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The Novel use of a Self-Adhesive Silicone Fabric Sheeting for Managing Difficult Eye Contracture - A Case Report

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The Novel use of a Self-Adhesive Silicone Fabric Sheeting for the Management of Difficult Eye Contracture – A Case Report¹.

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Burn injury and subsequent scarring to the eyelids and adjacent tissue can lead to diminished eye function. In particular, impaired protraction (lid closure) caused by mechanical restriction of scars around the eye can result in keratitis, loss of protective blink, and damage to the sclera or cornea by prolonged socket exposures. Nonsurgical management of facial scars typically includes active facial exercises, scar massage, face mask and/or silicone application. However, applying these techniques directly to the healing skin on and around the eyes is difficult due to fragile eye structures. Furthermore, the functional need for lid opening during the waking hours makes management of eyelid retraction particularly challenging. This paper describes a novel technique for the management of eyelid retraction during the prolonged hours sleep using a soft material that easily adheres to the scars without causing harm.

A 16 year old Hispanic male suffered a 50% TBSA electrical burn involving the face and head. The patient was able to maintain full eye closure with effortful exercises. However, during sleep, with the facial muscles relaxed, the eye lids did not approximate forming a resulting in a progressive eyelid retraction contracture. The patient complained of eye pain and dryness upon waking in the morning and began to experience some loss of visual acuity. A piece of self-adhesive silicone fabric strip was cut into a crescent shape. One end was secured to the upper eyelid while the other end was angled around the corner of the eye, pulled caudally to fully close the lids and secured to the zygomatic bone.

The material (Oleeva Fabric®) used was a patented combination of silicone and PTFE which had the ideal combination of elasticity and strength to overcome mild eyelid retraction and prevent further contracture. Furthermore, the silicone lining safely adhered to the skin, softening the scar and providing gentle compression - both key tenants of the effective scar management. The material served as a soft splint used during the sleep state and obviated the need for surgical reconstruction. The patient was independent with application, demonstrated excellent compliance and reported improved comfort.

This novel technique, using materials for scar management, offer the burn patient a comfortable, versatile and prolonged intervention to manage contractures of the eyes.

¹ [abstract] In: Proceedings of the Western Region Burn Conference of the American Burn Association; 2010 October 14-16; San Francisco, California. p16.

The Novel use of a Self-Adhesive Silicone Fabric Sheeting for Managing Difficult Eye Contracture – A Case Report



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INTRODUCTION

Burn injury and subsequent scarring to the eyelids and adjacent tissue can lead to diminished eye function. Impaired protraction (lid closure) caused by mechanical restriction of scars around the eye can result in:

- keratitis
- loss of protective blink
- damage to the sclera or cornea
- prolonged socket exposure

Nonsurgical management of facial scars typically includes:

- active facial exercises
- scar massage
- face mask
- silicone application

Applying these techniques directly to the healing skin on and around the eyes is difficult due fragile eye structures. Furthermore, the functional need for lid opening during the waking hours makes management of eyelid retraction particularly challenging. This paper describes a novel technique for the management of eyelid retraction during the prolonged hours of sleep using a soft material that easily adheres to the scars without causing harm.

METHODS

A 16 year old Hispanic male suffered 50% TBSA electrical burn involving the face and head, demonstrating significant scarring around the right eye. The patient was able to maintain full eye closure with effortful exercises.

However, during sleep (with the facial muscles relaxed), the eye lids did not approximate, resulting in a progressive eyelid retraction contracture.

The patient complained of eye pain and dryness in the morning and began to experience some loss of visual acuity. A piece of self-adhesive silicone fabric was cut into a crescent shape. One end was secured to the upper eyelid, while the other end was angled around the corner of the eye (pulled caudally to fully close the lids) and secured to the skin over the zygomatic bone.

RESULTS

The material used was a patented combination of silicone and poly-tetrafluoroethylene which had an ideal combination of elasticity and strength to overcome mild eyelid retraction and prevent further contracture. Furthermore, the silicone lining safely adhered to the skin, softening the scar and providing gentle compression - both key tenants of effective scar management. The material served as a soft splint during sleep hours and delayed the need for surgical reconstruction. The patient was independent with application, demonstrated excellent compliance and reported improved eye comfort.

The technique has been used on 3 patients with good result. It can be applied as early as skin integrity allows. The silicone strip may start on the upper or lower lid and be pulled and anchored in whatever direction is necessary to correct contracture.

Series 2: 11 year old girl X days post burn injury.



Effortful closure of eyes



Position of eyes during sleep



Silicone strips applied



Worn for 6-8 hours while sleeping

CONCLUSION

This novel technique, using materials for scar management, offers the patient with burn injury a comfortable and versatile intervention for managing contractures of the eyes during sleep hours.

RELEVANCE

Tool for contracture management.



How To

