Maxillary DO can be performed with internal or external distraction devices. The advantage of rigid external distraction (RED) devices is that they allow for adjustment of the distraction vector. However, RED headframes are not well-tolerated by patients. The decision on how much to distract depends on the distance the maxilla is to be advanced. Traditional treatment with distraction devices has patients maintain the device for at least twice the amount of time they are distracted in order for the newly formed bone to heal. Some surgeons leave the headframe on for even longer in order to avoid relapse. In an effort to minimize the length of RED headframe wear-time, which is the main disadvantage of the DO technique that we have used for LFI procedures in the past, we have begun to employ a new protocol for LFI distraction. Our approach to LFI distraction minimizing head frame wear is as follows: (1) LFI and RED device; (2) Distract to Class II occlusion; (3) Remove RED device, put in IMF, plate and bone graft anterior maxilla; (4) Remove IMF after 2 weeks. This protocol obviates the need for long wear of the RED headframe and gives a fuller, more stable maxilla. The purpose of this study was to evaluate the safety and efficacy of our new protocol for LFI advancement and to retrospectively review outcomes of 21-years of LFI procedures performed by a single surgeon in order to provide clinical insight on different LFI protocols.

**METHODS AND MATERIALS:** Patients who underwent LFI advancement as performed by the senior author between 2000 and 2021 were identified via a retrospective chart review. Parameters, including diagnosis, age, follow-up time, use and type of distraction technique, use of intermaxillary fixation, re-operations, and complications, were recorded.

**RESULTS:** Records were reviewed for 55 patients who met inclusion criteria. Mean follow-up time was 2.14 ± 2.5 years (range: 0.01–9.93 years). In total, 75% of patients underwent LFI without distraction, 20% underwent LFI with distraction with the traditional approach, and 5.5% underwent LFI with distraction with the new approach. Mean age at surgery was 17.7 ± 6.4 years. Mean distraction distance was 7.2 ± 3.8 in the LFI without DO group, 16 ± 3.4 mm in the LFI with traditional DO protocol group, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group. Mean duration of headframe usage was reduced from 11.6 ± 5.5 weeks for the traditional approach, and 22.5 ± 3.4 mm in the LF I with the new DO protocol group.

**CONCLUSIONS:** Our new protocol for LFI advancement with distraction effectively minimizes head frame wear-time, which is the main disadvantage of the DO technique that we have used for LFI procedures in the past, we have begun to employ a new protocol for LFI distraction. Our approach to LFI distraction minimizing head frame wear is as follows: (1) LFI and RED device; (2) Distract to Class II occlusion; (3) Remove RED device, put in IMF, plate and bone graft anterior maxilla; (4) Remove IMF after 2 weeks. This protocol obviates the need for long wear of the RED headframe and gives a fuller, more stable maxilla. The purpose of this study was to evaluate the safety and efficacy of our new protocol for LFI advancement and to retrospectively review outcomes of 21-years of LFI procedures performed by a single surgeon in order to provide clinical insight on different LFI protocols.
wear and allows for maxillary advancement without additional risks or disadvantages compared with the traditional approach.

**Soft Tissue Molding as a Nonsurgical Adjunct in the Treatment of Nasal Deformities**

**Presenter: Erin Wolfe, BS**

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**BACKGROUND:** Surgical procedures intended to reconstruct or improve nasal morphology, such as forehead flap nasal reconstruction or correction of cleft lip nasal deformities, may conversely result in nasal deformities such as nasal stenosis and other abnormalities due to the formation of scar tissue and subsequent contraction of soft tissues. Nasal orthopedic appliances can be utilized for postsurgical soft tissue molding to maintain patency of the round structure of the nostril against forces of scar contracture, as well as elongate the soft tissue, resulting in a better form and shape of the nasal structures. Drawing on experience gained with passive nasoalveolar molding devices for presurgical treatment of children with cleft lips, our institution has designed a nasal molding appliance for correction of nasal and nostril deformities. The “orthonostric approach” entails molding of the nasal soft tissues with appliances designed to correct nostril asymmetry or stenosis. The purpose of our study was to describe our nasal molding protocol and to evaluate soft tissue elongation and symmetry following application of our nasal molding appliances.

**METHODS:** Patients who underwent the orthonostric approach were identified via retrospective chart review. Inclusion criteria included a diagnosis of nostril stenosis or otherwise misshapen nasal and nostril structures, and treatment with nasal orthopedic appliances. Anthropometric evaluation was conducted on pre- and postorthonostric treatment photographs in order to evaluate differences in symmetry, morphology, and tissue elongation. Mean anthropometric measurements for patients treated with the orthonostric approach were compared with mean Farkas anthropometric values for normal patients (columella length/nasal tip protrusion). The ratio of the columella length/nasal tip protrusion ratio for the ipsilateral affected nostril and the contralateral nostril was also compared before and after treatment.

**RESULTS:** Forty-two patients were identified via retrospective review. Mean age at initiation of treatment was 25.0 ± 22.2 years (range: 2.0–76.2 years). The most common causes of nasal abnormalities included unilateral (54.8%) and bilateral cleft lip (9.5%) repair with nasal correction, and trauma (9.5%), nasal basal cell carcinoma (9.5%), malignant melanoma (4.8%), and substance abuse (4.8%) requiring forehead flap nasal reconstruction. Mean duration of nasal molding was 6.4 months ± 3.6 months (range: 2.0–16.0 months). Patients treated with nasal orthopedic appliances had improved morphology of the deficient nostril. Results following orthonostric treatment resemble the dimensions and ratios of noses of unaffected patients, falling within normative Farkas values for columella length/nasal tip protrusion. Mean ratio of columella length/nasal tip projection of the affected nostril to the contralateral nostril was 0.66 ± 0.17 before treatment and 0.98 ± 0.06 after treatment ($P < 0.05$). The ratio of the alar side wall width of the affected nostril to the unaffected nostril was 2.08 ± 0.31 before treatment and 1.07 ± 0.06 after treatment ($P < 0.05$).

**CONCLUSIONS:** Our results demonstrate improvements in symmetry and soft tissue length following treatment. Lesser degrees of nasal stenosis can be corrected without surgical intervention by use of this device alone. The orthonostric approach can also be employed alone for other nasal abnormalities, such as for thinning of nasal alar side wall after forehead flap reconstruction, which is not possible with surgical correction due to scar tissue contraction.

**Pharyngoplasty Is Associated with Long-term Sleep-related Impairment in Patients with Cleft Palate**

**Presenter: Sri Harshini Malapati, BS**

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