

NEGATIVE PRESSURE WOUND THERAPY USING THE CHARIKER-JETER TECHNIQUE

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The management of wounds involves using various dressings and technologies, where appropriate, to benefit the patient and reduce the workload of the nurse or healthcare practitioner. It is important that those managing patients with cavity wounds are conversant with different means of applying negative pressure wound therapy (NPWT).

Negative pressure wound therapy (NPWT) has been in practice for almost 15 years. There are two different ways of applying NPWT, using either a foam-based system (Beldon, 2006), or a gauze-based system with a drain, known as the Chariker-Jeter technique (Chariker et al, 1989). Previously, due to a patent, the foam-based system of NPWT has held precedence. However, now that the patent has expired, the market place has opened up and other systems of NPWT have been developed. Such competition helps to lower prices as companies compete against one another, rather than just one company having a monopoly over the technology and dressings. This obviously benefits the patient, practitioner and the NHS budget.

NPWT has many clinical effects, including:

- ▶▶ Dilation of arterioles leading

Table 1.

A typical assessment of a patient with a pretibial wound

| Indications for TNPWT | Contraindications for TNPWT |
|--|--|
| Pressure ulcers | Untreated osteomyelitis |
| Venous leg ulcers | If malignancy in the wound bed is present |
| Dehiscid surgical wounds | Non-enteric sinus/fistulae |
| Post-surgical wounds left to heal by secondary intention | If the dressing would need to be placed directly over exposed vital structures; blood vessels, organs, anastomotic sites, tendons, ligaments or nerves |
| Pre- and postoperative skin graft sites | Presence of gross necrosis/slough in the wound bed |
| Traumatic wounds, including burns | If the patient is being treated with systemic steroids |
| Sinus drainage and management | If the patient is unable to understand what the therapy entails or able to comply with treatment |

- to increased blood flow to the wound bed
 - ▶▶ Stimulation of cell proliferation, forming granulation tissue
 - ▶▶ Stimulation of granulation tissue, which fills the wound cavity and decreases wound size
 - ▶▶ Reduction of oedema to the wound area and surrounding tissues
 - ▶▶ Removal of slough, provided it is not present in dense amounts
 - ▶▶ A decrease in the number of bacteria present within the wound
 - ▶▶ Maintaining a moist environment.
- (Morykwas and Argenta, 1993; Argenta and Morykwas, 1997; Joseph et al, 2000; Morykwas et al, 2001).

Table 2.

Benefits of NPWT to both patient and practitioner

| Patient benefits | Practitioner benefits |
|--|---|
| Control of exudate: prevents soiling of clothes and bedclothes, so enhancing quality of life (Jones et al, 2006) | Control of exudate: reduction in number of dressing changes, thus saving practitioner time |
| Reduction in dressing changes: allows patient to rest, reduces discomfort | Reduction in dressing changes: cost-effective |
| Reduction in dressing changes: less opportunity for infection to develop | Reduction in dressing changes: less opportunity for cross-infection to occur |
| Rapid wound contraction: encourages patient and promotes concordant relationship with practitioner | Rapid wound contraction: encourages practitioner and promotes concordant relationship with patient |
| NPWT does not prevent/inhibit physiotherapy or mobilisation so patient can rehabilitate simultaneously | NPWT does not prevent/inhibit physiotherapy or mobilisation, so patient more rapidly prepared for discharge |
| NPWT can be adjusted to accommodate wound aetiology, so is individualised for the patient | NPWT can be adjusted to accommodate wound aetiology, so is individualised for the patient |

The effects of NPWT are beneficial to both the patient and practitioner (*Table 2*), and can enable/further the concordant relationship between them that is vital for any wound therapy to succeed.

Assessment

A thorough wound assessment should be completed before the application of NPWT by a practitioner who is knowledgeable and competent in both wound assessment and the application of NPWT.

Before starting NPWT, expected outcomes and benefits must be explained thoroughly to the patient, giving them and/or their



Figure 1. Organisation of all necessary equipment to complete the procedure.



Figure 2. Prior to application of a TNP dressing the wound must be clean and free from dense slough or necrosis.



Figure 3. The Kerlix® AMD gauze (Covidien) is used to line the wound bed, ensuring it reaches into any undermined areas.



Figure 4. The wound drain is placed into the wound bed over the gauze.



Figure 5. More Kerlix® AMD gauze is used to fill the wound bed and sandwich the drain.



Figure 6. The dressings are secured in place using film dressings to create a seal over the wound bed.



Figure 7. The drainage tube is connected to the suction tubing of the NPWT pump and the pump activated. The dressing is contracted and has a 'vacuum wrapped' appearance as the negative pressure is applied.



Figure 8. The wound bed 14 days later; more vascular, contracted in size and shallower as it fills with granulation tissue.

relatives/carers the opportunity to ask questions. This will help to assure them of the practitioner's knowledge and expertise, and so gain consent for therapy.

Figures 1–8 show the application of NPWT using the Chariker-Jeter technique.

Conclusion

Negative pressure wound therapy may be applied to a wide variety of wounds (Table 1). Nurses/practitioners engaged in wound treatment should have an understanding of its usefulness in wound healing, be aware of its benefits for time management for the practitioner and its cost-effectiveness, as well as knowing when to instigate and stop therapy.

It is vital that anyone applying a NPWT dressing has the necessary knowledge and is considered competent to do so. **WE**

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