

## Ideas and Innovations

# A simple and rapid method of repeated tie over dressing

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## ABSTRACT

Tie overdressing is commonly used to secure the graft against the raw surface and prevent loss due to of hematoma or seroma. A conventional tie over dressing with silk sutures, is a useful method of securing the graft to raw area. Refixation is difficult when repeated tie over dressings are needed. We assessed a low cost repeated tie over dressing method using sterile sample collection containers and silk suture threads in eight patients. After the graft is applied on the bed, tie-over stitches are taken, and paraffin gauze is applied over with adequate padding; the tie over sutures are passed through the container and the lid is tightened over it to complete the dressing. The lid can be unscrewed easily at any time to inspect the graft and can be easily reapplied in the outpatient department. The skin graft take in all the patients was complete without any seroma or hematoma. A novel and low-cost tie over dressing that enables simple fixation of the dressing, to maintain proper position of grafts that require repeated fixation is reported here.

## KEY WORDS

Low cost; novel; skin graft; tie-over dressing

## INTRODUCTION

Soft tissue coverage for wounds remains a difficult management problem for patients sustaining traumatic injury and burns. There are several methods to achieve wound coverage – secondary healing, primary suturing, skin grafting, and flap surgeries as described in reconstruction ladder.<sup>[1]</sup> A skin graft is the most commonly used modality for coverage of wounds in reconstructive plastic surgery. The skin graft needs to undergo various stages of

healing for a good take on the recipient bed. There are different methods employed to secure the graft to recipient bed for a few days with a basic idea to ensure that the graft is not elevated off the bed by formation of haematoma/seroma under it.<sup>[2]</sup> Repeated tie over dressings are required in situations where the dressing needs to be changed more frequently as in cases of infected raw area, bleeding tendency, patients on anticoagulant drugs, and in convex areas of body such as buttocks, breast, and the scalp, where the dressing is difficult to secure.

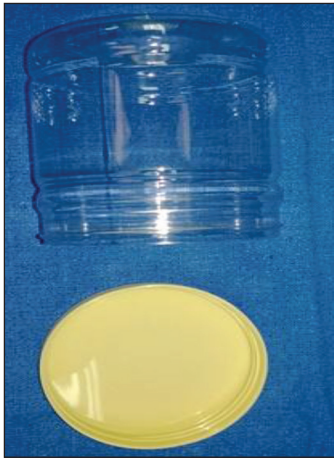
## PROCEDURE

In this novel method, a sterile sample container was cut at its upper part [Figures 1 and 2]. The skin graft was applied on the raw area and fixed with skin staplers and tie over sutures. Once paraffin gauze and adequate padding is applied on the raw area, the tie over threads were passed

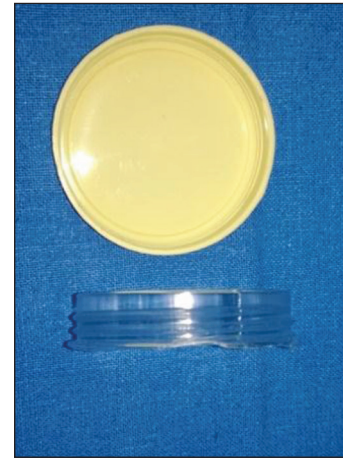
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from inside out of the container [Figures 3 and 4] and pulled at the appropriate tension to keep the dressing in place. The lid of the container was tightened to complete the dressing ensuring that the graft was maintained in close approximation with the wound surface.

The dressing can be changed repeatedly with sterile precautions depending on the requirement, as an outpatient procedure by unscrewing the lid [Figures 5-8] which can then be easily reapplied. The procedure can be used on wounds of any size by changing the size of the sterile container chosen.



**Figures 1 :** Sterile plastic container



**Figure 2:** Upper part of the sterile container is cut



**Figures 3 :** Tie over threads being passed from inside out



**Figure 4:** The lid is tightened over the dressing



**Figures 5:** Post-toilet mastectomy raw area covered with the skin graft



**Figure 6:** The tie over dressing applied in OT

We have used this method in eight cases of the post toilet mastectomy raw areas with very good results [Figures 9 and 10].

## DISCUSSION

Skin graft once applied has to be covered with petrolatum gauze to avoid its separation from the wound bed at the time of change of dressing. An ideal method of graft fixation should be simple, rapid, repeatable, able to be performed in the outpatient department, prevent hematoma or seroma formation, soak the exudates well, and allow the graft bed to be inspected easily.

There are multiple methods of securing dressings over the skin graft, some of them can be applied only once and some can be repeated. The dressings that can be applied only once are like foam,<sup>[3]</sup> hydro cellular dressing<sup>[4]</sup> (highly absorbent and can be easily changed), negative pressure therapy dressing<sup>[5]</sup> (stabilises the

graft, increases the vascularity of bed, takes away toxic chemicals), and gas bag<sup>[6]</sup> (transparent, can see graft and monitor any haematoma).

These traditional methods can stabilize the graft till the first dressing post operatively. In some contaminated wounds, the dressing needs to be removed earlier, especially if there is drainage or foul smell.<sup>[7]</sup> This approach may also be proper for graft, used to cover defects of some anatomical regions with increases risk of contamination, such as perineal, axillary, and genital or it can be used in areas where base of wound is difficult to immobilize like breast/pectoral region. There are multiple methods that can be used repeatedly for the skin graft stabilisation.

Repeated tie over dressings can be done by keeping interrupted sutures long to be used as tie over dressings. These ties over dressing can be made of sutures or rubber bands.<sup>[8]</sup> When taking a tie over



Figure 7: Tie over dressing repeated in an outpatient department



Figure 8: Graft uptake



Figure 9: Post-toilet mastectomy raw area



Figure 10: Final result



stitch, both the threads can be left long and only one thread is tied at a time, the other thread is left long for next time.<sup>[9]</sup> This dressing can be reapplied only twice. Repeated tie over dressings are also done using bra hooks,<sup>[10]</sup> and silk loops.<sup>[11]</sup> These techniques are difficult for small dressings especially the bra hooks; the silk loops method is very cumbersome and takes long time to do. The novel method being discussed has a very small learning curve and is very fast. It hardly takes 5 min in the hands of a Plastic surgeon to complete the dressing. This dressing technique maintains the advantage of conventional tie over dressing with rapidity and repeativity.

## CONCLUSION

Good graft take can be expected whether split-thickness or full-thickness with appropriate methods of stabilisation. We recommend a novel, low cost, simple, rapid method of graft fixation that can be used repeatedly and can be applied to a wound of any size.

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