

Flaminal® for wound healing following surgical treatment of aplasia cutis congenita in a baby boy with Adams-Oliver Syndrome

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Summary

A newborn male was born with an 11cm x 8cm defect of the crown and vertex scalp with very thin skin covering the brain which required reconstruction. This case study follows him over the three months from birth reviewing the wound management following three episodes of surgical intervention

Introduction

Adams-Oliver Syndrome (AOS) is a rare congenital disorder characterised by defects of the scalp and cranium (aplasia cutis congenita), transverse defects of the limbs and mottling of the skin. One of the specific features of AOS is aplasia cutis congenita (ACC) a benign isolated condition characterized by the absence of localized or widespread areas of skin at birth affecting the posterior part of the skull with or without underlying defect of the cranial bone. The size of the lesion is variable and may range from solitary round hairless patches to complete exposure of the cranial contents.

Case study

After an uncomplicated pregnancy and birth at term, a newborn male was noted to have an 11cm x 8cm defect of the crown and vertex scalp with very thin skin covering the brain which required reconstruction. This case study follows the journey of this little boy over an 86-day period and the wound management following three episodes of surgical intervention.

Week 1

At week one the area was covered with a dry eschar which was redressed with honey. Surgical debridement of the necrotic area followed by reconstruction with skin flaps and a split skin graft was planned but abandoned in theatre due to difficult arterial access. AOS was suspected as there were ongoing problems with ischaemia coupled with cutis marmorata telangiectatica, skin changes which give the skin a marbled bluish to deep purple appearance; a hallmark of AOS.

Week 2

Nursing staff noted discharge of straw-coloured fluid (which tested negative for glucose) over the area of the sagittal sinus, the large vein that runs on the top of the skull. Aquacel, a hydrofiber dressing composed of sodium carboxymethylcellulose was utilised to absorb the wound fluid transforming into a soft gel, thus maintaining a moist wound environment.

Week 3

The sagittal sinus was more visible and an increase in slough prompted the decision to discontinue the Aquacel and change to Flaminal® Hydro, an enzyme alginate, to debride the wound whilst managing the moisture balance. By day 23 the wound was slough free with increasing amounts of granulation tissue present and evidence of the eschar beginning to separate.

Week 4

On day 28 nursing staff noted bleeding through the dressing with a rapid deterioration in the baby's general condition and colour becoming mottled and grey. He rapidly decompensated with significant bleeding and required resuscitation. Surgicel, an absorbable haemostat, was applied to control the bleeding and he was taken to paediatric intensive care unit. A rotational scalp flap and skin graft undertaken on day 30.

Week 5

The rotational scalp flap and skin graft was successful with cover of the sagittal sinus noted on day 38. Flaminal® Hydro was continued throughout to the remaining necrotic area, which was debriding. Although clinically well, bone swabs tested positive for methicillin resistant Staphylococcus aureus (MRSA); eradication therapy was commenced.

Week 6

He had a further trip to theatre on day 45 for an advancement flap to the left side with debridement of non-viable bone and the application of a split skin graft. Wound management with Flaminal® Hydro was continued.

Week 7

Flaminal® Forte, which has a higher proportion of alginate, replaced Flaminal® Hydro for wound management. Infection control advised that topical treatment could be continued.

Week 8

A small area of flap on the margin of the wound died and it was possible to express pus from beneath the flap.

Week 9

By day 65 there was only one raw area remaining measuring approximately 1cm x 3cm.

Week 10

A large flake of necrotic scalp was removed on day 70 with no underlying pus evident.

Week 11

Flaminal® Forte was continued.

Week 12

Complete healing was achieved at day 86 and the baby tested negative for MRSA.

Clinical benefit of Flaminal®

Throughout the management of this complex wound it was imperative that the area was free from any infection which would have compromised the grafts. Necrotic tissue and slough are excellent breeding grounds for any bacteria; hence speedy removal is of paramount importance. Flaminal®, an antimicrobial enzyme alginate, combines the benefits of hydrogels and alginates with an antibacterial enzyme system to create and maintain a moist wound-healing environment. Following recommendation from the infection control team, Flaminal® Forte was continued until complete healing was achieved, the rationale being that the wound would not be MRSA clear until it had healed; the final wound swab was clear.

Conclusion

Flaminal® facilitated debridement and reduction in the wound bioburden plus eradication of MRSA, in the management of this baby with a rare genetic disorder. Flaminal® proved itself to be a product that could be utilised throughout the healing trajectory. In rare conditions and their concomitant wounds there are often no guidelines to follow with regard to a gold standard management of these challenging wounds. However employing sound principles utilised in the management of other complex wounds and transferring this knowledge assists in decisions based on a sound rationale ensuring a successful outcome for the patient.



Start



Week 3



Week 4



Week 11



Week 12