Technical and Clinical Experience *with* TELFA CLEAR™

A New Nonadhering, Nonabsorbent Dressing

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ABSTRACT

A randomized, blind study was conducted by an independent research group[1] to determine the nonadherent characteristics of five dry, nonadherent dressings. The dressings included in the study were TELFA CLEAR™ (Kendall Healthcare Products Company), Tegapore (3M Health Care), Conformant 2 (Frastec Wound Care Products), N-Terface (Winfield Laboratories, Inc.) and Dermanet (DeRoyal Industries, Inc.).

The results showed that TELFA CLEAR was almost two and one-half times less adherent than the nearest competitive product. Since nonadherence is a key requirement for a contact layer, TELFA CLEAR was judged to be the superior product in that regard. Clinical benefits of the product are illustrated in two case studies included in this report.

INTRODUCTION

A key component of an ideal wound dressing system is the ability to protect new epithelial and granulation tissue from mechanical trauma during dressing changes. To achieve this, the dressing must be nonadherent. Wounds such as burns, donor sites and skin grafts, as well as chronic and acute wounds, heal by spreading skin cells that multiply to form a continuous surface. When conventional dressings, such as gauze and nonwovens, are applied to these wounds, the open structure of the dressing fabric provides openings that are easily penetrated by the reproducing cells. Loose fibers inherent in the dressing can cause it to become intertwined with delicate epithelial tissue (Figure A). Subsequent removal of the dressing tears the tissue, disrupts the healing process and causes pain for the patient.

In 1952, the TELFA® Nonadherent Dressing was developed to replace dressings that stuck to the wound. Designed and patented by The Kendall Company, the TELFA Dressing combines a perforated, polyester film with a dense, nonwoven cotton layer. Together, these components provide a dressing which is both absorbent and nonadherent. The specially designed film surface is composed of hundreds of minute perforations that act as a selective membrane. The size of the holes allow the passage of wound fluid into the absorbent layer, but block the entrance of the larger epithelial buds (Figure B).

Recently, the TELFA product line was expanded to include TELFA CLEAR, This product is a nonadherent contact layer made from the unique perforated TELFA film.

It does not contain an absorbent layer, allowing the clinician the freedom to choose the most appropriate absorbent secondary dressing for each wound. Some suggested dressings include:

- TENDERSORB® Abd Pads
- KERLIX® Bandage Rolls
- CURITY® Gauze Dressings
- VENTEX™ Absorbent Dressings
- CURASORB™ Calcium Alginate Dressings

