SUPPORTIVE WRAPPING TECHNIQUES FOR THE UNREPAIRED GIANT OMPHALOCELE: CASE STUDY SERIES

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Introduction
Children with giant omphalocele (GO) have comorbidities that affect timing of closure. Surgical repair options include:
- Primary repair
- Staged closure
- Delayed closure, also known as “paint and wait”

Objectives
- Describe supportive wrapping techniques for GO.
- Explain the benefits of supportive wrapping techniques for GO.
- List various materials that are utilized to wrap the GO.

Methods/Results
Seventy two patients with GO in our multidisciplinary clinic.
- Primary repair: 6
- Staged closure: 29
- Delayed closure: 37
- Tissue expanders: 4

We present three case studies to illustrate wound care product selection and supportive wrapping techniques.

Regardless of severity of defect and co-morbidities, all three patients were able to be closed by 3.17 years of age with the use of supportive wrapping from birth.

Case 1
3 year old ex 34 5/7 week female with GO, severe pulmonary hypoplasia, s/p tracheostomy placement, GER, feeding difficulties s/p ex-lap, LOA with reduction of obstructed bowel, appendectomy. Discharged from the hospital at 9.4 months, decannulated at 2.17 years, transitioned to gastric feeds at 2.33 years, s/p tissue expander placement at 2.83 years, and GO closure at 3.17 years.

Case 2
3 year old ex 27 3/7 week female twin with GO, severe pulmonary hypoplasia, s/p tracheostomy, Beckwith-Wiedemann Syndrome, GER, feeding difficulties, incidental right congenital diaphragmatic hernia s/p ex-lap, LOA, primary repair of right congenital diaphragmatic hernia, adrenal insufficiency, Neuroblastoma, craniosynostosis s/p Cranotomy, fronto-orbital advancement, s/p hemiglossectomy, OSA, s/p T & A. Discharged from the hospital at 9 months, transitioned to gastric feeds at 1.66 years, and underwent GO closure at 2.25 years.

Case 3
3 year old ex 38 week male with GO, scoliosis, thoracic insufficiency syndrome, pulmonary hypoplasia, tracheomalacia, s/p tracheostomy, pulmonary hypertension, anomalous thoracic and lumbar vertebrae, right hydrocele, right inguinal hernia. Discharged from the hospital at 1.07 years. Underwent vertical expandable prosthetic titanium rib (VEPTR) at 8.4 months with three subsequent expansions at 1.2 years, 1.62 years, 2.16 years, transitioned to gastric feeds at 1.33 years, underwent GO closure at 2.42 years.

Wrapping Techniques and Commonly Used Products
- Sac epithelialization:
  - Antimicrobial dressing
  - Petroleum impregnated occlusive gauze
  - Silver Sulfadiazine
  - Silver impregnated gel
  - Silicone foam
  - Gauze bandage rolls
  - Wrap in “figure 8” fashion conforming the GO into a tall and narrow shape to allow abdominal contents to slowly return into the abdominal cavity.
  - Provide daily dressing changes
  - Consider wound care consult

- GO compression:
  - Once cleared from a cardio-pulmonary standpoint, begin slow compression utilizing elastic bandage or self adherent wrap. Ease up on compression if increased work of breathing, feeding difficulties, and/or exacerbation of reflux symptoms.
  - Consider orthotic compression device

Conclusion
Utilizing the paint and wait method while incorporating supportive wrapping techniques should be considered in GO children with significant co-morbidities. This method allows for sac epithelialization and promotes an increase in abdominal domain allowing either primary closure or closure with the assistance of tissue expanders.