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Enhancing Scar Management Combination Therapy: Initial Experiences with Silicone Lined Thermo-formable Foam.¹

Lisa Forbes Duchart MSc OT Reg (MB) & Jonathan Niszczyk, MS, OTR/L

HEALTH SCIENCES CENTER WINNIPEG, MANITOBA
TEMPLE UNIVERSITY BURN CENTER PHILADELPHIA, PENNSYLVANIA

The early uses of silicone gel and pressure modalities have been widely documented in the literature as the preferred treatment to inhibit hypertrophic scar development. The burn therapist requires many options for scar management and the choice of treatment modality depends on several factors such as location of the scar on the body, skin breakdown and how the modality impacts on the patient's functional ability and overall tolerance to therapeutic intervention. Providing adequate pressure to the axilla and neck presents significant challenges. These areas' concavity, highly mobile joint structures, and skin creases often result in profound scar limitations if not adequately managed. Pressure garments alone do not provide adequate pressure to concave areas, and silicone gel is often difficult to secure in these mobile areas. Many splints have been described to manage neck and axilla burns. While rigid materials provide good pressure to concave areas, they may not be appropriate due to potential limitations in functional mobility and poor patient compliance. The goal for an effective treatment modality is to simplify combination therapy (i.e. silicone and pressure), therefore minimizing burden with the intervention so that optimal scar management is attained.

At the 42 Annual American Burn Association Conference, a poster presentation was given on the clinical experiences with new material, silicone lined thermo-formable foam (Silon-STF™) has been developed and trialed for use as neck and axilla conformers as an adjunct to conventional scar treatment in two clinical burn facilities. The silicone layer is supple and conforms well to concave surfaces. Silon-STF™ conformers are flexible and comfortable, and can be used for early pressure when skin is still fragile. Conformers made of this material were noted to be rigid enough to serve as both a positioning device and flexible insert in the pediatric population. The conformers are cleaned easily and are impervious to moisture. With the silicone layer incorporated directly into the device, combination therapy is effectively provided and splint design is streamlined.

We have used the Silon-STF™ material successfully for axilla and neck conformers and achieved successful combination therapy. This unique product incorporates the benefits of pressure and silicone into a single modality. Based on our initial positive experiences with this material, Silon-STF™ will be incorporated into our regular scar management protocols. Additional applications will be investigated such as conformers for other challenging anatomical areas, pediatric splints, and inserts under pressure garments.

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Enhancing Scar Management Combination Therapy: Initial Experiences with Silicone Lined Thermo-formable Foam



Lisa Forbes-Duchart, MSc, OT Reg (MB)¹; Jonathan Niszcza, MS, OTR/L²
¹Health Sciences Centre, Winnipeg, Manitoba; ²Temple University, Philadelphia, Pennsylvania



Introduction

The early use of silicone gel^{1,2} and pressure modalities^{3,4,5,6,7} have been widely documented in the literature as the preferred treatment to inhibit hypertrophic scar development.

The burn therapist requires many options for scar management and the choice of treatment modality depends on several factors such as location of the scar on the body, skin breakdown and how the modality impacts on the patient's functional ability and overall tolerance to therapeutic intervention.

Providing adequate pressure to the axilla and neck presents significant challenges (Figure 1). These areas' concavity, highly mobile joint structures, and skin creases often result in profound scar limitations if not adequately managed.

Pressure garments alone do not provide adequate pressure to concave areas, and silicone gel is often difficult to secure in these mobile areas.

Many splints have been described to manage neck and axilla burns^{8,9}. While rigid materials provide good pressure to concave areas, they may not be appropriate due to potential limitations in functional mobility and poor patient compliance.

The goal for an effective treatment modality is to simplify combination therapy (i.e. silicone and pressure), therefore minimizing burden with the intervention so that optimal scar management is attained.

Method

A new material, silicone lined thermo-formable foam (Silon-STF™) has been developed and trialed for use as neck and axilla conformers as an adjunct to conventional scar treatment in two clinical settings.

Silon-STF™ is comprised of traditional thermo-formable foam with a patented layer of silicone bonded to one side of the surface that provides great elasticity (Figure 2).

Silon-STF™ is heated in a convection oven as per traditional thermo-formable foams.

The Silon-STF™ heats quickly (2-3 minutes) and molds easily – maintaining desired shape when cooled.

A protective barrier, such as stockinette, is required during the forming process due to the heat retaining properties of the silicone lining (Figure 3).

Conformers may be trimmed as normal and straps may be added using rivets or adhesives (Figure 4).

Conformers may be made for many anatomical locations, such as the neck (Figure 5) and the axilla (Figure 6).

Results

Advantages:

The silicone layer is supple and conforms well to concave surfaces.

Silon-STF™ conformers are flexible and comfortable, and can be used for early pressure when skin is still fragile.

Patients who are unable to use a rigid neck orthotic report increased compliance with the STF™ neck conformer due to improved comfort and freedom of movement.

Conformers made of this material were noted to be rigid enough to serve as both a positioning device and flexible insert in the pediatric population.

The conformers are cleaned easily and are impervious to moisture.

The silicone layer is thin, durable and lasts the life of the conformer.

With the silicone layer incorporated directly into the device, combination therapy is effectively provided and splint design is streamlined.

Disadvantages:

In some of these initial prototypes, we have noted that the silicone layer released from the thermo-formable foam after several months of use. The manufacturer is working on alternative foams to eliminate this issue and increase wear tolerances for prolonged splint management.

The material will not replace conventional thermoplastics where greater than moderate rigidity is required – i.e. where significant contractures are present.

Conclusions

We have used the Silon-STF™ material successfully for axilla and neck conformers and achieved successful combination therapy.

This unique product incorporates the benefits of pressure and silicone into a single modality.

The material is easy to use and comfortable for the patient.

Based on our initial positive experiences with this material, Silon-STF™ will be incorporated into our regular scar management protocols.

Additional applications will be investigated such as conformers for other challenging anatomical areas, pediatric splints, and inserts under pressure garments.

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Figure 1: Hypertrophic scarring of the axilla with anterior and posterior bands developing



Figure 2: Thermo-Formable foam with a layer of bonded silicone



Figure 3: Forming the STF



Figure 4: Straps are added using rivets



Figure 5: Neck conformer



Figure 6: Axilla conformer