

# The Management of Paediatric Epidermolysis Bullosa Lesions with Polymeric Membrane Dressings\*

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## INTRODUCTION

This case study evaluates the use of Polymeric membrane dressings for children with Epidermolysis Bullosa (EB). EB is defined as a rare group of inherited skin disorders, involving blistering of the skin and occasionally mucous membranes, due to missing proteins in the skin. Recurrent blisters, skin fragility and painful chronic wounds typify this disease. There are four main types of EB with many sub-types. Management of these wounds requires a non-adhesive and non-adherent dressing to reduce trauma, pain and bleeding on removal<sup>1</sup>.

Based on recommendations from DebRA UK (Dystrophic Epidermolysis Bullosa Research Association), Polymeric membrane dressings have recently been used successfully in treating EB wounds overseas. Patients with EB are often reluctant to bath due to pain and discomfort, so a non-adherent dressing which contains a cleanser is a positive move forward in the development of dressings. Polymeric membrane dressings contain glycerin which is reported to reduce odour and overgranulation. It further acts as a moisturizer which helps prevent adhesion to the wound bed and the fragile surrounding skin. The dressing has a semi-permeable thin film backing which provides a barrier to fluids and micro organisms, and is highly absorbent due to the superabsorbent starch co-polymer. These dressings are also available impregnated with silver, which is a valuable option for this group of patients, whose wounds are often infected or critically colonised.

## Patient A

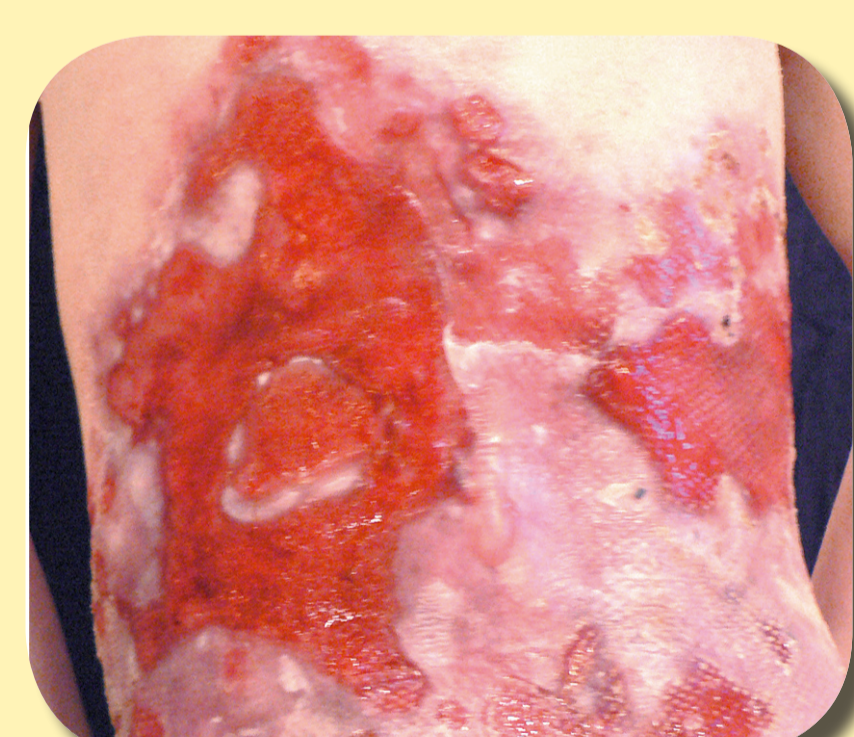
Patient A is a seven year old boy. He has Recessive Dystrophic EB and his most challenging wounds are on his back. These wounds have been present for five years and were gradually increasing in size. A common factor with many patients around the world is a reluctance to bath. Bathing for these young children can be traumatic, even when pain relief is given, because anticipatory pain is related to procedural pain in patients with chronic wounds. Full dressing changes occurred 3 times a week with bathing, however his back was sometimes changed every second day due to the wound size and volume of exudate.

For the purpose of this study the wounds were split into left and right. On the left side Polymeric membrane dressing treatment was commenced. A single sheet of the dressing was secured around his torso with a crepe bandage. The right side was used as a control, and his usual regime of a primary and a secondary dressing continued.



By tracing the wound onto a wound chart at Week 1 the left sided wound measured 136 cm<sup>2</sup>, with moderate amounts of exudate. The wound had a thickened epithelial edge, probably due to delayed healing. There were areas of hypergranulation and the wound bed had a dark red beefy appearance. The surrounding skin was fragile and crusty. The right wound measured 62cm<sup>2</sup> and was also hypergranulated and beefy.

After 4 weeks of treatment with Polymeric membrane dressings a marked decrease in the left wound size to 122cm<sup>2</sup> was noted, a difference of 14cm<sup>2</sup>. There was no significant change in the control wound, which measured 60cm<sup>2</sup> after week 4. The amount of exudate from the left wound after using Polymeric membrane dressings increased in the first 4 weeks of treatment, resulting in daily changes. However this exudate caused no maceration of the surrounding tissue. The exudate slowly decreased allowing 2nd – 3rd daily dressing changes, in accordance with the patients' usual routine.



