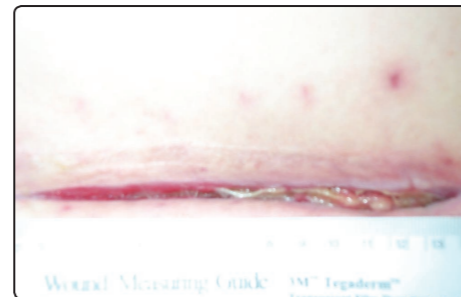


Results - Case Study 5

- Aim and Objectives:**
- Debridement of a sloughy wound
 - To contain exudate to protect the peri-wound area from further breakdown
 - To allow patient to return home with treatment continuing
 - Reduction / elimination of infection
- Type of Drain Used:**
- Flat drain
- Pressure Settings:**
- 60mmHg initially, increased to 80mmHg after first dressing change
- Clinical Outcome:**
- No attempt was made to debride the wound prior to the application of NPWT - slough content disappeared within the first 7 days
 - Patient discharged home after 7 days and treatment continued with District Nurse's and Tissue Viability Nurse's supervision
 - Amount of exudate reduced to negligible levels



Pre-NPWT



After 28 days of NPWT

Discussion

These case studies show the versatility and flexibility of this technique in wounds which can sometimes present in awkward areas on the body. These studies also show how quickly the patients were discharged from hospital back to their home environment whilst continuing on NPWT due to the portability and clinical effectiveness of the VENTURI™ NPWT system.

Conclusion

These case studies clearly demonstrate the clinical effectiveness of the application of NPWT using the gauze-based technique. The clinicians found that the application of moistened gauze enables it to be manipulated to the exact shape of the wound creating a moist wound environment. The use of the gauze in this way is simple, quick and easy to use

and teach and learn as well as being cost-effective in comparison to conventional NPWT dressings. The ease of learning the dressing technique and the simplicity of the features of the VENTURI™ power unit allows community nurses to become more confident in using NPWT which in these case studies allowed the patients to be discharged to the home environment much quicker.

References

- Bryant, R. (2000) *Acute and Chronic Wounds*. Mosby St. Louis (p. 436).2.
 Chariker, M.E., Jeter, K.F., Tittle, T.E., Bottsford, J.E. (1989) Effective management of incisional and cutaneous fistulae with closed suction drainage. *Contemporary Surgery* Vol. 34, 59-63.

Talley Medical would like to thank Glenn Smith for undertaking these studies, together with the patients and their families for allowing us to publish the studies.

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Five case studies demonstrating Negative Pressure Wound Therapy using the gauze-based dressing technique

Glenn Smith RN (MH) BN (Hons), Tissue Viability Nurse, Isle of Wight Primary Care Trust

Introduction

In recent years Negative Pressure Wound Therapy has revolutionised the way clinicians manage and treat a wide range of wounds. Negative Pressure Wound Therapy (NPWT) is a mechanical wound care treatment that uses controlled negative pressure to assist and accelerate wound healing¹.

The gauze-based dressing technique used in these case studies was first described by Chariker-Jeter et al in 1989² and involves the application of a moistened AMD™ Kerlix™ antimicrobial gauze dressing (Covidien) and a silicone drain to the wound. This is then covered with a transparent film, ensuring an air tight seal and a moist wound healing environment is maintained.

Polyhexamethylene biguamide (PHMB) impregnated AMD™ Kerlix™ gauze (Covidien) has been used as a therapeutic medium in wound care for many years. The gauze in the NPWT application is used as a space filler to facilitate wound drainage, while the PHMB exerts an antimicrobial effect.

The following case studies demonstrate the use of the gauze-based dressing technique, as utilised by the VENTURI™ NPWT system from Talley Medical.

Assessment of the Patients

Case Study 1: A 42 year old female had had an inguinal hernia repair. The wound was closed using metal sutures but the patient had an allergic reaction to them which consequently lead to her body rejecting the metal sutures and setting up an inflammatory reaction. This led to her surgical wound dehiscing and becoming infected, malodorous and sloughy.

Case Study 2: A 65 year old male patient presented with a sacral ulcer. This was complicated due to immobility as the patient was paraplegic and had lost all feeling below his waist so did not receive any sort of feedback that he needed to

reposition himself. The patient was also doubly incontinent, and whilst his urinary incontinence was managed by a permanent, long-term catheter, the matter of the faecal incontinence was still to be addressed resulting in regular recontamination of the wound by faeces. The patient was also diabetic and in chronic renal failure, necessitating dialysis three times a week. These combined factors made the wound even more difficult to heal.

