/fluid/analgesia protocol and innovative delivery of health care at the patient's home via a maneuverable robot (VGo) telepresence.

Method: As part of this quality assurance study, children >4 years undergoing robotic-assisted laparoscopic urologic surgery received a standard anesthetic consisting of an inhalation or IV induction and maintenance anesthesia with a propofol infusion at 100 mcg/kg/min combined with sevoflurane in oxygen-air titrated to maintain a bispectral index between 40-50. Intraoperative analgesia was achieved with a total of 5 mcg/kg of fentanyl prior to incision along with ketorolac 0.5 mg/kg IV and 0.5 mL/kg 0.25% bupivacaine (1.25mg/kg, maximum of 10 mL) injected subcutaneously into the trocar incisions at the end of the procedure. Early aggressive IV fluid loading was instituted to replace the fluid deficit (calculated from the last solid meal intake until induction) before the pneumoperitoneum was initiated.

Ondansetron 0.1 mg/kg was used for PONV prophylaxis. Postoperative analgesia in the PACU/ward included oral acetaminophen 12 mg/kg q 4h, ketorolac IV q 6h, morphine IV 30 mcg/kg q 10min PRN for 3 doses, or an oral opioid (oxycodone 50-100 mcg/kg) utilizing a standardized order set based on pain assessment with a Faces scales/FLACC/VAS score. After 4-6 hours of observation in the PACU/inpatient unit, the patients were evaluated for discharge by the surgical team and provided with detailed instructions regarding postoperative care and the use of the VGo robot. VGo calls were planned daily for the first 5 days and periodically during the 3 weeks postop to allow viewing of the surgical site, evaluate for complications, and supervised removal of the urinary catheter. A satisfaction survey was also sent to the parents describing their postoperative experience.

Results: At present 3 patients have been enrolled, 2 undergoing pyeloplasty, and 1 unilateral nephrectomy, with mean age of 8.7 ± 3.8 years (range 6-13), and weight 33.9 ± 20 kg (range 20.3-56.4). Postoperative analgesia included <0.1 mg/kg Morphine (mean; 0.54 ± 0.4) in the PACU and 2 patients required an additional dose of oxycodone on the floor. One child received 1 dose of ondansetron for PONV. Intraoperative hydration (mean 50 ± 11 mL/kg) resulted in urine output of >1.5 mL/kg/hour in all patients. All 3 patients met discharge criteria within 6 hours after surgery but the parents of each patient preferred to remain in the hospital overnight. VGo follow-up was uneventful. This study is ongoing and additional data will be available at the meeting.

Discussion: Given recent cost constraints, we evaluated the feasibility of a fast track discharge facilitated by a standardized anesthesia, fluid management, and analgesia protocol with home-based monitored care with a VGo robot. More thorough education of parents and nursing personnel is planned to make this an acceptable alternative for parents.

Ref: 1. Rowe CK et al. J Endourology, 2012