While other companies have attempted to imitate TELFA by creating

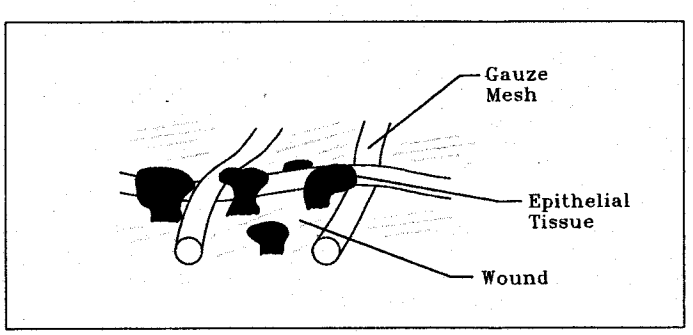


FIGURE A
Healing Wound with Gauze

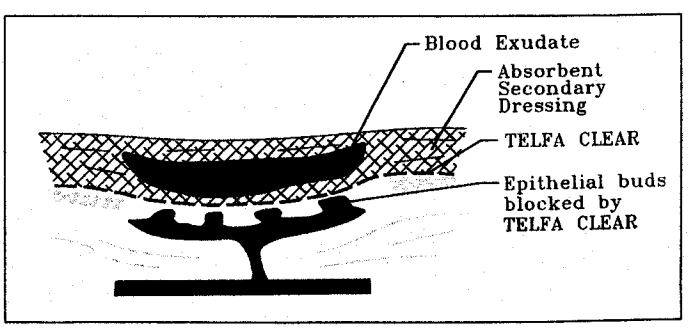
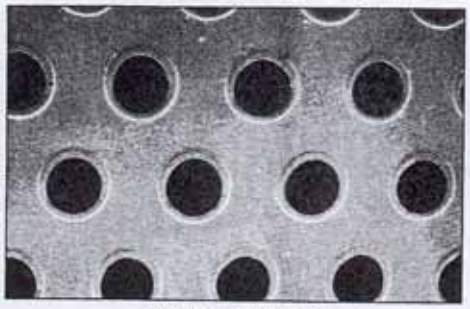
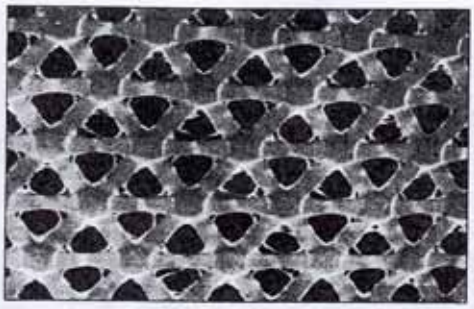


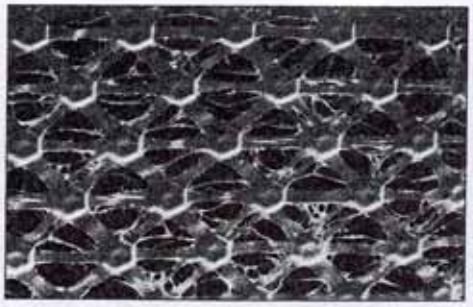
FIGURE B
Healing Wound with TELFA CLEAR



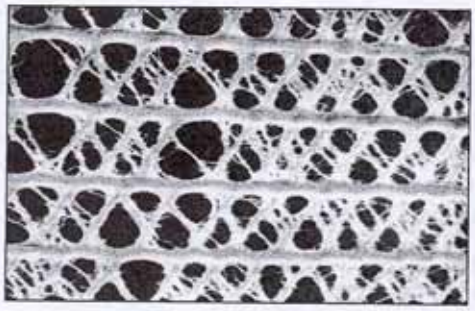
TELFA CLEAR
(Kendall)



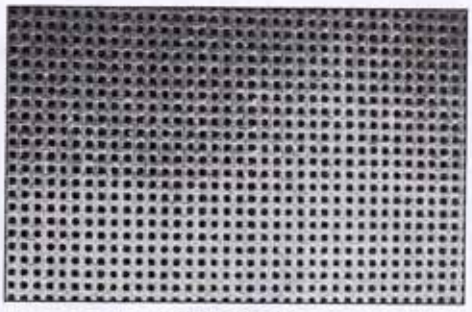
DERMANET
(DeRoyal)



CONFORMANT 2
(Frastec)



N-TERFACE
(Winfield)



TEGAPORE
(3M)

FIGURE C
(Each product magnified 20 times)

films with repetitive hole structures, these films either contain significant numbers of fibers or have very small perforations (Figure C). As established earlier, the size and design of the holes, as well as the method of creating the apertures, determine the nonadherent property of the dressing. Further, it was hypothesized that the fibrous nature and hole structure of the competitive films would cause them to be more adherent than TELFA CLEAR. An in vitro laboratory test using a simulated wound was conducted to evaluate the competition.

