

# AAO Foundation Final Report 2014- 2015

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Secondary Investigators
<b>Award Type</b> AAOF Faculty Development Award: <i>Robert E. Binder Teaching Fellowship Award</i>
<b>Project Title</b> Skeletal and Dentoalveolar Changes Following the Use of a Bonded Protraction Headgear Appliance in Patients Born with Complete Cleft Lip and Palate
<b>Project Year</b> July 2013 to June 2014
<b>Institution</b> Department of Plastic Surgery New York University Langone Medical Center New York, NY 10016
<b>Summary/Abstract</b> <i>Introduction:</i> Maxillary hypoplasia is a common finding in patients with Cleft Lip and Palate (CLP). The purpose of this study was to evaluate the skeletal and dentoalveolar changes in patients with CLP treated with an Occlusally Bonded Maxillary Protraction Headgear (PHG) Appliance. <i>Methods:</i> Records of 267 consecutive patients (1995-2012) treated with an occlusally bonded maxillary PHG

appliance, were reviewed. 40 patients with CLP (mean age 7.70 years), met the inclusion criteria. The mean treatment duration was 7.5 months with a mean force of 405 grams per side. X and Y axis displacement for 38 lateral cephalometric landmarks was recorded at pre-treatment (T<sub>0</sub>), following removal of PHG (T<sub>1</sub>), and at 1.5 years follow-up (T<sub>2</sub>).

*Results:*

From T<sub>0</sub> to T<sub>1</sub>, A-Point advanced by +2.48mm (p < 0.01), UIE advanced by +4.91mm (p < 0.01) and B-Point moved posteriorly by -2.03mm (p < 0.01) and inferiorly by -3.86mm (p < 0.01). During the same time interval, the ANB angle changed from 0.08° to 3.77° degrees (p < 0.01). At 1.5 year follow-up, A-Point moved posteriorly by -0.28mm (p > 0.05), B-Point moved anteriorly by 3.69 mm (p < 0.01) and the ANB angle decreased to 0.51° (p < 0.01).

*Conclusion:*

An occlusally bonded maxillary protraction headgear appliance with a mean 810gm of force resulted in 54.60% skeletal and 45.40% dentoalveolar advancement. At 1.5 years (T<sub>2</sub>), the maxillary position was stable with minimal anterior growth; however, the mandible showed significant anterior growth contributing to reduction of the ANB angle.

**Were the original, specific aims of the proposal realized?**

Yes

**Were the results published? If not, are there plans to publish? If not, why not?**

Results are not yet published.

This paper will be published in The Cleft Palate-Craniofacial Journal

**Have the results of this proposal been presented? If so, when and where? If not, are there plans to do so? If not, why not?**

Yes, Presented at:

Skeletal and Dentoalveolar Changes Following the Use of a Bonded Protraction Headgear Appliance in Patients Born with Complete Cleft Lip and Palate. Segal, D., Grayson, B.H., Shetye, P. R.

71st American Cleft Palate -Craniofacial Association meeting, April 2014, Indianapolis, Indiana

Craniofacial Course at NYU College of Dentistry

**To what extent have you used, or how do you intend to use, AAOF funding to further your career?**

I have used the AAOF funding for my research and publication in the area of Craniofacial Orthodontics. Publication are important criteria for my promotion as Associate Professor in Plastic Surgery (Craniofacial Orthodontics). I am thankful to AAOF for their generous support.