Case Study

Atrauman®: A descriptive evaluation by historical review and by one specific case history

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Introduction

The concept of promoting wound healing by maintaining a moist wound environment is now well established and supported[1, 2]. In recent times the concept of wound bed preparation has helped clinicians focus more closely on evidence-based practice[3]. Today, as more wound care products come to market, dressing selection is becoming more complex[4]. As the patient's wound conditions change, so the clinician must undertake a review of the wound and decide whether the product used is still appropriate[5].

There is no such thing as the ideal dressing, although awareness of performance and material characteristics are vital for the clinician and patient alike[6]. When considering a new product for inclusion in the Trust's formulary, versatility and suitability for a wide range of wound types should be taken into account. Clinicians should always justify why they use and promote a particular product[7].

Methods and Issues

The Trust had used silicone-based products for some time with good results. However, being expensive, they had been used sparingly by ward staff who sometimes used paraffin-based products as a cheap substitute. In addition, acute hospitals often move patients from ward to ward, which can sometimes lead to dressing changes being overlooked. This results in pain and trauma caused by the removal of dried-out paraffin gauze dressings that have been left for several days.

Atrauman is described as a ***"hydrophobic polyester tulle support fabric impregnated with a non-medicated ointment of triglyceride neutral fats".***

It is intended as a primary dressing and is designed to fit closely to the wound topography to allow exudates to pass through the mesh/net to be absorbed by a secondary absorbent dressing. Pliable in nature, Atrauman can be cut to shape to fit wound contours. Being water repellent and with a smooth construction, the tulle counteracts any tendency to adhere to the wound bed, reducing the risk of new tissue growth penetrating the mesh.

Therefore it is safe to believe that if a product such as Atrauman is available, and is seen to be effective and affordable, dressing adherence would no longer be an issue.

Aims

It was decided that as Atrauman had undergone exacting trials elsewhere and was licensed for sale and freely available for purchase by the NHS, the simplest approach would be to conduct an evaluation of the product by substituting the silicone-based product with Atrauman.

Table 1: The principles involved for the evaluation

1. Instead of using a silicone-based dressing, Atrauman would be used to identify tolerance to the product when treating acute and chronic wounds/conditions; reduction in wound surface area or improvement in exudates handling would be deemed positive
2. Maceration of periwound
3. Hypergranulation through mesh
4. Ease of application and removal
5. Conformability
6. Trauma – pain, bleeding at dressing change
7. Adherence to wound bed/skin
8. Acceptable to patients and staff
9. Cost comparisons[8]

Over a two-year period more than 90 patients with a wide range of wounds and conditions were dressed with Atrauman.

Table 2: Suitable wounds that were dressed with Atrauman
Abrasions
Lacerations/skin tears
Cellulites with exudates handling issues
Vascular ulcers
Orthopaedic lesions (post-operative)
General surgery
Pressure ulcers – grades 2-3 with exudates
Grafts – donor and recipient sites
Burns – minor
Miscellaneous – sweat-induced lesions under skin folds/breasts

Over this period no adverse effects occurred in the use of Atrauman, and at no time was a substitution made to replace Atrauman with another similar product as a result of product performance failure.

An understanding of wound maceration is vital for the overall successful management of wounds[9], as well as an understanding that wounds need to be moist but not wet in order for healing to proceed[10].

When using Atrauman, maceration of the periwound was never a problem that could not be solved. However, when lesions such as cellulitis or extensive leg ulcers are highly productive of exudate (i.e. secondary dressing changes one, two or three times per day), sogging of the wound or surrounding tissues can be a major problem. *Günnewicht & Dunford*[11] comments that the treatment plan should include the use of a proprietary barrier film, usually spray based, as exudate sometimes leaks onto areas of healthy skin, particularly if the patient keeps the legs dependent.

At no time during the two years did hypergranulation occur. The only problem encountered on removal occurred when a patient in an Out Patient Clinic had had Atrauman in situ for 10 days. This was solved by gently massaging 3 fresh layers of Atrauman onto the old 'dried' layer, which subsequently lifted after an hour.

