

AAO Foundation Award Final Report

Principal Investigator	Kyle Lee
Award Type	Orthodontic Faculty Development Fellowship Award
Project Title	Effects of mini-implant assisted rapid palatal expansion in early and late treatment group
Project Year	2014
Institution	UCLA School of Dentistry
Summary/Abstract (250 word maximum)	<p>Objective: The aim of this clinical pilot study is to see if a mini-implant assisted rapid palatal expander (MARPE) has similar dental and skeletal treatment effects in an early treatment group (ETG) and a late treatment group (LTG) through the use of CBCT analysis.</p> <p>Methods: 10 orthodontic patients requiring MARPE were grouped into ETG (5) and LTG (5) according to their Cervical Vertebral Maturation Stage. CBCTs were taken for initial records (T0), immediately after expansion (T1), and 6 months after expansion was complete (T2). Skeletal versus dental effects were measured and compared between T0, T1 and T2, and between groups.</p> <p>Results: The ratio of mid-palatal suture opening and expansion width in the appliance at T1 was 69% in the ETG and 34% in the LTG. Buccal bone width decreased during expansion and then increased during the retention phase in both groups. In the ETG there was 61% skeletal expansion, 10% bone bending and 29% dental tipping, compared to 34% skeletal expansion, 4% bone bending, and 62% dental tipping in the LTG.</p> <p>Conclusion: This pilot study has shown that MARPE can be an effective maxillary expansion appliance for older patients to overcome the limitations of the traditional tooth-anchored appliance, minimizing dental side effects and achieving skeletal expansion. However increasing our sample size and collecting data from the traditional tooth-anchored appliance group will determine if there is a true difference between groups.</p>
Were the original, specific aims of the proposal realized?	All of the specific aims were achieved.
Were the results published? If not, are there plans to publish? If not, why not?	We will need to increase our sample size and collect more data for the publication. To confirm the observed mean differences or correlations with 80% power, and $p < 0.05$ as level of significance, a sample size of 29 is needed for most measures.

<p>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?</p>	<p>It has not been presented yet.</p>
<p>To what extent have you used, or how do you intend to use, AAOF funding to further your career?</p>	<p>The AAOF funding was used to develop the necessary teaching and research skills.</p>