

# EVALUATION OF AN ENZYME ALGINOGEL\* ON A NEONATAL COMPLEX DEHISCED SURGICAL WOUND

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## Introduction

The accepted definition of dehiscence is the disruption or breakdown of a surgical wound; dehiscence of the wound after abdominal surgery is a serious complication. It ranges in severity from a failure of the deeper portions of the abdominal incision to join, initially unnoticeable postoperatively but resulting later in a hernia, to the sudden opening of a wound post surgery revealing connective tissue, or in extreme cases protrusion of abdominal contents. Cause of dehiscence tends to be one of three factors; systemic such as severe anaemia, local such as infection or the technique followed in making and suturing the surgical incision; and postoperative such as abdominal distension (1).

Care planning for this type of complex wound is further compounded when the patient is a neonate; this is partly due to an overall lack of understanding and research around neonatal and paediatric patients (2).

This case study describes a neonate with a complex dehisced abdominal surgical wound. Baby A was born prematurely with necrotizing enterocolitis; this is a condition most commonly seen in preterm infants where areas of the gut become inflamed and die (3). Unfortunately this baby needed a laparotomy and stoma formation to resolve this. The laparotomy wound then dehiscd and became very sloughy (figure 1).

There were initial difficulties with dressing selection as stoma present in central part of wound, and mucous fistula at left aspect; this resulted in issues with adhering dressings, and with faeces coming into contact with the open wound bed. After slough debridement the wound became static, surrounding skin was red and blistering from continued stoma leakage (figure 2).



Figure 1: 25/7/16

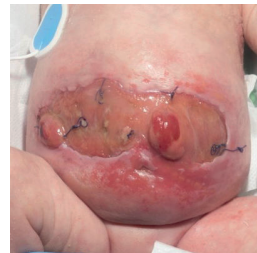


Figure 2: 9/8/16



Figure 3: 16/8/16



Figure 4: 1/9/16

## Method

We decided to try applying an enzyme alginogel to the wound bed that was secured with a film dressing. The reasoning here was that this would provide an antimicrobial barrier that would maintain a moist clean wound bed and prevent any leaked faeces from coming into contact with the wound bed. It would also be non-adherent and atraumatic, reducing discomfort at dressing changes.

## Results

We had excellent results from this method. The wound progressed very quickly after introducing this dressing selection (figure 3), and was healed within a month (figure 4). Feedback was positive from the nursing staff, who found that this was an effective and simple dressing to complete. Baby A's mum was very pleased with the results and was reassured by the fact that the enzyme alginogel contained naturally occurring enzymes which were safe for her child. Baby A's overall outcome was improved from this dressing choice, and ultimately wound healing meant she could have a successful stoma reversal later on that month.

## Discussion

The enzyme alginogel will prevent bacterial infection because it contains 2 naturally occurring enzymes (glucose oxidase and lactoperoxidase). These enzymes kill bacteria without damaging granulating/epithelializing tissue. The gel also absorbs exudate, and its soft consistency is soothing for wound beds; this in turn promotes patient comfort. (4)

## Conclusion

In this case study the enzyme alginogel was shown to be an effective dressing choice for use in a dehiscd surgical wound in a neonatal patient. There is generally an accepted lack of evidence base around wound care and neonatal/paediatric patients so we can also conclude there is a need for more research following this successful case study.

Brand Name: Enzyme Alginogel\*, Flaminal

## References:

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- 3) "Necrotising enterocolitis" 2017, Great Ormond Street Hospital Website
- 4) White R (2006) Flaminal: a novel approach to wound bioburden control, Wounds UK 2(3): 64-69