

갈고리와 고무밴드를 이용한 새로운 봉합고정드레싱법

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New Tie-over Dressing Method Using Hooks and Rubber Bands

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Purpose: Though its general usage, traditional tie-over dressing using suture has a few drawbacks such as difficulty in re-fixation after its opening especially when hematoma or seroma has occurred. It is rather difficult to maintain a stable dressing on curvy parts of body like flank, buttocks and that leads to unsatisfactory results of the surgery. Authors recommend a quick and repeatedly doable method, tie-over dressing that incorporates the usage of hooks and rubber bands.

Methods: Debridement was done at a recipient site to be able to do skin graft. A right size of skin graft was prepared and placed upon the defect site with suture. Enough number of hooks were attached using Blue nylon at the normal skin of the edge of grafted area. We Applied dressing with ointment and fluffy gauze then fixed the dressing by attaching a rubber band at the hook to give a certain amount of tension. One or two days after the surgery, we opened the tie-over dressing and repeated the tie-over dressing by reusing the hooks and rubber band.

Results: The skin grafts were all successfully taken and by repeating tie-over dressing using hooks and rubber, we could take the advantage of shortened the dressing time and eliminate the inconvenience of the patient and the surgeon by using bandages and fixing tapes.

Conclusion: The advantage of tie over dressing using

hooks and rubber bsnds are its easy re-doability early detection of probable complications, preventability of re-occurrence of hematoma and seroma. Therefore, authors report this as considering the tie-over dressing using hooks and rubber bands is recommendable.

Key Words: Skin graft, Tie-over dressing, Hook, Rubber band, Re-doable

I. INTRODUCTION

Skin graft is one of the most commonly used reconstructive method for soft tissue defect. It is a simple surgery that leaves minor donor site morbidity.

However, if fixation between the graft and the recipient is unstable and looses, hematoma or seroma which causes disruption on revascularization can be developed and loss of the graft may occur. Therefore, it is critical to ensure contact between skin graft and the recipient bed in a proper way. Traditionally, tie-over dressing using sutures is generally used for a skin graft. Though its general usage, tie-over dressing using sutures has a few drawbacks such as difficulty in re-fixation after the dressing. Especially, after early checking the status of the graft is done to resolve complications, compression using tie-over dressing is important to provide adherence of the graft.

We present our method of quick and repeatedly doable tie-over using hooks and rubber bands.

II. IDEAS AND INNOVATIONS

This study included 9 patients with 11 defect sites which were operated by single surgeon from March 2009 to September 2010 except for those with specific body parts, for example, face, digits and toes, and with defects that are too small to be fixed by hooks and rubber bands.

First, debridement was done at the recipient for skin graft. Second, a right size of skin graft was prepared and placed upon the defect site with suture. Third, enough numbers of hooks were attached to the normal skin along

Received December 22, 2010

Revised Jun 6, 2011

Accepted Jun 7, 2011

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circumferential margin of the graft by using nylon sutures.

Last, we applied dressing with ointment and fluffy gauzes and fixed the dressing by applying a rubber band between two opposite hooks with proper tension. For the patients with history of wound infection, bleeding tendency or anticoagulant medication, tie-over dressing was opened on one or two days after the surgery to check the occurrence of complications and tie-over dressing was redone easily without any assistance. In cases of curvy body parts, we opened tie-over dressing on 3rd to 5th day after the surgery and tie-over dressing was done every other day till skin graft take is conformed.

Case 1

A 76-year-old male was referred for the soft tissue defect on his left foot dorsum. Wound had bacterial infection with MRSA. After treating with intravenous antibiotic (vancomycin 1g q 12 hrs for 7 days) and wound irrigation therapy, split-thickness skin graft was harvested from the left thigh and

skin graft was performed with tie-over dressing using our manner. On one day after the surgery, large amount of serous exudates was observed through tie-over dressing and infection was suspicious. Tie-over dressing was opened and seroma was evacuated with multiple small incisions. On post operative 9th day, we confirmed to take skin graft and hooks were removed.

Case 2

A 43-year-old male was hospitalized for treatment of liver cirrhosis and was referred for cellulitis on his right foot dorsum. In preoperative blood coagulation test, prolongation of prothrombine time (19.7 sec) was identified. After cleansing of wound, debridement and split-thickness skin graft were performed with our manner. While considering his medical condition, hematoma under graft was strongly suspicious so that tie-over dressing was opened on two days after the operation. Hematoma on central portion of skin graft was observed and it was removed through a stab incision. Tie-over dressing was repeated until 9th day after the operation.



Fig. 1. Case 1. A 76-year-old male with soft tissue defect on his left foot dorsum. (Left)Preoperative photo, (Center, left, and Center, right) On postoperative 2nd day, seroma was evacuated and photograph was taken during the tie-over dressing using hooks and rubber bands, (Right) Postoperative photo was taken on 12 weeks after the surgery.

