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**Management of a Challenging Pediatric Burn Scar
Utilizing a Novel Silicone Impregnated Low
Temperature Thermoplastic Splint Material**

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Management of a Challenging Pediatric Burn Scar Utilizing a Novel Silicone Impregnated Low Temperature Thermoplastic Splint Material.¹

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Introduction: Pediatric facial burns pose unique challenges for cosmesis as well as for implementation of scar inhibiting devices to mitigate contracture. Moreover, an effective treatment must also consider both the psychosocial and economic barriers that are present with the physical scars to render compliance effective.

Methods: An 11 y.o. male sustained a 3.5% TBSA burn to his right hand and side of face requiring Integra placement and skin grafting. Management of scarring included the use of a silicone textile (Silon-TEX) glove for right hand and the use of a silicone impregnated low temperature thermoplastic splint (Silon-LTS) under a facial hood for scar control.

Results: Initial compliance with both the glove and facial splint was limited and subsequent scarring was evident. Financial resources for a full face mask were limited and the patient would not tolerate the mold procedure for a full mask. However, after 6 weeks of use with the low temperature splint on the face, the right eye contracture diminished and scar appearance significantly decreased via Vancouver Scar Scale assessments.

Conclusions: Use of this low temperature silicone impregnated thermoplastic material (Silon-LTS) provided a cost effective scar device that has reduced the contracture and hastened the need for contracture release. Additionally, this material allowed for quick fabrication, direct modification and ease of use under a garment to facilitate compliance and use in both social and home settings. This device has demonstrated effective scar reduction with a limited wearing schedule (8-12 vs. 23 hours daily) and allowed this child to reintegrate effectively into social settings.

Applicability of Research to Practice: This material can be readily used without extensive fabrication time or processes to manage facial scarring especially when cost prohibits other types of devices. Additionally, the combined use of pressure and silicone in this material helps to enhance compliance in the pediatric population and facilitate cosmesis with only limited use.

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Introduction:

Pediatric facial burns pose unique challenges for comesis as well as for implementation of scar inhibiting devices to minimize scar contracture. Moreover, an effective treatment must also consider both the psychosocial and economic barriers that are present with the physical scars to render compliance effective and produce a successful result.

Methods:

An 11 year old male sustained a 3.5% TBSA burn to his right hand and side of face requiring Integra placement and skin grafting (Figure 1). Management of scarring included the use of a silicone lined textile glove (Silon-TEX[®]) for right hand and the use of a silicone impregnated low temperature thermoplastic splint (Silon-LTS[®]) under a pressure garment hood for scar control (Figure 2).

Results:

Initial compliance with both the glove and facial garment without the splint was limited and subsequent scarring was evident which resulted in loss in functional ROM in the hand and tightening of the right eye (Figure 3). Financial resources for a full face mask were limited and the patient would not tolerate the mold procedure for a full mask. However, after 6 weeks of use with the low temperature splint on the face, the right eye contracture diminished and scar appearance on the face significantly decreased via Vancouver Scar Scale assessments (Figure 4).

Conclusions:

Use of this low temperature silicone impregnated thermoplastic material provided a cost effective scar device that has reduced the scar and hastened the need for contracture release. Additionally, this material allowed for quick fabrication, direct modification and ease of use under a garment to facilitate compliance in both social and home settings. This device has demonstrated effective scar reduction with a limited wearing schedule (8 hours vs. 23 hours daily) and allowed this child to reintegrate effectively into social settings at 10 months post injury (Figure 5).

Applicability of Research to Practice:

This material can be readily used without extensive fabrication time or processes to manage facial scarring especially when cost prohibits other types of devices. Additionally, the combined use of pressure and silicone in this material helps to enhance compliance in the pediatric population and facilitate cosmesis with only limited use.



FIGURE 1: Integra at 2 weeks post grafting



FIGURE 2: Silon-LTS splint insert used under hood



FIGURE 3: Increased scar appearance at 3 months without splint use



FIGURE 4: Increased scar cosmesis with LTS device at 10 months post injury



FIGURE 5: Scar outcome at 10 months