



Therapist Management of a Full-Thickness Facial Burn with a Silicone Lined High Temperature Thermoplastic Splint: A Clinical Case Report

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Introduction: An appropriately fitting facial mask is an essential component in the management of facial scarring and in the rehabilitation of burn scars. This device must also be cosmetically appealing and durable as well as moldable and adaptable to address the changing and developing scar as it matures. Utilizing effective pressure management to address the developing scar is a mainstay of the burn rehabilitation therapist. More recently, silicones have also been shown to be beneficial in the management of burn scars and are a useful option in scar treatment. Splinting with a high temperature thermoplastic is the material of choice to manage burns on and around the face and neck. This case study will demonstrate effective splint management utilizing a silicone lined high temperature thermoplastic (Silon-STS®) that combine pressure and silicone in a single, durable, effective and cosmetically appealing design.

Method: A 28 year old female sustained a 3% TBSA full thickness contact burn injury to the right side of her face including the right oral commissure. She received a sheet graft with a dermal replacement material to cover the area (Figures 1&2). A splinting program was initiated immediately post-operatively and was continued in conjunction with a supervised exercise program focusing on maintaining mouth mobility and symmetry. Once initial healing was attained, a high temperature silicone lined thermoplastic (Silon-STS®) was use to fabricate a ½ face mask that incorporated a pressure rim that reached into and around the right oral commissure (Figures 3&4). This component was an essential part of the design to maintain pressure to the face and mouth together. The patient also performed ROM facial exercises in addition to wearing the mask.



Figure #1



Figure #2

Results: The patient was compliant with the daily wearing schedule and performing the exercise program. The ½ mask was able to be spot heated and modified to increase pressure to the scar over 8 months and this material maintained excellent durability and silicone contact throughout the entire wear. The fit of the mask was enhanced with the silicone lining and allowed for increased fit and contour around the jaw, cheek, lip and mouth. The graft was noted to have a very favorable appearance of flat, smooth, flexible and cosmetically appealing appearance.



Figure #3



Figure #4

Conclusion: This patient had a significantly improved cosmetic outcome utilizing the Silon-STS® material in conjunction with a supervised exercise program and compliant wearing schedule (Figures 5&6). ROM of the mouth in both vertical and horizontal planes was within functional limits and no deficits in ADL and mobility were noted post treatment with this device. This material demonstrated identical characteristics as compared to conventional high temperature materials used in burn rehabilitation. Additionally, the added benefit of a silicone lining allowed for increased fit, transparency and comfort increasing patient compliance and satisfaction with the overall device. The Silon-STS® material proved to be an effective choice in the management of facial scarring and is a material of choice for the burn rehabilitation professional to effectively manage scar hypertrophy.



Figure #5



Figure #6



Figure #6