

Original Research Article

Retrospective observational study about patient friendly and cost effective wound care by newer concept of open dressing

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ABSTRACT

Background: The choice of dressing material and to give wound cover varies according to the type of ulcer and the surgeon's experience. It is practically not possible to do comparative evaluation among different types of dressing material and method to dress. The ideal dressing material and method to dress must be cost effective, comfortable to patient and early wound healing with minimal sequel of scar tissue. The article discusses about a newer method cost effective and patient friendly dressing to achieve effective end result in wound healing.

Methods: Retrospective analysis of 50 patients treated from 01 April 2019 to 31 August 2019 by open dressing with written informed consent of patient and fulfilling ethical requirements at Rajiv Gandhi Medical College, Thane, Mumbai. The selection criteria of patients were cases with pressure dressing are excluded. The diabetic (40%), venous (20%) and traumatic (20%) ulcers are selected.

Results: Out of 50 cases, in 76% sample cases ulcer healed by secondary intention without skin grafting. It was noticed better early improved status of the ulcer by excellent granulation tissue and without deterioration in status of large ulcers (24%), operated for skin grafting. The concept of covering wound by washed cotton cloth after regular wound wash, antiseptic ointment, and adjuvant conservative therapy, helped to improve patient's comfort during outpatient department visit and inpatient department stay.

Conclusions: It concludes that the newer concept of wound cover by washed cotton cloth is patient friendly and cost effective without compromising the status of wound healing.

Keywords: Open dressing, Occlusive dressing, Quality of life in wound, Wound healing

INTRODUCTION

The surgeon's traditional intention to dress any wound is by particular dressing material and then by multiple layers of gauze/gamzee pad to create a barrier, absorb exudate and prevent bleeding by pressure dressing.¹ It is practically impossible to carry a comparative study on effectiveness of various method dressing materials and method to dress any wound. The aim and objective of the article discusses about the necessity to give newer method of open dressing and its advantages. The article guides about prevention of misuse of dressing material.

METHODS

Study design: Retrospective analysis of 50 patients treated by open dressing with written informed consent of patient.

Study place: Study was conducted at Rajiv Gandhi Medical College, Mumbai.

Study period: Study was done during the period from 01 April 2019 to 31 August 2019.

Selection criteria of patients: Case with pressure dressing is excluded. The diabetic (40%), venous (20%) and traumatic (20%) ulcers are selected after written informed consent of patient and their relatives and fulfilled ethical requirements.

Retrospective observational study of 50 cases by newer concept of simple, patient comfortable and cost effective open method of wound dressing described.



Figure 1 (A-C): Nonhealing ulcer in diabetic mellitus patient with nephropathy.



Figure 2 (A-C): Nonhealing ulcer in diabetic mellitus.



Figure 3 (A-C): Post fasciotomy nonhealing ulcer in diabetic mellitus.

50 case samples in the age group of 3rd to 5th decade of life and upper/ lower extremity ulcers were selected for the study. Out of 50 cases, 10 patients were of upper extremity ulcers and 40 were of lower extremity ulcers. The distributive classification of lower extremity ulcers were post debridement ulcers in the diabetic wet gangrene infection (20 cases/40%), venous ulcer (10

cases/20%), and post traumatic ulcers (10 cases/20%). There were 10 cases/20% of traumatic ulcers of upper extremity.

The patients were demonstrated about povidone iodine scrub bath by warm water minimum 2 to 3 times a day and application of povidone iodine ointment to the ulcer.

The counselling was done about newer method of dressing to the exposed ulcer by covering it with washed cotton cloth cover/legging (Figures 1-6) instead of regular multilayer gamzee roll and bandages. The cotton cover was asked to change on every wash to the wound and reuse it next day after proper wash and drying. The

counselling of the patient was done about the hygiene care of the wound. The patients were asked to maintain adequate limb elevation to reduce tissue edema and an initial dose of antibiotics only for a week and specific medical treatment as per the type of the ulcer.



Figure 4 (A-C): Postdebridement nonhealing ulcer in diabetic mellitus patient.

