

# A Case Report on Theruptor Novo: An Antimicrobial Dressing in the Management of Venous Leg Ulcer

SUBHASH M KALE



## ABSTRACT

Venous Leg Ulcer (VLU) is defined as any break in the skin that has either been present for longer than six weeks or occurs in a person with a history of VLU. VLUs are intricate and life-threatening ulcerations that result in significant expenses for health services. Compression therapy is the most preferable treatment choice for VLU. Beneath the compression devices (bandages or stockings), wound dressings are used as the primary layer to protect the wound and provide a moist environment to aid ulcer healing. Healthcare professionals face difficulty in making evidence-based decisions regarding the most appropriate treatment plan for a patient with varying needs due to the vast range of wound dressings. Hereby, the author presents a case study of a 53-year-old male patient with a non healing wound with pus discharge for 20 days over the lower limb. Theruptor Novo (Healthium Medtech, India) was used as the regular primary dressing along with planned treatment. By the end of three weeks, the wound size had reduced with a low exudate level, there was no sign of infection, and there was good granulation tissue growth.

**Keywords:** Compression therapy, Granulation tissue, Primary dressing, Wound dressing

## CASE REPORT

A 53-year-old male patient, weighing 83 kg and working as a driver, presented with a history of fever for one week that did not respond to oral medications. The patient also complained of a non healing wound with pus discharge and pain for 20 days on his lower limb. He is a known hypertensive and has been on medication for 12 years. Upon examination, there was a sloughy wound over the lateral side of dorsum of the left foot measuring 9×4×0.5 cm, with some granulation tissue, thick purulent exudate, and signs of local infection (increased pain, oedema, warmth, and delayed healing). The wound edge was inverted [Table/Fig-1]. A diagnosis of Venous Leg Ulcer (VLU) was made, and the management objectives were to protect the remaining granulation tissue, debride the slough, maintain wound moisture balance, reduce wound bioburden, protect the wound from maceration, and improve the overall well-being of the patient.



[Table/Fig-1]: VLU presented with thick purulent exudate and signs of infection.

In the first stage, wound debridement was followed by regular dressing using Theruptor Novo. In the second stage, once there were no signs of local infection and good granulation tissue growth, the plan of treatment was to perform a Split Skin Graft (SSG) on the wound. Following the standard protocol for wound dressing, normal saline was used for wound cleansing, and Theruptor Novo was used

for dressing, followed by a compression bandage. Wound dressing was done daily for the first four days, then once every 5 days for two weeks. After that, it was done once a week. By the end of the third week, the wound size had reduced to 7.5×3.5 cm, with thin exudate and no signs of local infection or slough. There was good granulation tissue growth [Table/Fig-2]. Later, the patient underwent SSG during the second stage of the wound management plan [Table/Fig-3]. The graft was stapled using a skin stapler (Trupler). During the follow-up visit one week after the SSG, the graft had taken well and the wound had healed [Table/Fig-4]. The patient did not visit for further follow-ups, and according to a telephonic conversation with the patient, the wound had healed completely.



[Table/Fig-2]: VLU with granulation tissue growth.



[Table/Fig-3]: SSG in the 2<sup>nd</sup> stage of wound management plan.



**[Table/Fig-4]:** Healed wound after one week of SSG.

## DISCUSSION

Compression therapy is the most preferable treatment choice for VLU. Beneath the compression devices (bandages or stockings), wound dressings are used as the primary layer to protect the wound and provide a moist environment to aid ulcer healing. Dressings also provide comfort, control exudate, and prevent compression devices from adhering to the wound bed. Wound dressings may also reduce wound size, protect the ulcer from deterioration, and encourage the development of healthy granulation tissue [1].

Wound dressings can promote wound healing and potentially lower patient morbidity as well as expenditure, but there is no conclusive evidence to suggest a particular dressing is better for VLU [2]. A common concern for ulcers is pain and wound re-injury upon dressing removal. It is not recommended to use adherent dressings as they can cause significant trauma to the newly formed granulation tissue. Non adherent dressings that act as interface layers under secondary absorbent wound dressings are appropriate for clean, granulating, and lightly exuding wounds without necrosis, shielding the wound bed from direct contact with the secondary dressing [3].

Wound dressing should be chosen depending on the wound type, depth, and level of injury. It should consist of the following characteristics to manage the ulcers: maintain the moist environment, enhance the migration and proliferation of fibroblasts and keratinocytes across the wound surface, enable gas exchange between the wound and the environment, act as thermal insulation (appropriate tissue temperature is necessary to improve blood flow and reduce pain), promote angiogenesis and re-epithelialisation, able to regulate excessive exudate, should be sterile and non toxic to prevent

the wound site from further damage, non adherent for easy and atraumatic removal, protect against pathogens [4].

Theruptor Novo is a sterile barrier wound dressing with a 3-dimensional hydrocellular structure that allows for exudate and moisture management on the wound surface. This non adherent dressing has a permanently bound quaternary ammonium chloride compound with a “physical kill mechanism” for microbial protection and it doesn’t leach into the wound for its antimicrobial action unlike silver or other antimicrobial agents impregnated dressings [5]. In a case study by Pavan B, it was reported that Theruptor Novo dressing helped in healthy granulation tissue growth and epithelialisation over time with appropriate exudate management [6]. In two other case reports, Theruptor Novo dressing was able to prevent wound infection throughout the wound management, which, in turn, helped in accelerated diabetic foot ulcer healing [7,8].

In the present case report, Theruptor Novo was used as the primary dressing for managing the VLU. By the end of three weeks, the wound size had reduced with a low exudate level, there was no sign of infection, and there was good granulation tissue growth.

## CONCLUSION(S)

The current case report details the effective use of the Theruptor Novo dressing for a VLU. The dressing was non adherent, maintained a moist wound healing environment, and there were no signs of infection. Theruptor Novo dressing can be used as a primary dressing in the management of VLU. However, prospective robust studies are required to confirm its effectiveness.

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### PARTICULARS OF CONTRIBUTORS:

1. Consultant, Department of Plastic Surgery, Kovai Medical Centre and Hospitals, Coimbatore, Tamil Nadu, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Subhash M Kale,  
Consultant, Department of Plastic Surgery, Kovai Medical Centre and Hospitals,  
Coimbatore-641107, Tamil Nadu, India.  
E-mail: kalesubhashm@gmail.com

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