After 8 weeks there was marked contraction of the left wound and it had reduced in size to 93cm<sup>2</sup>. A total reduction of 43cm<sup>2</sup> in 8 weeks. The edge of the wound was flatter and the surrounding skin was also noted to be healthier in appearance. The control wound measured 56cm<sup>2</sup> reducing only by 6cm<sup>2</sup>. This wound remained hypergranulated and beefy.



As a direct result of this short trial, Patient A's mother continued to use Polymeric membrane dressings over both wounds. Two months later the family were able to go on holiday, during which time they did not bath their son for 1 week, merely giving him a full dressing change twice. After this week the Polymeric membrane dressing helped develop a clean and healthy wound, with flat epithelial edging and minimal hypergranulation.

### The mother & patient reported:

- Improvement in surrounding skin
- Cleaner looking wound
- Good management of exudate
- Dressing was comfortable
- Ease and speed of application
- No trauma: non-adherent
- No change in pain management



## Aim

The aim of this case study was to assess the efficacy of Polymeric membrane dressings in two patients with EB. This included ease of application and removal, control of exudate, rate of healing and any change in pain management. The findings suggest that the Polymeric membrane dressing is an effective dressing for the treatment of EB wounds, demonstrating pain free, atraumatic dressing removal and improved healing, resulting in a cleaner wound.

## METHOD

Two children with Epidermolysis Bullosa (EB) were selected for this case study.

Patient A (Recessive Dystrophic EB) has chronic wounds all over his body, but the wound selected to be treated with Polymeric membrane dressings was a large, painful, chronic wound on his back. Base line measurements and clinical photographs were taken by the Clinical Nurse Consultant over an 8-week period. The wound was outlined in permanent marker on cling wrap and traced onto a chart for accurate measurement.

Patient B (Non-Herlitz Junctional EB) has chronic wounds on his arms and legs. Only photographs, no measurements, were taken of this patient due to time and distance constraints. Multiple limb wounds, treated with the Polymeric membrane dressings were documented.

## Patient B

Patient B has Non-Herlitz Junctional EB. He is two years old and has chronic wounds on his face, legs and arms. His bath and dressing change regime was 3 times a week, using a primary and secondary dressing, secured with a tube dressing. This regime was necessary but gave the child and family a very irregular lifestyle.

His mother had recently noticed itching and a rash on his skin, underneath his dressings. A possible sensitivity to silicone had developed. His mother therefore ceased his usual dressings and began using solely Polymeric membrane dressings secured with the tube dressings.



Fig 1 shows the rash. After 3 days use of Polymeric membrane dressings the rash had resolved (Fig 2). When his mother had no dressings remaining and restarted the previous dressing regime, the rash returned. Since accessing a regular supply of Polymeric membrane dressings the patient's rash has not returned.



Fig 3 shows the left leg wound before Polymeric membrane dressings were implemented. 1 week later the wound has dried and shows rapid healing (Fig 4).



Fig 5 demonstrates wounds on his right leg prior to Polymeric membrane dressing treatment. 1 week later (Fig 6) one wound has healed and the others show definite signs of contraction with no maceration of the surrounding skin.

### The mother reported:

- Faster healing of blistered areas
- Cleaner wounds and improved healing of wounds.
- Excellent management of exudate
- No itching of surrounding skin
- No trauma: Non-adherent
- Ease and speed of application
- No change in pain management
- Baths and dressing changes reduced to twice a week giving the child and the family increased quality of life with a dressings-free weekend and a more regular routine.



## DISCUSSION

The use of Polymeric membrane dressings in this small case study resulted in a reduction of wound size with improvement to the surrounding tissue. The dressing was comfortable, quick and easy to use, non-adherent and able to manage large amounts of exudate. This case study supports the larger case study carried out by DebRA UK which included adult and paediatric patients. As in this study, DebRA UK also showed that along with many other benefits, Polymeric membrane dressings can help reduce the size of chronic wounds which have remained unchanged for many years<sup>2</sup>.

## RECOMMENDATIONS

This small study has demonstrated that the Polymeric membrane dressing is an effective treatment option for both Recessive Dystrophic and Non-Herlitz Junctional EB paediatric wounds. Further work will be needed to determine longer term outcomes. However, the factors discussed indicate that Polymeric membrane dressings would be a valuable addition to the EB dressings choice.

\*PolyMem® and PolyMem® Silver Wound Dressings

Manufactured by Ferris Mfg Corp, Burr Ridge, IL 60527 USA. This case study was unsponsored. Ferris Mfg. Corp. contributed to this poster design and presentation.

## References

1. Atherton D & Denyer J. An Outline for Professionals: DebRA UK 2003
2. Denyer J, Pillay E, Clapham J The Use of PolyMem® Dressings in the Management of Chronic Wounds in Epidermolysis Bullosa DebRA UK 2008