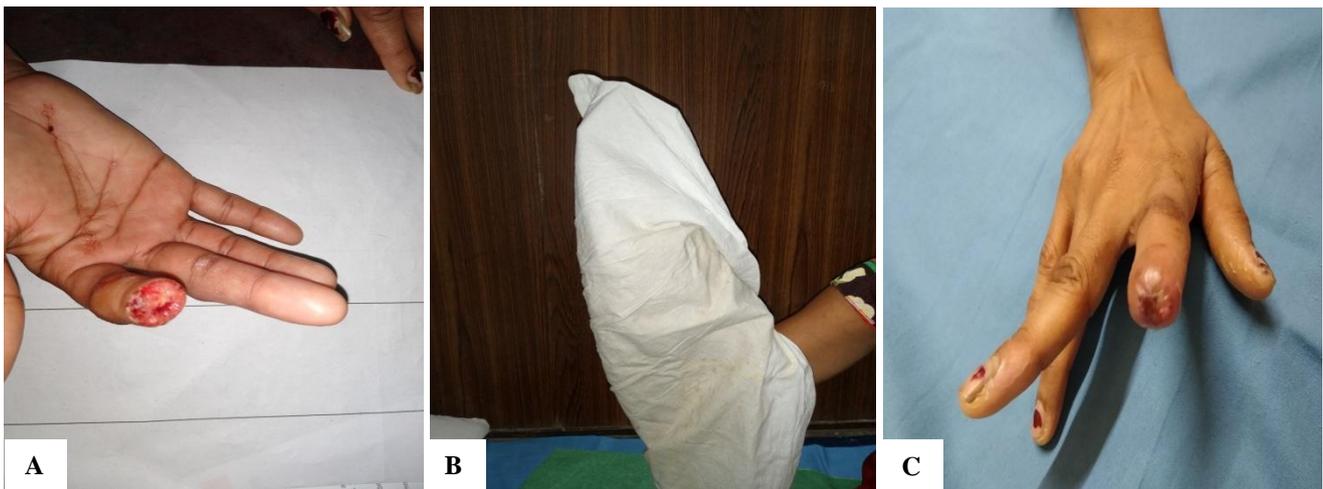


Figure 5 (A-C): Amputation of index finger due to dog bite.

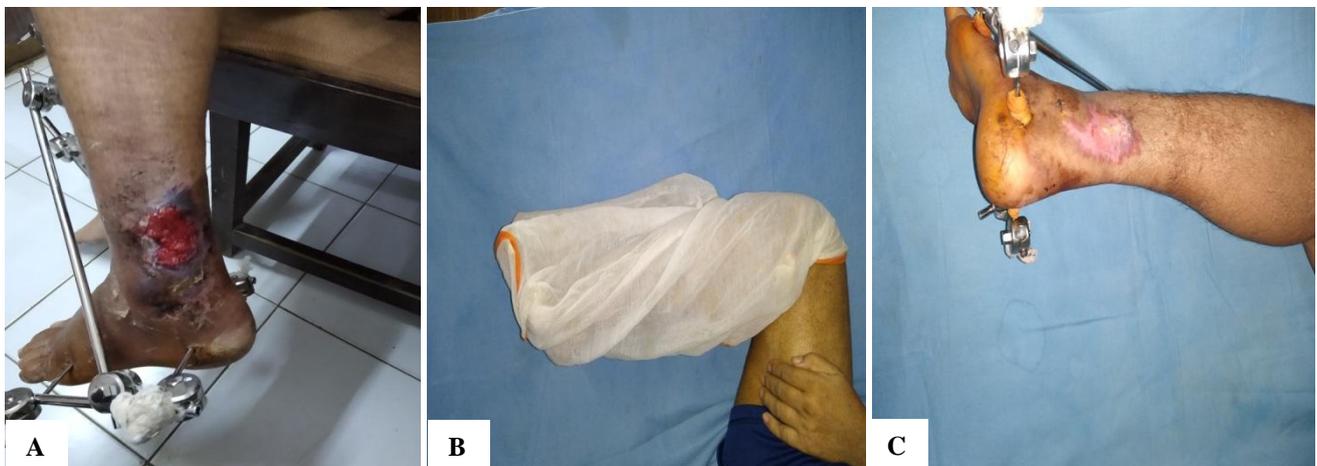


Figure 6 (A-C): Traumatic Nonhealing ulcer with fracture.

