

# An adhesive hydrocellular dressing in the treatment of paediatric patients with extensive soft tissue trauma.

Geatano de Vincentis\*, MD, Giuseppe Caracciolo\*, MD, PhD, A. Anselmi, RN, A. Andriessen\*\* RN, MA, CNS, S. Rowan\*\*\*, RN, CNS.

\*Ospedale Pediatrico "Santobono" Azienda di Interesse Nazionale ad Alta Specializzazione Via M. Fiore, 6 - 80129 NAPOLI, ITALIA. \*\* ICS, Malden, NETHERLANDS, \*\*\* San Casciano (FI), ITALY.

## INTRODUCTION

This paper describes the effective performance of an adhesive hydrocellular polyurethane foam dressing in combination with a hydrogel in the management of 2 children with extensive soft tissue trauma. In degloving, skin and subcutaneous fatty tissue are torn off the underlying fascia by a strong tangential crushing force.

The management of complicated fractures in combination with extensive soft tissue trauma due to degloving is complex, especially in young children. As the blood vessels are also damaged, the detached flap of skin becomes necrotic due to lack of blood supply. When entire parts of the body are detached, a distinction is made between total and subtotal amputation. In some cases re-transplantation is possible.

The treatment consists of surgical intervention, in combination with complex wound management. Secondary healing should be attempted due to the risk of infection.

Current wound management regimes comprise tulle grass, standard absorbent dressings or gauze impregnated with disinfectants. The disadvantage of tulle grass and many other contact layers is that in some instances it may adhere to the wound, thus causing damage of granulation tissue and discomfort upon removal of the dressing.<sup>(1)</sup> ALLEVYN\* Adhesive is shown to be effective in the treatment of various wound types healing by secondary intention. Comparative studies have shown that ALLEVYN Adhesive encourages rapid healing.<sup>(2)</sup> The dressing is easy to use, reduces pain and does not cause trauma to the wound site on removal, suggesting improvements could be made for the above mentioned indication, compared to conservative dressings.<sup>(2) (3) (4)</sup>

## THE STUDY

The present dressing regime involves parafin gauze covered with standard absorbent dressings. Dressing changes take place up to three times a day, depending on the wound condition. In deep wounds, Povidone iodine soaks are used to fill out the cavity wound, and covered with a standard absorbent dressing. Frequency of dressing changes are up to three times a day.

The trial dressing, ALLEVYN Adhesive, was used during the initial treatment period until the wounds were completely debrided or had healed. The dressing was left in place for approximately 3 days, depending on the wound condition. Wound assessment took place every 7 days, using a questionnaire, and at the end of the evaluation. We evaluated the following: handling properties - ease of application - ease of removal, patient comfort, pain upon dressing removal, efficacy, complications.

## THE CASES

### Case I

A 6-year old boy, was run over by a car on 26/07/96. Due to the accident, he suffered an extensive laceration, fluid loss and progressive necrosis of the entire left leg. The tibia bone was fractured in an uneven manner along the length of the bone and damage to the left tibia at the level of the joint was present.

The boy was transferred to our ward on 4/09/96 with large open wounds which appeared infected. Surgical intervention was performed, he received antibiotics and underwent hyperbaric oxygen therapy. On 05/09/96, we started treating him with INTRASITE\* Gel and ALLEVYN Adhesive dressings. Initially dressing changes took

place every 2 days. On 17/09/96 after the wound was fully debrided skin grafting was performed with a graft taken from the anterolateral area. The donor site was covered with ALLEVYN Adhesive and healed within 4 days. In addition rehabilitation therapy was started. The patient is currently in an excellent condition and was released from the hospital on 10/10/96.

### Case II

An 8-year old boy, was admitted to our hospital with poly-trauma. He was run over by a tractor, had an injury to the left parietal region of the head with complete loss of skin and hair. There further was extensive degloving of the right thigh with total loss of the skin and extensive damage to the knee joint, involving ligaments and the circulation of the knee.

On the left-hand side, he had a full thickness wound in the gluteus area with muscular damage and vast amounts of skin loss, effecting all the left gluteus as far as the sacral lumbar area.

Due to the nature of the trauma, an above knee amputation to the right leg was performed. The patient's condition was critical and he was kept in the intensive care unit. On 17/04/97 the patient underwent surgical debridement under total anesthesia. He received Hyperbaric oxygen treatment. The dressing regime consisted of cleansing with 2% chlorhexidine solution and the application of ALLEVYN Adhesive. Dressing changes took place every two days on average. ALLEVYN Adhesive was effective in controlling the copious amounts of exudate. Moist wound healing was promoted to an optimum, allowing for the wound to granulate well.

On 22/05/97 skin grafting was performed to achieve closure of the wound.

## CONCLUSION

In both cases ALLEVYN Adhesive was reported easy to apply and remove. Patient comfort was high and the dressing did not cause pain upon dressing removal. There was no adherence of the dressings or damage to the wound bed observed. ALLEVYN Adhesive was effective in controlling the copious amounts of exudate. A moist wound healing environment was provided, promoting growth of granulation tissue. ALLEVYN Adhesive was observed to be effective in the treatment of these two pediatric patients with extensive soft tissue trauma.

## REFERENCES

- 1) Thomas, S., Pain and wound management, Nurs. Times, Community Outlook Suppl., 1989, 85, 11-15.
- 2) Foster, AVM., Edmonds, ME, Comparing 2 dressings in the treatment of diabetic foot ulcers, Journal of Wound Care, Vol 3, No5, 1994.
- 3) Manniche, L., Data on file S&N. 5363 AUS/CLP/UK/992
- 4) Shutler, S., Stock, J., Bales, S., Harding KG., A multicentre comparison of a Hydrocellular adhesive dressing and a hydrocolloid dressing in the management of stage 2 & 3 pressure sores, Poster, 5th EWMA Conference 1995. CT89/16.

\* Trademarks of Smith & Nephew

## CASE II



Fig. 1. On the left-hand side, a full thickness wound in the gluteus area with muscular damage and vast amounts of skin loss, effecting all the left gluteus as far as the sacral lumbar area.



Fig. 2. Allevyn Adhesive in place. Although there was extensive bleeding, the absorbent capacity of the dressing was sufficient to be left in place for two days. No leakage occurred.



Fig. 3. 17/04/97 Situation after surgical debridement.



Fig. 4/5. Allevyn Adhesive dressing in place on left buttock, right stump and left upper thigh.



Fig. 5.



Fig. 6. Wound condition of the right stump, before grafting.



Fig. 7/8. Grafting is performed on the left buttock and right stump.



Fig. 9. Allevyn Adhesive dressing used over the graft on the right stump. The dressing was easy to mould and was left in place for 5 days, after which the graft had taken completely.