

Avoiding amputation using the Venturi pump to treat a woman with an infected ulcer and complex comorbidities

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This case report examines the care of a 77-year-old woman with diabetes, rheumatoid arthritis, kidney disease and CREST (calcinosis, Raynaud phenomenon, esophageal dysmotility, sclerodactyly, and telangiectasia) syndrome. The patient had a long-standing history of leg ulceration and presented with an infected, circumferential leg ulcer.

After investigation she was found to have impaired venous and arterial circulation with underlying chronic oedema. The patient had been hospitalised on a number of occasions due to spreading infection in this ulcer and she was unable to tolerate any form of compression on the limb. After discussions between the patient's physician, the vascular, dermatology and tissue viability teams, amputation was offered to and declined by the patient.

Figures 1 and 2 show the patient's leg ulcer at this stage when, at its widest point, it measured 20cmx17cmx0.5cm deep. The patient's infection was managed using intravenous and then oral antibiotics and the wound lined with Acticoat Silver Dressing (Smith & Nephew, Hull) and commenced on topical negative pressure therapy using the Venturi Pump (Talley Group Ltd, Hampshire) and using AMD Gauze (Covidien, Hamilton, Bermuda). The pump was set at 80mmHg of constant pressure and changed every three days for 15 days before the patient's discharge. At this point the volume of exudate produced was approximately 800ml per 72-hour period. The patient spent a short period of time in her local hospital before being discharged home into the care of her community nurses.

To minimise disturbance to the patient, her progress was monitored using the Department of Tissue Viability's telemedicine clinic every month. Over the following seven months the patient remained infection-free and only required the monthly telemedicine reviews.

In Figures 3 and 4 the wound can be seen after seven months of treatment. The wound continued to be managed using the Venturi pump at 80mmHg of continuous pressure and was lined with AMD Gauze which was changed every third day. At this stage the wound was producing about 200ml of exudate per 72-hour period and at its widest point it measured 15cmx8cmx0cm.

Conclusion

The viability of this patient's limb had been seriously compromised by her underlying conditions and the circulation within the limb. However, by utilising topical antimicrobials, topical negative pressure therapy and a seamless approach to care, the patient was able to stay infection-free and at home while the wound improved. As a result of the secondary and primary care teams working in partnership the patient's early discharge was facilitated and amputation was avoided. The use of the telemedicine clinic eliminated the need to make regular 70-mile round trips for clinic reviews. As a result of this approach the patient's quality of life was significantly improved. **WUK**

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Figure 1. The ulcer before treatment showing the front of the lower leg and the exposed tendon at the base of the wound.



Figure 2. The rear of the patient's leg showing the extent of the ulcer before treatment.



Figure 3. The front of the leg after seven months of treatment. The ulcer has reduced in size.



Figure 4. The back of the leg after seven months of treatment showing that the ulcer has reduced in size.