RESULTS

This cost effective newer concept of wound dressing promoted better wound healing by creating an excellent bed of granulation tissue for skin grafting in 24% of large ulcers cases (Figure 7) in a period of 7 days. The large ulcer cases grafted operated for skin graft were 5 cases of ulcers in diabetic patient, 5 cases of traumatic lower extremity ulcer and two cases of venous ulcer.

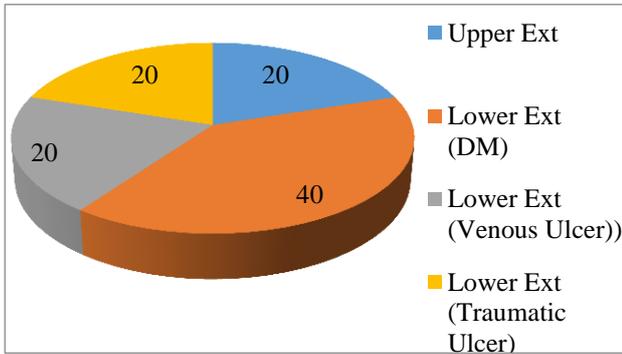


Figure 7: Distributive classification of cases.

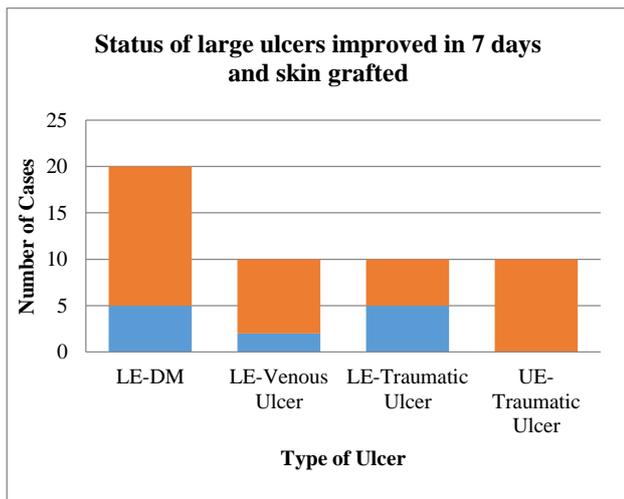


Figure 8: Improved status of ulcer for skin graft.

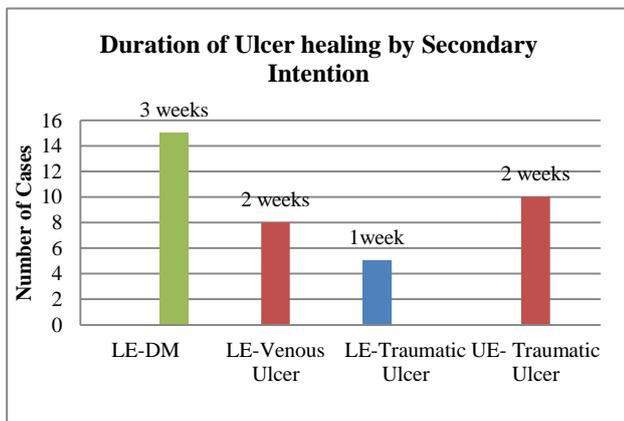


Figure 9: Ulcers which healed by secondary intention.

It was observed in Figure 8 that there was satisfactory total healing of small size ulcer by secondary intention in 76% sample cases. The duration of total healing of ulcer by secondary intention in diabetic ulcer cases was within 3 weeks and in rest within a maximum period of 2 weeks.

This newer concept of wound cover by clean, washed dried cotton cloth prevents maceration of surrounding normal skin, better wound healing by secondary intention, cost effective and without worsening the status of ulcer in any of the cases of sample study. The patient and their relatives were much comfortable both during the inpatient department stay and while bringing the patients to outpatient department (OPD) in the crowded public transport system of India. There was satisfactory wound healing without deterioration in the status of the ulcer during the maximum period of 3 weeks of wound healing by secondary intention without additional dose of antibiotics. Out of 50 cases, in 76% sample cases ulcer healed by secondary intention without skin grafting. It was noticed better early improved status of the ulcer by excellent granulation tissue and without deterioration in status of large ulcers (24%), operated for skin grafting.