STUDY METHODOLOGY

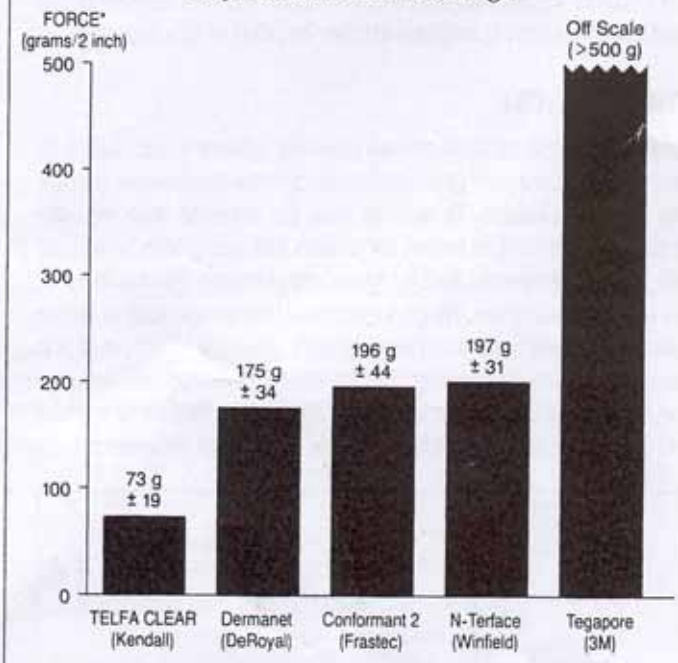
The nonadherent characteristics of five film dressings were measured in a randomized, blind trial conducted by an independent research group[1]. Ten samples of each dressing were chosen, randomized and coded. These included TELFA CLEAR, Tegapore, Conformant 2, N-Terface and Dermanet.

A whole steer liver (approximately 12 hours postmortem) was sliced into 2" x 4" strips. Each strip was glued to a petri dish. A dressing sample was then placed on the liver strip and smoothed out with a gloved finger to ensure complete contact. Adhesion was measured two hours later by peeling each dressing sample from the liver at a 90-degree angle at a constant rate (Model 1122 Instron using a 500g load cell). Ten values of each sample were averaged to determine the force of adhesion for each product.

RESULTS

The results showed that TELFA CLEAR Wound Dressings were significantly less adherent (Figure D). Adherence was measured by the force required to remove the dressing from the liver. For example, Tegapore, the most adherent dressing, required more than 500 grams of force to remove it from the simulated wound. TELFA CLEAR, on the other hand, was the least adherent since it required only 73 grams of force to remove it from the liver strip. These results indicate that fibrous products are more adherent than nonfibrous dressings. In addition, the size and structure of the holes affect adherency. The proven nonadherence of TELFA CLEAR suggests that it would be an effective clinical product, minimizing wound trauma and reducing patient pain.

FIGURE D
A Comparison of Adherency Among Dry, Nonadherent Dressings

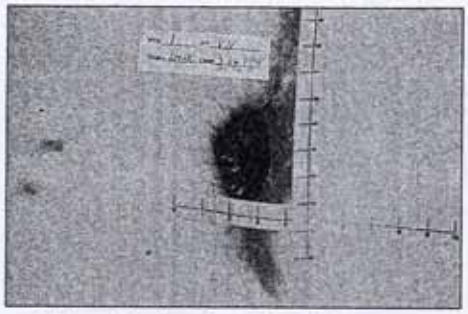


**In this test, adherence was measured by the amount of force required to remove the dressing from the liver. For example, Tegapore was judged the most adherent because it required more than 500 grams to remove it from the liver. TELFA CLEAR was judged least adherent since it required only 73 grams of force to remove it from the liver strip.*

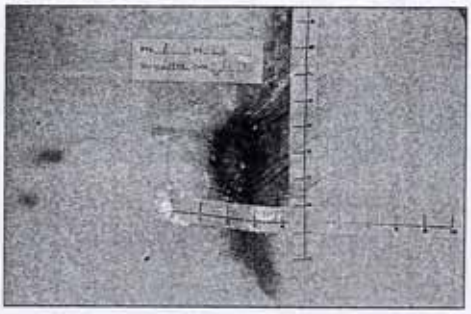
CASE STUDIES

The following case studies reveal the benefits of using TELFA CLEAR on an acute surgical wound and a pressure ulcer. The patients with these wounds were seen by an enterostomal therapy nurse consultant working with a wide variety of home-health agencies and hospitals in the Chicago area.

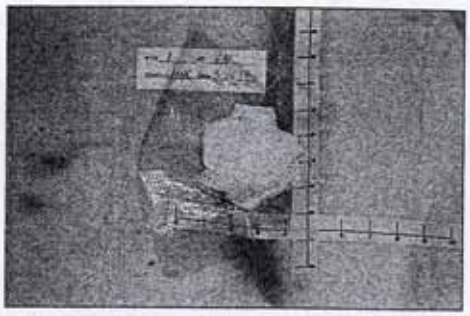
CASE STUDY #1



Wound before dressing placement.



