

## Experience with elastic rubber bands for the tie-over dressing in skin graft

Li-Fu Cheng<sup>a,\*</sup>, Jiunn-Tat Lee<sup>a</sup>, Trong-Duo Chou<sup>c</sup>, Tai-Feng Chiu<sup>c</sup>, Tzong-Bor Sun<sup>a</sup>, Chien-Hsing Wang<sup>a</sup>, Sou-Hsin Chien<sup>b</sup>, Hsian-Jenn Wang<sup>c</sup>

<sup>a</sup> *Division of Plastic Surgery, Department of Surgery, Buddhist Tzu-Chi General Hospital, 707, Sec. 3, Chung-Yang Road, Hualien 970, Taiwan, R.O.C.*

<sup>b</sup> *Buddhist Tzu-Chi General Hospital, Dalin Branch, Taiwan, R.O.C.*

<sup>c</sup> *Tri-Service General Hospital, Taiwan, R.O.C.*

Accepted 31 August 2005

### Abstract

We derived a dressing using elastic rubber bands to tie over the skin graft. This is a simple, easy to perform, timesaving, inexpensive and reliable method for applying pressure over the skin graft compared with traditional methods. Between September 2002 and August 2004, we have used the present dressing technique in 35 patients with 36 grafts in various parts of the body. We chose this method, because of some anatomic areas, such as back, and buttock, which are frequently quite difficult to maintain pressure dressings in place, minimal movement can cause the skin graft to dislodge. The elastic rubber bands, rather than threads, are used as tie-over. Such a dressing permits expansion and contraction, providing a dynamic quality in the most difficult anatomic locations. The patient group consisted of 23 males and 12 females. The age ranged from 34 to 82 years (mean 52.4 years). Defect size ranged from  $3 \times 2.5$  to  $30 \times 20$  cm<sup>2</sup> (mean  $11.2 \times 7.0$  cm<sup>2</sup> in size). The average follow-up was 5.8 months (range: 1–12 months). Among the 36 grafts in our study, all grafts except four showed good to excellent results. The mean graft successful rate is 88%. With our procedure no hematoma formation or shearing force (except one case) occurred in this group of patients during the phase of revascularization, there was, hence, good fixation of the graft by the “tie-over” dressing using elastic rubber bands compared with conventional tie-over dressing, especially in skin grafts of the back site of body and at large graft area. However, it is not suitable for the potentially infectious granulation beds, especially near joint area.

© 2005 Elsevier Ltd and ISBI. All rights reserved.

**Keywords:** Elastic rubber bands; Tie-over dressing; Dynamic; Reproducible

### 1. Introduction

Tie-over dressing is a commonly used technique to secure immobilization of skin graft to the wound bed and to prevent complications such as fluid accumulation, hematoma and shearing force. A traditional tie-over dressing may be applied to support the take of a skin graft. Traditional tie-over dressings are very useful in obtaining pressure over graft on the ventral site of the body until revascularization occurs, but the inelastic threads are used as tie-over, such a

dressing can't provide a dynamic quality to permit stretch of the moving parts of the body. Sometimes, the inelastic threads are too weak to maintain the “stent” effect of the tie-over dressing on the back or buttock. Therefore, when extensive deep burn injury over the back site of the body, it can be a challenging problem for the treating surgeon.

Many methods, which are a modified tie-over dressing [3], stapled tie-over stent [5] and transparent gas bag tie-over [6], have been developed to maximize the chance of good adherence of the graft to the recipient bed. Our study describes the use of the elastic rubber bands for the tie-over dressing. The results of the procedure were satisfactory in most patients with good to excellent take of skin graft in some difficult anatomic locations.

\* Corresponding author. Tel.: +886 3 8561825x2213; fax: +886 3 8577161.

E-mail address: e54978@ms6.hinet.net (L.-F. Cheng).

