**Background**

- **Epidermolysis bullosa (EB)** is a rare, often genetic, skin disorder, due to abnormal collagen formation that causes loss of intracellular bridges in the dermo-epidermal junction or in the epidermis basal layer.
- Blister and bullae form in response to minor shear forces or friction applied to the skin.
- EB patients often require surgical procedures including esophageal dilations, dental restoration, orthopedic surgery (syndactyly release and amputation), or gastrostomy tube placement.
- Due to the severe nature of their skin disease and mechanism of injury, patients with EB pose a huge challenge to the anesthesiologist.
- Securement of intravenous (IV) catheters (peripheral and central) and peripheral nerve catheters has historically been challenging.
- Traditional securement dressings are made with acrylic, and removal causes substantial injury.
- A novel dressing, the IV Clear (Covalon Technologies Ltd.; Figure 1), antimicrobial silicone dressing, was recently introduced for itsatraumatic adhesive and gentle antimicrobial properties that make it ideal for use in this patient population at high risk for skin injury. The IV Clear dressing is transparent, occlusive, and made with gentlesilicone-based adhesive (Figure 1 & 2). The silicone product is safe to use in patients with EB, as it is not as adhesive as traditional dressings. The dressing releases from the skinatraumatically with water, saline, or spray adhesive remover without causing damage. It is impregnated with non-irritating concentrations of chlorhexidine and silver for a dual-antimicrobial protective effect.

**Case Events**

- 40-year-old male, recessive dystrophic EB (RDEB) presented for revision amputation of his right arm due to squamous cell carcinoma.
- A 22-gauge peripheral intravenous catheter (PIV) was placed in his left forearm and secured with an IV Clear dressing and outlined with Myelitac silicone tape (Mohlycke Healthcare US, Figure 2).
- Induction: propofol, fentanyl, and lidocaine.
- Maintenance of spontaneous ventilation, supplemental oxygen provided.
- A 6.0 mm nasotracheal tube was placed in the left nare via asleep fiberoptic bronchoscopy.
- Additional 20-gauge PIV was obtained in the left leg and secured as described above (Figure 2B).
- In addition, a right infractacular nerve block was performed and a peripheral nerve catheter was placed with ultrasound guidance.
- Peripheral nerve catheter secured with the IV Clear dressing (Figure 2C).
- Anesthesia was maintained with inhaled sevoflurane and a ketamine infusion.

**Case Events, continued**

- There were no noted intra-operative complications, and the patient was extubated awake, recovered in the post-anesthesia care unit, and went to the general care floor.
- The patient had excellent regional analgesia and pain control.
- Discharged from the hospital on postoperative day (POD) 2.
- The patient experienced no skin damage from the IV dressing.
- The patient went home with the infractacular pain catheter in place and successfully removed this catheter at home on POD 3.
- Upon removing the pain catheter, the patient noted no skin damage.
- To date, the IV Clear dressings have been used on approximately 26 EB patients without incidence of skin damage or other adverse events. One patient who spent several months in the hospital underwent several consecutive dressing applications without incident.

**Conclusion**

- In our experience, use of the Covalon IV dressing in EB patients has improved the safety of indwelling catheter placement and securement without causing injury.
- As a tertiary EB referral center ("center of excellence"), we recommend the use of Covalon IV Clear dressings for patients with EB.

**References**

- https://covalon.com/products/iv-clear (Product website.)

**Author Contact Information and Disclosures**

Angelica.Mancone@childrenscolorado.org
Kim.Strupp@childrenscolorado.org
Norah.Janosy@childrenscolorado.org
Melissa.Brooks@childrenscolorado.org

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