TELFA CLEAR lining wound cavity.



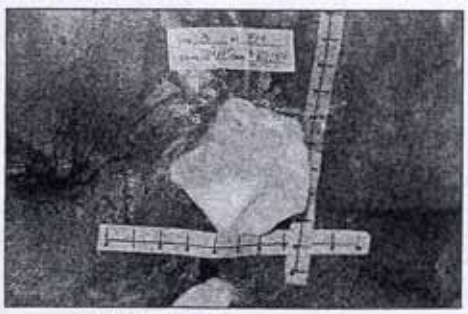
TELFA CLEAR interface between wound and secondary dressing.

■ *In the first case, a 76-year-old female was receiving home health services for a full-thickness abdominal wound resulting from surgery for a gastro-jejunostomy and vagotomy performed on November 9, 1993. Complications from infection required that the surgical incision be left open to close by secondary intention. The original size of the wound was 8cm x 4cm with a depth of 3.5cm. Initially, the wound showed signs of improvement with twice daily dressing changes of normal saline dressings; however, the dressings were adhering to the wound bed. At the same time, skilled nursing visits needed to be decreased. The ET nurse recommended placing TELFA CLEAR in the wound bed with the saline dressing on top, allowing for easy removal of the dressing by the patient. On March 15, 1994, when TELFA CLEAR was first applied, the wound measured 3.2cm x 1.9cm with a depth of 2.5cm. Ten days later, the wound measured 2.7cm x 1cm with a depth of 1.5cm, a 73.3 percent decrease in wound area.*

CASE STUDY #2

Wound without dressings.

TELFA CLEAR lining undermined wound.



TELFA CLEAR contact layer with CURASORB™ packing.

■ *In the second case, a 72-year-old male was receiving home health services for multiple pressure ulcers. The patient's history included multiple sclerosis, urinary retention, constipation and pressure ulcers that were surgically managed. The patient's current condition left him with a pressure ulcer on the left upper buttock that measured 3cm x 2.5cm with 3cm of undermining. The ulcer was granular with some yellow slough and moderate serous drainage. The patient's wife provided care with the help of weekly skilled nursing visits. Initially, the ET nurse suggested using calcium alginate dressings with a transparent film covering to be changed three times per week. However, the care provider had difficulty removing the alginate from the undermined tissue, so the ET nurse recommended placing TELFA CLEAR in the wound prior to packing it with the alginate. As a result, the dressing changes were simplified and the skilled nursing visits remained weekly.*

Both of these cases illustrate how TELFA CLEAR improved wound management. In each instance, the product was easy to apply, provided pain-free removal, protected the wound bed and transferred the exudate to an absorbent layer. Further, it decreased the cost of care by minimizing skilled nursing visits and allowing the care providers to manage the healing process with confidence and independence.

SUMMARY

TELFA Dressings have been used for more than 40 years. Independent testing strongly supports the use of TELFA CLEAR Wound Dressings by demonstrating that it has the least adherent properties of the five, dry, nonadherent dressings tested. In fact, the nearest competitive product was almost two and one-half times as adherent as TELFA CLEAR, dramatically illustrating the nonadherent properties of the patented TELFA design.

Further, the two case studies in this paper show how TELFA CLEAR improved the wound management of a surgical wound and a pressure ulcer. In both instances, TELFA CLEAR helped protect the wound bed while allowing for the growth of new epithelial and granulation tissue. It also provided easier dressing removal, less mechanical trauma to the wound site and enhanced patient comfort. Finally, it helped reduce the cost of care by decreasing the number of skilled nursing visits needed and enabling the care provider to change the dressings with ease and confidence.

In summary, TELFA CLEAR Wound Dressings are the superior dry, nonadherent dressings for a variety of acute and chronic wounds such as surgical wounds, donor sites, skin grafts, burns and chronic wounds.

1 "Measurement of Non-Adherent Properties of Wound Care Dressings Using an In Vitro Model," performed by the Department of Materials Science and Engineering, University of Florida; March 28, 1994. Results on file with the Kendall Healthcare Products Company.

KENDALL
HEALTHCARE PRODUCTS COMPANY

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