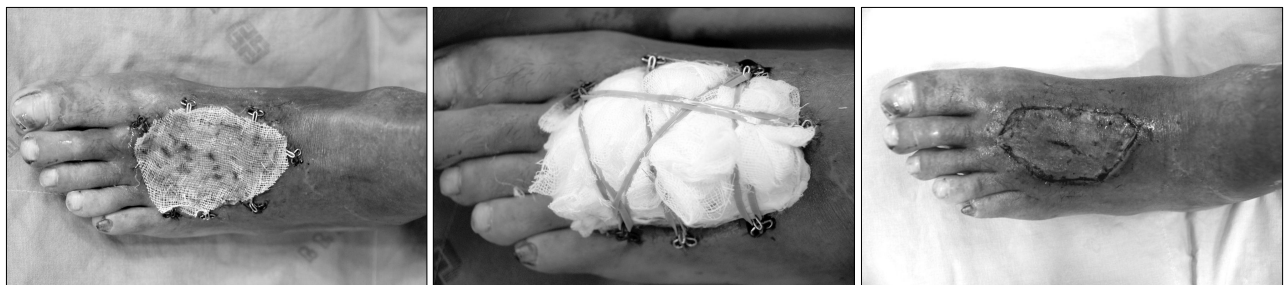


Fig. 2. Case 2. A 43-year-old male with defect following cellulitis on his right foot dorsum. (Left, Center) Intraoperative photographs were taken during tie-over dressing using hooks and rubber bands was done. (Right) Post operative photo was taken after 2 weeks.

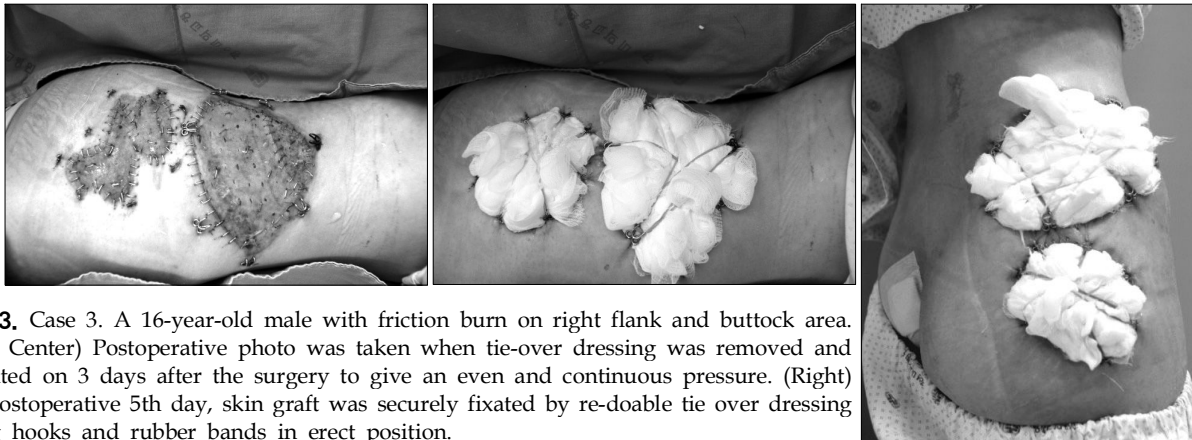


Fig. 3. Case 3. A 16-year-old male with friction burn on right flank and buttock area. (Left, Center) Postoperative photo was taken when tie-over dressing was removed and repeated on 3 days after the surgery to give an even and continuous pressure. (Right) On postoperative 5th day, skin graft was securely fixated by re-doable tie over dressing using hooks and rubber bands in erect position.

Case 3

A 16-year-old male was referred for friction burn on the right buttock and flank area. Split-thickness skin graft was harvested from his left thigh and skin graft was performed with our manner. Three days after surgery, tie-over dressing was opened to find seroma and tie-over dressing was repeated every other day until 9th day after surgery when skin graft taken was find out.

III. DISCUSSION

A revascularization is an important factor to a successful take of skin graft. For revascularization, an appropriate pressure has to be applied on skin graft and that helps the prevention of hematoma or seroma between a graft and a recipient bed.¹

Tie-over dressing using sutures is used extensively for skin graft. However, it has a few drawbacks. It is a time-consuming procedure and has a difficulty in re-doing or fixation of the surgical area once the tie-over dressing is opened. To eliminate or improve these demerits, some authors have developed easy and quick tie-over dressing methods.²⁻⁶ However, the impossibility of re-fixation of the dressing still remains.⁷ Also, a re-doable tie-over dressing using silastic drain has been introduced, but it still is time-consuming and needs hands of assistants.⁸

The tie-over dressing method using hook and rubber band which the author has recommended is economical as surgical materials (hooks and rubber bands) which are easy to find and are obtainable with low price. Thus, the surgical materials come with different sizes, so that the surgeon can operate on a various size of graft and apply suitable pressure on a graft with the elasticity of rubber bands. Also the dressing method recommended by the author is effective in attaining a high percentage

of skin grafts taken to the recipient, because it could give an even and continuous pressure on the surgical area, and it could be done by a person alone without help from an assistant. If there is suspicion of complications such as, infection, hematoma or seroma, then you can eliminate the dressing easily, observe the surgical area and conduct a proper measure on the area. After a necessary measure is done, you can re-apply the dressing without any difficulty. In addition to that, the method has an extraordinary merit of keeping a good, stable dressing on curvy body parts, which helps us to achieve a high percentage of skin grafts taken to the recipients and reduce the occurrence rate of complications.

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