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NOVEL USE OF PRE-FORMED SILO FOR LAPAROSTOMY

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Aim of Study: We report the novel use of the pre-formed silo (PFS) for laparostomy (LST).

Methods: Indications for LST; high ventilation pressures and/or cardio-respiratory instability precluding standard closure following laparotomy. Consecutive patients (2011-2015) were reviewed. Partial fascial closure was undertaken and PFS (Medicina ®) applied. Bowel was fed into the silo, the spring-loaded end inserted ovoid into the abdominal cavity and allowed to spring into its circular shape without bowel entrapment. Safe bowel orientation was confirmed and PFS flanges sutured to the skin (**Figure 1**). Outcomes: time to closure, duration of ventilation and ICU stay, complications and mortality. Data; median with (ranges).

Results: 9 children aged 40 days (3 days-19 months), underwent PFS LST. Weight at laparotomy was 2.3 (0.7-13) Kg.

Diagnoses: NEC (n=3), CDH (n=3), volvulus (n=1), biliary peritonitis (n=1) and tense pneumoperitoneum (n=1). Instability requiring rapid closure [(n=4) (two on NICU)] and preventing overt compartment syndrome (n=5). Following PFS, the bowel was visible in all with minimal fluid leak.

7 cases (78%) survived to second-look laparotomy, and achieved abdominal closure after 5 (2-11) days. ITU stay; 31 (1-185) days, postoperative ventilation 18 (0-46) days. 30-day mortality [(n=3, 33%)]; these were post-volvulus bowel infarction related septicaemia, severe chronic lung disease resistant to medical therapy and withdrawal of care for hypoxic-ischaemic brain injury.

Conclusion:

- PFS LST is simple to fashion, allows inspection of intra-abdominal contents, and avoids fluid loss
- Selected children including newborns may benefit from PFS LST to manage or avoid abdominal compartment syndrome