DISCUSSION

In the olden days people in the various civilizations developed their own herbal medicines from various herbs and wounds were dressed by leaves. In India, turmeric, honey and hibiscus plant products were used in better wound healing depending on clinical findings of the wound and non-healing ulcers.²

During the 19th century, Semmelweis, a Hungarian obstetrician observed that proper hand washing and cleanliness reduces the chances of infection and maternal mortality.³ Lister started treating surgical gauze with carbolic acid. Robert Wood Johnson I, co-founder of Johnson and Johnson, began in the 1890s producing gauze and wound dressings sterilized with dry heat, steam, and pressure.

Friedrich observed that excision of open wounds substantially reduced the risk of infection.⁴ In the mid-20th century role of polymer synthetics for wound dressings and the ‘rediscovery’ of moist wound-site care protocols were introduced.

It causes severe physical and psychosocial impact on the patients with ulcers which are going to heal by secondary intention over an unpredicted duration.⁵ The family members are also under the burden of the financial stress due to expenses of treating patient and has to be with patient till the patient recovers to earn independently.

The basic intention of any wound care is to promote healing, prevent infections, and getting rid of an already existent infection. The wounds are dressed to create a barrier from external environment, absorb exudate and hemostasis by pressure dressing. But it is practically

impossible to compare results of wound healing by various dressing materials or method of giving dressing to any wound. Literature search shows, there is tremendous uncertainty in comparison of any wound that particular dressing will reduce morbidity on wound healing and its cost.⁶ Most of the surgeons make selection of dressing material and method of giving dressing by their own previous experience. The ideal dressing material must reduce the bacterial colony count in the wound and must lead the ulcer to heal it early by secondary intention. It must help in improving its status of the ulcer for early skin grafting. The ideal method of external dressing must suffice its purpose. It must improve patient comfort and compliance to undergo dressing. The patient should get minimal pain and discomfort at the time of dressing.

The literature search shows that there is an uncertainty about any reduction in the chances of surgical site infection, improved scarring, reduced pain and improved acceptability of the patients by giving no wound dressing (wound not covered by regular dressing) and different type of dressing.⁷ The thought and concept of wound dressing by clean and washed cloth cover/legging clicked by thinking better wound healing after perianal surgery for fissure, fistula and hemorrhoids and post episiotomy wound care by hot seitz bath.⁸ The closed dressing to patient wound give false security of creating a barrier in between the wound and external environment and serves the purpose of patient mental satisfaction.⁹ It was difficult to accept the concept of giving wound cover by washed and dried cotton legging instead of regular method of sterile multilayer gamzee roll and bandages by patients and every surgeons. The patients were from lower socioeconomic class and could not afford to visit hospital daily or alternate day for dressing by standing in long queue at reception counter to make OPD paper. It was highly uncomfortable to commute to hospital especially on rainy day with soaked dressing leading to maceration of the surrounding skin. The minds of most of the patients and treating consultants had a fixed concept that 'any wound means to give a closed dressing to protect wound from external environment'.

The regular wound wash reduces surface colony count of microorganisms and adequately moisturizes the wound, prevents contamination of wound by microorganisms from unwashed surrounding normal skin around the wound. This newer concept of wound cover definitely serves the purpose of olden method of regular dressing of wound wash by antiseptic solution and application of suitable non-adhesive dressing material coated by antiseptics and multilayer gamzee roll. It also serve basic concept of vacuum dressing/negative pressure wound therapy by removing secretion and debris by frequent wash.¹⁰

CONCLUSION

The results of the retrospective observational study concludes that the newer concept of wound cover by

washed cotton cloth is patient friendly, cost effective without compromising the status of wound healing, with minimum required dose of antibiotics for initial period of a week. It prevents any surgeon from non-indicated use of dressing application on all extremity ulcers. It prevents frequent visit of the patients to hospital for dressing and trains them about painless, self-care of the wound.

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