

Intraperitoneal Catheters Improve Ventilatory Status in Neonates after Open Heart Surgery

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Introduction: Postoperative fluid balance in neonates undergoing open heart surgery is extremely difficult due to the inability of the immature kidneys concentrate urine, and due to the obligatory volume overload associated with heart surgery. Furthermore, ascites raises the intra-abdominal pressure and limits ventilation. Since 2006 we have been liberal in intraperitoneal catheter insertion in neonates, postulating that draining the ascites would improve post operative fluid balance and benefit ventilation. The purpose of the present study was to present our experience with intraperitoneal catheter insertion (IPCI).

Methods: Retrospective analysis of charts of all neonates that underwent peritoneal catheter insertion at Schneider Hospital from January 2006 through March 2009.

Results: During this 26 month period 959 patients underwent heart surgery at Schneider Children's Medical Center, out of them 190 (20%) were neonates. 11 patients (6%) required IPCI. There were no procedure related complications. Mean age and weight was 7 days (median-9, range 6-11 days) and 3.3 kg (range 2-4.2 kg) respectively. Mean amount drained upon insertion was 54cc±47 (range 20-165). Catheters were maintained for a median of 5 days (mean -5, range 1-11 days) and drained an average of 140±106cc per day (range 24-324cc). Although ventilatory settings did not change significantly prior and post catheter insertion (respiratory rate 31 vs.30 P=0.57, Inspiratory pressures 26.3 vs 26.2 p=0.83), CO₂ values decreased significantly (42±5.8 vs. 38±4.7 p=0.01).

Conclusions: Peritoneal draining catheters are a valuable adjunct in the treatment of neonates after open heart surgery improving ventilatory status and facilitating post operative fluid balance management.