

Gentian Violet/Methylene Blue Polyurethane Foam in the Longitudinal Management of a Large Abdominal Wound in a Preterm Neonate

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INTRODUCTION:

Neonatal abdominal wounds pose unique healing challenges due to fragility of immature skin, susceptibility to infection, and scarcity of treatment related data. GV/MB PU (Gentian Violet / Methylene Blue Polyurethane) foam supports wound healing through infection control and moisture balance

CASE:

- Patient:** Hispanic female, born premature at 28w0d gestation
- Co-morbidities:** Acquired hypotension, pneumoperitoneum, thrombocytopenia, persistent PDA

DOL (Day of Life) 3

- Admitted for NEC (necrotizing enterocolitis), culture-negative sepsis, abdominal distention
- Imaging revealed large pneumoperitoneum and intestinal perforation
- Penrose drain placed

DOL 4

- Exploratory laparotomy identified 4 cm gastric perforation (GE junction → greater curvature)
- Drain removed; abdomen closed with Vicryl mesh

DOL 75

- Surgical team re-engaged due to cellulitis and IV antibiotics restarted, evidence of delayed/stalled wound healing

DOL 76

- Initial Wound team consult
- Implemented GV/MB PU foam therapy for secondary intention healing



Severely distended abdomen with taut, thin, denuded skin at the apex. Skin is extremely friable with brisk bleeding on light touch. Collateral circulation visible; striae indicate early epithelialization attempts.

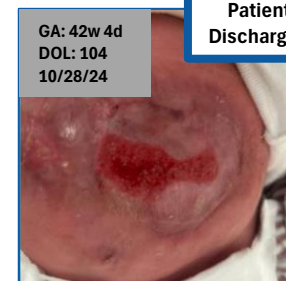
Began therapy with GV/MB PU foam, changing every 3 days



Wound bed contracting with evolving granulation. Mixed areas of red granulation, striated bands, and hypopigmented epithelialization. Edges are purple, slightly thickened, flat, and well-adhered.



Significant reduction in wound size since prior exam. Two central islands of thin, friable tissue remain, encircled by progressing healthy pink epithelialization

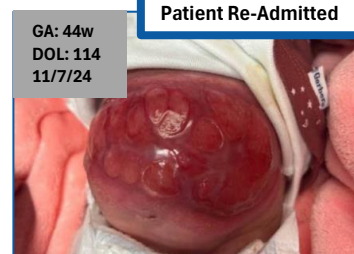


Wound continues to contract with advancing epithelialization. Bright red granulation tissue exposed; brisk bleeding noted on GV/MB PU foam removal. Edges well-adhered with a progressing epithelial ridge.

Patient Discharged

COURSE & TREATMENT:

- Post-op complications:** Cellulitis and delayed wound healing
- Wound care initiated:** 2 months post-op
- Treatment:** GV/MB PU foam, hypochlorous wound cleanser, with dressing changes every 2–3 days
- Response:** Progressive granulation, reduced wound size, no recurrent infection
- Discharge:** DOL 104 with wound in a good state of healing
- Disruption:** Foam therapy discontinued post-discharge
- Readmission:** DOL 114 with significant wound deterioration and new infection
- Key Issue:** Lack of care continuity led to wound regression
- Contributing factors:** Varying degrees of abdominal distention, caregiver knowledge gaps, health literacy barriers, limited outpatient access
- Outcome:** Preventable wound progression and re-hospitalization



Patient Re-Admitted

Readmission due to wound deterioration and abdominal distention. Patient discharged 1.5 weeks prior with orders for GV/MB PU foam, but dressing was never received. Wound left open after brief occlusive dressing use; friction from clothing noted.

Restarted GV/MB PU Foam DAILY



Thin, denuded, friable skin across upper abdomen (supraumbilical to subcostal). Purple, thickened chronic wound edges with expanding epithelialized tissue. Scattered denuded islands remain with minimal brisk bleeding on gentle cleaning. Periwound skin is non-erythematous, non-indurated, and normothermic.

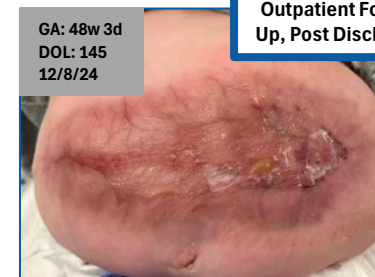


Significant overall improvement of abdominal wound. Majority of wound is light purple, thickened epithelialized tissue with stranding. Two small islands of erythematous, friable, denuded tissue remain with easy bleeding.



Marked improvement of abdominal wound. Majority of surface is light purple, thickened epithelialized tissue with stranding- good moisture. One erythematous, friable, denuded island persists on the left abdomen.

Patient Discharged



Skin fully closed with no bleeding or drainage. Surface is dry with peeling epidermis, discoloration, and thickened evolving scar tissue.

Outpatient Follow Up, Post Discharge

CONCLUSION:

- GV/MB PU foam was safe, well-tolerated, and highly effective in promoting secondary intention healing in a preterm neonate
- Supported closure of a large abdominal wound with no recurrent infection during treatment
- Discontinuation post-discharge led to wound regression and readmission
- Case underscores the importance of:
 - Continuity of advanced wound care practices
 - Caregiver education and support
 - Addressing health literacy and post-discharge barriers