Case Study 3: A 48 year old male patient presented with a post-operative dehiscence of a hip wound after a washout of the wound. The patient had had a hip replacement operation and had repeated infections which necessitated several readmissions and washouts of the wound area and hip cavity. The wound was clean but producing high levels of exudate, necessitating daily dressing changes. The wound was evidently becoming chronic and the granulation tissue appeared static and unhealing.

Case Study 4: A 64 year old female patient had a ileostomy formation, after which her abdominal wound dehiscd. The wound was clean but extensive, extending down through fascia of the patient's abdomen to the abdominal wall. The patient had a higher than average BMI and as a result this contributed to putting stress on the sutures and the wound split apart after the sutures were removed. There were high levels of exudate, necessitating dressing changes more than once a day. Wound measured 30cm long x 10cm wide x 6-8cm deep.

Case Study 5: A 76 year old lady presented with a non-healing mid-spinal wound after back surgery. The wound had become infected and the patient had been readmitted to hospital and given antibiotics. The patient appeared to be malnourished both as a result of pain relief causing a poor appetite, and the antibiotics inducing diarrhoea thus compounding matters through malabsorption. On removal of the sutures the wound dehiscd and it was evident that the wound was in a chronic state.

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Results - Case Study 1

- Aim and Objectives:**
- Debridement of slough from wound base
 - To contain exudate and protect peri-ulcer area
 - To allow patient to be discharged home as soon as possible

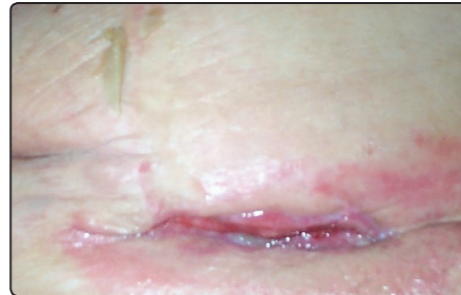
- Type of Drain Used:**
- Flat drain

- Pressure Settings:**
- 60mmHg initially, increased to 80mmHg after first dressing change as patient was tolerating pressures well

- Clinical Outcome:**
- Patient discharged home into care of District Nurse's and Tissue Viability Nurse's supervision after 3 days of commencing treatment
 - Exudate levels reduced rapidly and wound base cleared of slough with the first 7-10 days without any alternative debridement treatment being used
 - Wound improved until it was too small to take a drain and conventional dressings were used



Pre-NPWT



After 26 days of NPWT

Results - Case Study 2

- Aim and Objectives:**
- Debridement of wound, 75% of which necrotic tissue
 - To prevent contamination of wound with faecal material
 - To accelerate closure of wound

- Type of Drain Used:**
- Flat drain

- Pressure Settings:**
- 60mmHg initially, increased to 80mmHg after first week

- Clinical Outcome:**
- Wound completely debrided by NPWT - no attempt to debride the wound was made prior to application of NPWT
 - Granulation tissue present although slow due to severity of chronic renal failure and total paraplegia meant that patient could not totally remove pressure from that area
 - Patient not totally compliant as turned off pump when receiving dialysis
 - Treatment discontinued due to the above difficulties



Pre-NPWT



After 30 days of NPWT

Results - Case Study 3

- Aim and Objectives:**
- Reduce exudate / decrease infection
 - Prevent further hospital admissions
 - Increase speed of granulation tissue
 - Allow patient more independence

- Type of Drain Used:**
- Flat drain

- Pressure Settings:**
- 60mmHg initially, increased to 80mmHg as tolerated by patient

- Clinical Outcome:**
- Dressing changes 3 x weekly initially, but reduced to 2 x weekly after 3 weeks
 - Patient discharged from hospital as soon as therapy commenced - Tissue Viability Nurse supported Community Nurses with dressing changes
 - Patient was independent and spent long periods using the power unit on battery power
 - Wound quickly became free from infection, exudate levels negligible which allowed patient to have a successful skin graft



Pre-NPWT



After 19 days of NPWT

Results - Case Study 4

- Aim and Objectives:**
- To prevent risk of infection
 - To promote speed of granulation
 - To allow patient to be discharged back to nursing home

- Type of Drain Used:**
- Flat drain

- Pressure Settings:**
- 60mmHg initially, increased to 80mmHg after first week

- Clinical Outcome:**
- NPWT applied in hospital but patient discharged to nursing home with support of Tissue Viability Nurse
 - Dressing changes reduced to 2 x weekly after first 3 weeks of NPWT
 - Wound quickly contracted beyond the point that NPWT dressing was useful: on removal wound measured 14cm long x 5cm wide x 1cm deep



Pre-NPWT



After 28 days of NPWT