


# The Use of a Novel Dressing Cutimed® Sorbact® in Managing an Infected Wound in a Neonate

Nihal A Weerasena FRCSEd, FRCS(CTh), Consultant Cardiothoracic Surgeon  
Elizabeth McGinnis MSc, RGN, RM, Cert DN, Nurse Consultant - Tissue Viability

The Leeds Teaching Hospitals   
NHS Trust

## INTRODUCTION

Very little wound care research is carried out in children, especially neonates. This is partly due to assumptions that the process of wound healing is the same for children as in adults, but also due to concerns over legal and ethical issues in carrying out research in this population<sup>1</sup>.

While it is known that wound healing occurs more rapidly in paediatrics and is generally uneventful, this can easily be compromised by malnutrition, hypotension, oedema or infection. Neonates are at particularly high risk of sepsis which can originate from a bacterial colonisation and proliferation from a wound.

Development of a wound infection after implantation of an epicardial pacemaker is quite a serious complication. The sepsis could lead to the development of a bacteraemia, which in turn could lead to persisting infection due to the foreign body (i.e. the pacemaker lead and generator). Therefore prompt treatment both locally and systemically is required. Once the protective layer of the skin is broken, bacteria may spread rapidly, leading to infection of the deeper tissues, including the sternum. The consequences of such events could be the development of osteomyelitis, and the possibility of endocarditis.

### References

1. Baharestani MM (2007). An overview of neonatal and pediatric wound care knowledge and considerations. *Ostomy Wound Management*. Vol. 53 (6)
2. Hampton S (2007). An evaluation of the efficacy of Cutimed Sorbact in different types of non healing wounds. *Wounds UK*. Vol. 3(4)
3. Mulder GD, Cavorsi JP, Lee DK (2007). Polyhexamethylene biguanide: an addendum to current topical antimicrobials. *Wounds*. Vol. 19 (7)

## METHOD

A premature neonate (38 weeks gestation) who was born with congenital complete heart block underwent an implantation of a pacemaker at three days of age. The patient was transferred back to the local hospital two days following surgery, after making an uneventful recovery.

However, three days later the patient was readmitted with a diagnosis of sepsis or necrotising enterocolitis. On admission it was noted that she had a discharging sternotomy wound. It was found the patient was septic. Subsequent investigations revealed that she was MRSA positive for skin and wound swabs. Blood cultures were negative. She was commenced on antibiotics (Vancomycin) and a referral was made to the Tissue Viability service for advice on wound management.

An assessment by the Tissue Viability Nurse Consultant identified the patient as having a critically colonised wound (based on the wound dehiscence, the presence of slough and necrotic tissue, MRSA positive wound swab but minimal local erythema and oedema). The patient was at high risk of further deterioration with severe consequences as described above due to her current sepsis and immuno-compromised state. Trust guidelines on the prevention and management of wound infection advocate the use of a topical antimicrobial as an adjunct to the systemic antibiotics. The dilemma was a choice of product suitable for use with a premature neonate.

While the epidermal and dermal layers of an infant this age are similar, they still remain extremely fragile. The absorption of chemical agents through the skin and wound bed has not been sufficiently studied to enable product manufacturers to provide assurance on safe use in this age group. A novel dressing was chosen Cutimed Sorbact, which binds to bacteria irreversibly without an active chemical agent. The hydrophobic interaction and the special coating of the dressing help to remove the bacterial<sup>2</sup>.

The dressing was applied to the wound in a double layer and covered with a film dressing. This was changed twice a week. She was discharged back to the local hospital twenty five days after her initial readmission.

## RESULTS

The use of Cutimed Sorbact was successful in the management of this neonate following MRSA colonisation of her surgical stenotomy wound. An initial photograph taken on 8.10.09 shows the extent of the wound. The wound was being treated with Cutimed Sorbact at this time. The final photograph was taken at the surgical out patient clinic following completion of treatment.



Initial photograph showing extent of wound



Photograph following completion of treatment

## CONCLUSION

An antimicrobial dressing which enhances the normal physiological process of wound healing without affecting fibroblast formation or potential absorption into the tissues has a benefit in reducing the risk of infection<sup>3</sup>. Cutimed Sorbact has very strong hydrophobic properties due to the dialkylcarbamoylchloride (DACC). This physical interaction leaves very little possibility of development of resistance to micro-organisms. The use of this dressing in with this patient contributed to a successful outcome from her infection.