Alternating two-piece facial orthosis: a novel design for improved outcomes

Trudy Boulter, OTR/L, CHT, BT-C
Children's Hospital Colorado
Anschutz Medical Campus, CO

Background

Fabrication of a total contact facial orthosis is the standard of care for children and adults who sustained a burn injury that requiring greater than 21 days to heal.

A facial orthosis must be modified regularly for optimal outcomes. Modifications of the full facial orthosis can often impact fit of the entire facial orthosis especially for the therapist with limited skill in making adjustments.

Achieving optimal wear time is difficult due to decreased mobility, poor temperature regulation and the need for frequent donning and doffing for eating.

Methods

A facial scan is obtained and quality photos are taken. Assessment of scar bands and the bony contours available for stabilization of the scar are identified. A two-piece design is created to maximize skin length, provide optimal pressure and allow for active movement. The mask is then pulled using 1/16inch silon lined material. Strapping options are assessed for ease of donning and doffing and for uniform pressure.

The wear schedule is established with the family alternating upper and lower portions during the day. A full face orthosis is provided for nighttime wear and is held in place with an interim featureless face compression garment.

Full facial orthosis: traditional orthosis worn at night

Results

Upper portion: provides compression to forehead, medial canthus, lateral borders of nose, upper lip, upper cheekbones

Lower portion : provides maximum compression to cheeks, jaw line, chin shelf , chin and lower lip

Conclusions

- An alternating two-piece facial orthosis design maximizes tissue length, optimizes pressure, increases scar mobility, allows for greater specificity and ease of modifications and supports functional skills and facial expression.
- Stabilization of the scar allows active facial mobility, expression and eating, improves elasticity and tissue length within the scar, decreases the impact of primary and secondary scar contracture and improves patient compliance due to ease of use and increased choice.
- Allowing active range of motion throughout the day preserves strength while counteracting the forces of scar hypertrophy and contracture.

References

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