

Modified Neck Conformer

Name: Malvina Sher, PT and Jena Morreale, MS OTR/L

Title of Splint: Modified Neck Conformer

Facility Name and Address: New York Presbyterian Hospital—Weill Cornell Medical Center, 525 E. 68th St, NY, NY 10065

Phone Number: 212-746-1598

Email: mas9062@nyp.org, jem7010@nyp.org



Description of Splint:

This neck splint was developed after a nine year old boy experienced a flame burn to the neck, the chest, and B UE that required multiple skin grafts. Due to subsequent scarring, the patient was noted to have poor cervical posturing causing a limited chest expansion. His head-forward posturing led to a restriction in the ability to swallow and his decreased active cervical range of motion contributed to compromised functional independence during activities of daily living. Additionally, this patient developed hypersensitivity to light touch throughout the grafted areas. The need to fabricate a positioning device to

prevent cervical contractures as well as desensitize the skin was eminent. As the patient's healing improved, the addition of Silipos sleeves, to assist with scar management, was implemented.

Materials Used:

- Contouring Splint Material (Taylor, Polyform, NCM Perferred, Polyflex II)
- Polycushion
- Velcro (male/hook)
- Strapping (1 or 2 inch depending on the size of the patient)
- Optional: Silipos sleeves or adhesive silicone



Fabrication Instructions:

Anterior Portion

- 1.) Place patient in supine with neck in slight extension.
- 2.) Measure the width of the pattern, which begins from the mandible angle and extends to the contralateral mandible angle. Next, measure the height which will begin from the lower lip and end at the top of the clavicle. Then copy this pattern onto the thermoplastic conforming material.
- 3.) Cut pattern of thermoplastic conforming material.
- 4.) Conform thermoplastic material into anterior neck and jaw.

- 5.) For comfort and to prevent skin breakdown, line the inner portion of the splint, which is in contact with the patient's skin, with polycushion.
- 6.) Place Velcro and strapping onto anterior portion.



Anterior portion of splint with strapping

Posterior Portion

- 1.) Measure pattern of the posterior aspect of neck with the top of the material at mid occiput region of the skull, extending downward ending at T3 vertebrae. The width of the posterior piece is approximately 2 inches to the right and 2 inches to the left of the spine.
- 2.) Copy this pattern onto thermoplastic material, then cut out pattern.
- 3.) Mold material onto patient, following cervical lordosis curve with neck in slight hyperextension.
- 4.) Place one piece of male (hook) velcro to the posterior portion of the material.
- 5.) Connect the anterior and posterior portions of the splint using strapping.



Posterior aspect of splint

Optional Addition for Scar Management

- 1.) When the skin is healed and intact, may add a half-coated Silipos sleeve or adhesive silicone for scar management to the anterior or posterior portion of the splint with mineral/silicone portion against the patient's skin.
- 2.) Where the strapping is in contact with the patient's skin, an additional thinner Silipos sleeve/adhesive silicone can be placed over the strapping, which is connecting the two portions of thermoplastic material



Anterior portion of splint with Silipos sleeve



Application of anterior and posterior portions of splint, secured with strapping

Advantages:

- 1.) Maintaining correct posture at cervical area
- 2.) Improved breathing with upper chest expansion
- 3.) Improved swallowing capability
- 4.) Increased visual field
- 5.) Scar management
- 6.) Improved ADL

Disadvantage:

- 1.) Poor patient compliance
- 2.) Possibility of skin breakdown

Indications:

For patients with anterior neck and upper chest burns or scarring that lead to a decreased cervical extension

Precautions/Contraindications:

C-spine precautions and compromised skin at bony prominences

Level of Therapist:

Intermediate level of splinting knowledge

Total time to Fabricate Splint:

1 therapist at approximately 60 minutes

References:

Serghiou, M., Holmes, C., and McCauley, R. (2004). A survey of current rehabilitation trends for burn injuries to the head and neck. *J Burn Care Rehabil.* **25: 514-518.**

For additional information, please contact Melvina mas9062@nyp.org or Jen jem7010@nyp.org