

Retrospective Case Series of Keragel or Biobrane on Paediatric Facial Burns

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Introduction

KK Women's and Children's Hospital is the primary paediatric hospital in Singapore treating paediatric burns. The Department of Plastic, Reconstructive and Aesthetic Surgery consults an average of 23 paediatric burns a month, of which facial burns is a common area for dressing coverage. Application of dressing on facial burns in a paediatric setting can be challenging as children are very active and the humid weather in Singapore makes dressing difficult to keep on.

The department treats facial burns with 2 different approach, either with Keragel or Biobrane application. Keragel is a thick hydrogel consisting of keratin protein which provides a moisture rich environment¹. It delivers Replicine™ Functional Keratin® which aids in epithelialisation of a wound¹. The use of Keragel is simple with just an application of the gel to the entire wound surface twice a day without the need for dressing coverage.

Biobrane is a biosynthetic dressing extract from porcine dermal collagen secured to a silicone membrane². It is flexible and has the ability to stretch with patient movement². Application of Biobrane however requires a sterile environment in the operating theatre as the dressing needs to be secured with stitches/staples or securement tapes.

Aim

This case series aim to evaluate the healing rate of using Keragel versus Biobrane on paediatric facial burn. The cost of care and pain management would also be explored.

Method

Retrospective data of 4 paediatric patients with partial to deep partial thickness burns to the face were selected from the year 2017 to date. All selected patients were between the age group of 6 months to 16 years of age. 2 patients were treated with Keragel dressing on their facial burns while the other 2 patients were treated with Biobrane dressing.

Result

Patients on Keragel dressing took an average of 7-14 days to heal completely, while the patients on Biobrane dressing took beyond 7 days of healing as the burn wound converted to deeper burns. The cost of Keragel was SGD\$155 per tube whereas Biobrane dressing have an average cost of SGD\$450 per sheet excluding operating theatre and admission cost.

Patients on Keragel dressing can be treated in an outpatient setting where the nurses will clean the burn wound and teach parents on the application of Keragel. Parents of patients on Keragel dressing provided feedback that the application was easy and patients experienced less pain and anxiety.

As for patients on Biobrane dressing, the application has to be done under sterile environment in the operating theatre which requires admission to the hospital. Patients were required to return to the outpatient setting to remove the stitches/staples or securement tapes with pre-medications given. It was noted that these patients had partial areas of the wound that converted to deeper burn and was given Keragel to manage the wound.

Conclusion

Keragel is simple and easy to use, and can be taught to parents to apply at home. It has also shown to accelerate wound healing with less trauma, pain, cost and the number of visits to the clinic. Although the use of Biobrane in this case series did not show benefits, it has been used on large superficial to partial thickness areas with good results.

Keragel Application Case 1
Healed within 11 days



Keragel Application Case 2
Healed within 9 days



Biobrane Application Case 1
Healed more than 7 days



Biobrane Application Case 1
Healed more than 7 days



Disclaimer

Did not receive any funding and financial support for these cases.
All pictures of people in this presentation are solely for education purpose and written consent has been obtained from the people involved.

References

1. Patricia, M. P., Joel, G. B. S., Jose, V., Marjana, T. C., Irena, P., Olivera, S., Robert, S. K., & Stephen, C. D. 2012. Keratin dressings speed epithelialization of deep partial thickness wounds. *The International Journal of Tissue Repair and Regeneration*, 20 (2), 236-242. <https://doi.org/10.1111/j.1524-475X.2012.00768.x>
2. Rogers, A. D., Adams, S., & Rode, H. 2011. The Introduction of a Protocol for the use of Biobrane for facial burns in children. *Plastic Surgery International*, 2011, 1-5. <https://doi.org/10.1155/2011/858093>