

## TOPICAL INTRAPERITONEAL PAPAVERINE TO MINIMIZE NON-VIABLE BOWEL RESECTION FROM NON-OCCLUSIVE BOWEL ISCHEMIA IN NEONATAL VOLVULUS: A CASE REPORT

Roger Zhu, Gamal Marey, Vadim Kurbatov, David Kashan, Gainosuke Sugiyama, Francisca Velcek, Jason Sulkowski

*SUNY Downstate, College of Medicine, Brooklyn, New York, USA*

**Background:** Nonocclusive mesenteric ischemia (NOMI) is a feed-forward loop of vasoconstriction that aggravates the primary ischemic injury. It is an initially reversible process and a potential point of intervention for preservation of viable bowel. Intravascular papaverine infusion has been used in the management of adult NOMI. We present a modified version of this approach using topical papaverine in the setting of neonatal post-ischemic NOMI, with the goal of minimizing bowel resection.

**Case Presentation:** The baby boy, delivered at 40+3 weeks from uncomplicated pregnancy, presented at day 11 of life with malrotation and midgut volvulus. An emergent exploratory laparotomy with Ladd procedure and detorsion of malrotation was performed without complication. Subsequently the patient presented on POD 13 with vomiting after feeding and lactic acidosis. Abdominal x-ray showed pneumatosis coli and portal venous gas. The baby was admitted for aggressive resuscitation and emergent exploratory laparotomy. At exploration, ischemia of majority of the small bowel was noted. Topical papaverine was introduced into the peritoneal cavity over the intestines before closing the abdomen. A second look laparotomy was done 24 hours later with the findings of marked bowel improvement.

**Result:** The use of the topical papaverine in our patient allowed for the reduction of the length of small bowel resection. The length of viable small bowel increased from 62 centimeters (15.6%) to 92 centimeters (23.1%). The baby has been thriving well with normal growth and development without signs of short gut syndrome.

**Conclusion:** Topical intraperitoneal application of papaverine potentially allowed for reduction of length of small bowel resected, decreasing the risk of morbidity from potential sequelae of extensive small bowel resection. A prospective randomized control study should be considered to investigate potential benefits of topical papaverine administration in the setting of need for massive small bowel resection.