

Innovative Cost-Effective Application of Donut Dressing in Skin Grafting

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Abstract

One of the measures for the successful take of a skin graft is the prevention of friction, especially in cases of pressure ulcers in patients with head injury leading to altered sensorium. With existing measures such as the use of a pressure-relieving bed, frequent change of position, etc graft loss is common. Some additional measures are required. This study highlights the role of a donut-shaped ring dressing to protect the skin graft from friction.

Keywords: Donut, pressure ulcer, skin grafting

INTRODUCTION

Skin grafting is a common reconstructive procedure performed by dermatologists, plastic surgeons, and cutaneous surgeons. For the successful take of a skin graft, an optimal wound bed, strict immobilization, and graft fixation are essential.

Pressure ulcers are a major problem in hospitalized bedridden patients. Grade 2 pressure ulcers may be managed with skin grafting. Conventionally, to prevent graft loss on the sacral area due to friction, the patient is nursed in the lateral position and on a pressure-relieving bed. However, some additional measures are required to prevent the further loss of graft due to friction and shearing forces.^[1]

This article highlights the use of cost-effective innovative donut dressing in preventing graft loss in sacral pressure ulcers.

MATERIALS AND METHODS

A case of grade 2 pressure ulcer in a post-traumatic diffuse axonal injury with altered sensorium with quadriplegia [Figure 1], was managed with skin grafting [Figure 2]. After graft fixation, an additional measure such as a donut-shaped ring dressing was used [Figures 3–7] to prevent friction between the graft dressing and the bed. Maintaining the lateral position in this patient was difficult because of the altered level of consciousness due to diffuse axonal injury.

RESULTS

Postoperatively, there was a successful graft take [Figure 8] and the patient was discharged with advice to continue its use at home to prevent recurrence of pressure ulcers. In the follow-up of one month, the patient did not develop a recurrence of pressure ulcers.

DISCUSSION

Doughnuts or donuts are usually deep fried from a flour dough; they are typically either ring shaped or a number of shapes without a hole, and often filled, but they can also be ball-shaped (“doughnut holes”).^[2]

Skin grafting is a procedure in which the skin is transplanted from a donor to the required recipient site and it survives on blood supply from the recipient bed. There are a series of processes for the successful take of a graft. One of the factors for graft loss is inadequate fixation and immobilization of the graft. There are various methods of graft fixation, such as quilting, fixation at margin, tie-over dressing, etc.^[3] In spite of these measures,

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graft loss is common in the sacral area in quadriplegic patients who are associated with altered sensorium or on the ventilator. We devised some measures by which the direct contact of the graft with the bed is prevented; we designed a donut-shaped soft ring as an additional dressing incorporating graft dressing as described in the methodology. We hypothesize that this might have helped in preventing the friction between the graft dressing and the bed, leading to the successful take of a graft. We suggest that the same soft donut be used during the postoperative period for prevention of the recurrence of pressure ulcers. One should be careful that a fresh pressure ulcer does not develop due to the donut by ensuring that it is both soft and pliable. Further use of pressure-relieving measures and frequent change of dressing should be continued to prevent recurrence. This dressing is cost-effective, as it is prepared out of easily available material such as cotton, bandage, adhesive dressing, and plastic wrap.

On internet search, we did not find use of this kind of innovation for skin grafting but a large randomized



Figure 1: Grade 2 sacral pressure ulcer [3x2cms]



Figure 2: Postskin grafting



Figure 3: Donut-shaped soft ring being prepared



Figure 4: A plastic wrap is applied to maintain shape and prevent soakage



Figure 5: Final donut ready for use



Figure 6: Donut incorporating graft dressing

controlled trial is required to substantiate the advantages of our innovation.

CONCLUSION

A donut-shaped soft ring may help in preventing friction between the graft dressing and the bed, leading to the successful take of a graft.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form/forms, the patient(s)



Figure 7: Donut is kept in position over graft dressing with the help of adhesive and soft cotton bandage



Figure 8: Postsuccessful graft take

has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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