Table 1  
The underlying disease and the relation with anatomic sites

Site	Total number	Burns	Traumatic defect	Chronic ulcer	Necrotizing fasciitis	Pressure sore	S.C.C.
Scalp	1	0	1	0	0	0	0
Neck	2	2	0	0	0	0	0
Back	5	2	1	0	2	0	0
Chest	1	1	0	0	0	0	0
Abdomen	1	0	0	0	0	0	1
Axillae	2	2	0	0	0	0	0
Upper limbs	2	1	0	0	1	0	0
Lower limbs	17	2	7	7	0	1	0
Buttock	4	1	0	0	0	3	0
Scrotum	1	0	0	0	1	0	0
Total	36	11	9	7	4	4	1

S.C.C., Squamous cell carcinoma.

## 2. Patients and methods

Between September 2002 and August 2004, we have used the present dressing technique in 35 patients with 36 skin grafts in various parts of the body. The patient group consisted of 23 males and 12 females. The age ranged from 34 to 82 years (mean 52.4 years). Underlying diseases were burns in 11 cases, traumatic defect in 9 cases, chronic ulcers in 7 cases, necrotizing fasciitis in 4 cases, pressure sores in 4 cases and squamous cell carcinoma in 1 case (Table 1). Defect size ranged from  $3 \times 2.5$  to  $30 \times 20$  cm<sup>2</sup> (mean  $11.2 \times 7.0$  cm<sup>2</sup> in size). Our method is a slight modification of the technique of Rees [2], and Prunés and Asbun [4]. After the wound is prepared and adequate hemostasis is obtained, the skin grafting procedure is completed in the usual fashion. Four hemostatic forceps are used to keep adequate tension on the elastic rubber bands over the bulky dressing. We use skin staples or nylon threads to tack the sterile elastic rubber bands to anchor the normal skin, as close to the edge of the wound as possible (Fig. 1). The elastic rubber bands may be



Fig. 1. Four hemostatic forceps are used to keep the adequate tension of elastic rubber bands over the bulky dressing. They are anchored to firm, normal skin, as close to the edge of the wound as possible, using skin staples or nylon threads.

looped as necessary when they are applied at large graft area. Even though it is important to apply a sufficient amount of compression over the dressings, excessive tension should be avoided. The dressing is usually left in place for about 5–7 days, but sometimes, assessing the status of the skin graft at 1–3 days is very important to decrease complications before graft failure may occur. The average follow-up was 5.8 months (range: 1–12 months). All patients were follow-up in the outpatient clinic for 1–12 months.

## 3. Results

After surgery, as shown in Table 2, among the 36 grafts in our study, all grafts except four cases showed good to excellent results. Our experience with eight patients using the tie-over dressing technique on the back sites of the body, back five grafts (13.8%) and buttock four grafts (11.1%), showed good results (77.7%) except two grafts. We also used the same tie-over dressing technique to various locations on the ventral site of the body in 27 patients, scalp one graft (2.7%), neck two grafts (5.5%), axillae two grafts (5.5%), anterior chest wall one graft (2.7%), abdominal wall one graft (2.7%), extremities 19 grafts (52.7%) and scrotum one graft (2.7%). We got good to

Table 2  
The distributions of wounds closed with the tie-over dressing using elastic rubber bands

Anatomical location	Number of wounds (n = 36)	STSG (n = 35)	FTSG (n = 1)	Problems	Take
Scalp	1	1	0	N	E
Neck	2	1	1	N	E
Back	5	5	0	C: 1	PL: 1
Chest	1	1	0	N	G
Abdomen	1	1	0	N	G
Axillae	2	2	0	N	G
Upper limbs	2	2	0	N	G
Lower limbs	17	17	0	C: 1	PL: 1
Buttock	4	4	0	C: 1	PL: 1
Scrotum	1	1	0	C: 1	PL: 1

N, none; C, complication; E, excellent; G, good; PL, partial loss of the graft.

Download English Version:

<https://daneshyari.com/en/article/3106974>

Download Persian Version:

<https://daneshyari.com/article/3106974>

[Daneshyari.com](https://daneshyari.com)