Procedural or incident pain or trauma on application or removal was never encountered. Over the two years, a wide range of patients re age, gender, educational and previous history commented on the **comfort** of the dressing[12].

Specific Case History

Lizzie is well known within the hospital as she has had many care events associated with being overweight, resulting in acute and chronic conditions.

On last admission (May 2004) she was aged 52 and weighed 242kg. She was suffering from acute fluid overload compromising cardiac and kidney function, with severe orthopnea, ascites, and bilateral leg oedema and right leg cellulitis, from toe to mid thigh. Exudate levels were described as very high by the ward staff.

Initial care involved arranging the erection of a Liko gantry hoist, provision of a fully profiling Huntliegh-Healthcare bariatric bed with built-in weigh scales and a Huntliegh Nimbus-Logic pressure relieving dynamic mattress.

Plan of care included the above, plus fluid management, intravenous antibiotics for the cellulitis and wound management products for the cellulites. The right leg was erythematous, with skin desquamation present with many ulcerated painful areas. See image 1, overleaf (at 7 days post admission).

"trauma on application or removal was never encountered"

With experience, skilled management can improve wound conditions dramatically providing other aspects of care are in place such as fluid balance, incontinence products, appropriate antibiotics etc. Other factors include staff that are willing to take on the challenges associated with the bariatric patient, cooperation of the patient herself and the awareness that dressing selection for the patient can be difficult due to unique demands[13].

The care of the leg included:

- Overall skin protection with proprietary barrier film spray;
- Primary dressings of 30x20 cm silicone-based product from ward held stock. This was changed to Atrauman after an initial review – see discussion below;
- Secondary dressings of large absorbent pads to soak up the huge amounts of exudate;
- Topical antiseptic agents did not play a part in the treatment, but rather reliance was placed on the efficacy of the intravenous drugs to combat infection.

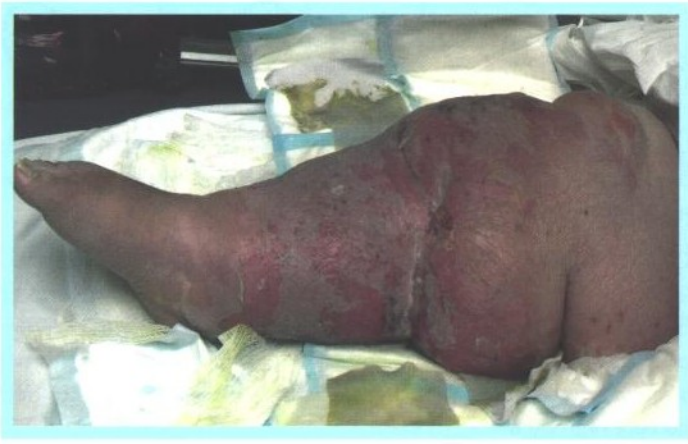

Image 1

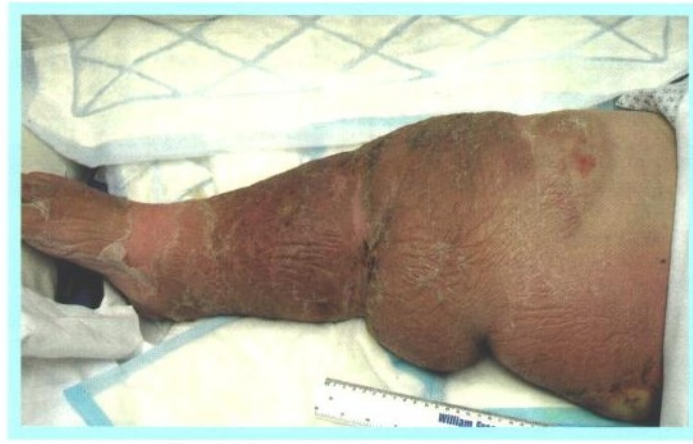

Image 2

Discussion

From the start of dressing care, problems were encountered due to the sheer volume of exudate flow, requiring the staff to change the absorbent pads up to 3 times per day, resulting in the loss of the expensive silicone-based primary dressing.

