

# Role of Limited Access Dressing in Wound Bed Preparation

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## How to cite this article:

Sagrika Mohan, Ravi Kumar Chittoria, Jacob Antony Chakiath/Role of Limited Access Dressing in Wound Bed Preparation/Int J Practical Nurs. 2023; 11(2):65-67.

## Abstract

The Limited Access Dressing (LAD) combines the principles of moist wound healing and topical negative pressure dressing along with a provision of an additional port for instilling antimicrobial solution/gas of choice without any need to change the dressing. The major advantage of LAD over other form of negative pressure wound therapy is the access it allows for wound wash and the possibility of monitoring the wound during treatment period through the transparent wound cover.

**Keywords:** Wound; Limited Access Dressing; Wound bed Preparation.

## INTRODUCTION

The Limited Access Dressing (LAD) combines the principles of moist wound healing and topical negative pressure dressing along with a provision of an additional port (12-14 FR size tube) for instilling

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**Received on:** 14.04.2023

**Accepted on:** 20.05.2023

antimicrobial solution/gas of choice (to make wound environment aerobic/anaerobic) without any need to change the dressing. After 1960, apart from conventional closed dressing techniques, moist wound dressings and negative pressure dressings are the most commonly discussed in the literature. The Limited Access Dressing (LAD) in an attempt to combine the advantages of both moist wound healing and negative pressure dressings. The design has not able advantages, while avoiding some major disadvantages such as an inaccessible, offensive smelling wound environment, and relatively high treatment costs. It has been claimed that occlusive dressings promote rapid wound healing by preventing dehydration and scab formation, facilitating debridement minimizing inflammation, reducing pain, increasing the rate of epithelialization, and diminishing scarring.<sup>1</sup> Occlusive hydrocolloids are impermeable to water and the colloid gel formed by absorption of exudate,

produces an adsorption gradient that removes the toxic components of the wound exudate that the cellular and bacterial destruction produce.<sup>2</sup> The bad odour that is produced has been explained as a result of either gelatin breakdown in the colloid gel or anaerobic infection.<sup>3-5</sup> In this case report, we are demonstrating the application of limited access dressing in the wound bed preparation of a patient with left hand necrotizing fasciitis.

## Materials and Methods

The study is done in a tertiary care hospital in South India. The subject is a 58 year old male, known case of diabetes mellitus type 2 for 18 years with left hand necrotising fasciitis (Fig. 1). Patient was admitted in General Surgery where he was managed with IV antibiotics and analgesics and regular cleaning and dressing with normal saline. Due to non-improvement of the



Fig. 1: Necrotising fasciitis of the left hand dorsum

wound, was admitted under Plastic Surgery. The treatment involved use of urine collection bag as an alternative of custom made plastic bag for limited access dressing (Fig. 2). Wound having maximum of granulation tissue and minimum slough after 2 cycles of Limited Access Dressing.

## RESULTS

The subject showed healing with out any need for



Fig. 2: Limited Access Dressing using urine collection bag

flap cover and the wound was covered by healthy granulation tissue using LAD within 10 days. He did not develop osteomyelitis and all joints remain supple at the end of the treatment. Future plan is to proceed with skin grafting after explaining the risk



Fig. 3: healthy granulation after two cycle of limited access dressing

of graft loss at certain sites. (Fig. 3).

## DISCUSSION

Negative pressure dressing and moist wound dressings are two commonly used techniques for acute and chronic wound management with certain merits and demerits in both techniques. The use of sub-atmospheric pressure for an extended period to promote debridement and healing of wound was

first described by Fleischmann et al in 19935. They reported that the treatment resulted in efficient cleaning conditioning of the wound with marked proliferation of granulation tissue and reduced the cost and hospital stay. However the major disadvantages are the initial cost, requirement of special suction machine and lack of visibility of wound bed during treatment. LAD reduces or eliminates the disadvantages of both negative pressure and moist dressings. It is cost effective and uses of low intermittent negative pressure that can be delivered even by ordinary suction machine.<sup>6</sup> The major advantage of LAD over other form of negative pressure wound therapy is the access it allows for wound wash and the possibility of monitoring the wound during treatment period through the transparent wound cover. It also permits to continue physiotherapy during the treatment period, thus reducing the joint stiffness associated with prolonged limb immobilization. Urine bag are available readily in all hospitals as pre sterilized individual packed for single use. It is made from 0.125 mm wall thickness, clinical grade soft PVC and is transparent for wound visualization. It also has a kink free soft transparent PVC long tubing with connector I.D 6.5 mm x O.D. 7.5 mm with a non return valve, through which wound wash can be given. Top outlet with cover will allow for connection to suction machine or wall suction. Urine collection bag, act as the sterile barrier for providing negative pressure with in which a moist

wound environment can be maintained.

## CONCLUSION

Use of urine collection bag as a transparent polythene wound cover for LAD is a simple and efficient method for treating adult hand wounds.

## REFERENCES

1. Alvarez OM, Mertz PM, Egelstein WH. The effect of occlusive dressings on collagen synthesis and reepithelisation in superficial wounds *J Surg Res.* 1983;35(2):142-148.
2. Gilchrist B, Reed C. The bacteriology of chronic venous ulcers treated with occlusive hydrocolloid dressings. *Br J Dermatol.* 1989;121(3):337-344.
3. Eriksson E. Comparative study of hydrocolloid dressing and double layer bandage in treatment of venous stasis ulceration. In: Ryan T], ed. *An Environment For Healing: The Role of Occlusion.* London: *Royal Society of Medicine;* 1985:45-49.
4. Fine gold SM. Pathogenic anaerobes. *Arch Intern Med.* 1982;142(11):1988-1992.
5. Fleischmann W, Strecker W, Bombelli M, Kinzll. Vacuum sealing as treatment of soft tissue damage in open fractures. *Unfallchirurg* 1993;96: 488-92.
6. Kumar P. Exploiting potency of negative pressure in wound dressing using limited access dressing and suction-assisted dressing. *Indian J Plast Surg* 2012; 45:302-315.