A review of the process was undertaken to try to suggest a more cost-effective management approach. Atrauman was then recommended. This resulted in slightly longer application times as smaller individual pieces of Atrauman had to be applied.

Atrauman performed equally as well under very exacting conditions. If Atrauman was covered in thicker exudate, this was irrigated with warm physiological saline.

A considerable cost advantage was achieved with the use of Atrauman and at no time did the ward staff opt to revert back to their favoured product. As the patient's circulatory fluid load was contained and normal fluid balance achieved, the exudate flow was reduced after 8 days. The secondary dressings needed changing only once a day and by the end of the second week the secondary dressings were changed every 2nd day and occasionally every 3rd day. This continued over 4 weeks until exudate loss ceased except for an ulcerated lesion behind the knee. The rest of the skin remained dry but with long-term dermatological changes that are part of Lizzie's overall sequelae. See image 2 (above).

Conclusion

Throughout this time Atrauman **proved to be an effective primary dressing,** allowing a profuse watery exudate to flow through the open weave onto the absorbent secondary pad dressings.

Lizzie was pleased with her overall care, especially in respect of wound care, as on former occasions she had experienced wound care products that had given her pain, particularly on removal. On transfer home Atrauman and absorbent pads were provided as a starter pack for the District Nurses to continue the care of the remaining ulcer.

In summary, Atrauman **met the challenges** of profuse exudate, ease of application, removal, conformability and, equally as important contributed towards keeping cost down. As a result of this experience, Atrauman has now been placed on Trust Formulary as first choice for this category of dressing in terms of product performance and overall cost savings. ■

References

1. Winter GD (1962). Formation of scab and the rate of epithelisation of superficial wounds in the skin of the young domestic pig. *Nature* 1962; **193:** 293-294.
2. Eaglestein WH, Falanga V (1997). Chronic Wounds. *Surg Clin N Am* **77:** 689-700
3. Falanga V, 1(2004). Wound Bed Preparation: Science applied to practice. In Position Document. Pp2-5: European Wound Management Association Medical Education Partnerships Ltd. London.
4. Morgan DA (1998). The application of the 'ideal dressing' theory to practice. *Nursing Scotland* 1998; July; 16-18.
5. Chaucair M, Phillips T (1998). A review of Wound Healing and Dressing materials, Skin and Ageing. June (Suppl), 37-43.
6. Baronoski S and Ayello, A (2003). ch.9 Wound treatment Options: 'Characteristic of an ideal dressing' in *Wound Care Essentials, Practice principles.* Lippincott. Williams & Wilkins. Philadelphia.
7. Thompson, D (2003). Evidence based Practice: Justifying changes in clinical practice based upon the appraisal of evidence. *Journal of Tissue Viability* 13.(1) Jan 23-29
8. Norman D (2003). Balancing cost-effectiveness with quality in tissue viability. *British Journal of Nursing* – Tissue Viability Supplement: Oct. ppS36-S42.
9. Cutting KF (1999). The causes & prevention of maceration of the skin – Wound Care April **8 (4):** 200-201.
10. Ennis W and Mears P (2000). Wound healing at the local level: the stunned Wound. In *Ostomy Wound Management* – **46 (1):** 39-48.
11. Günnewicht B and Dunford C (2004). 'Wound healing therapies' in: ch3 p36 – Fundamental Aspects of Tissue Viability Nursing. Quay Books MA Healthcare Ltd.
12. Minimising pain at wound dressing-related procedures – (2004). A Consensus document – Principles of best practice – World Union of Wound Healing Societies. Medical Education Partnership Ltd. London.
13. Thompson G (2002). Wound healing product selection for a critically ill obese patient. *British Journal of Nursing* vol 11, no.13 pp916-920.