

AAO Foundation Award Final Report

Principal Investigator	Snehlata Oberoi DDS,MDS
Co-Investigator	
Secondary Investigators	
Award Type	Robert E. Binder Teaching Fellowship Award
Project Title	Assessment of the outcome of secondary alveolar bone grafting of alveolar defects in individuals with unilateral and bilateral cleft lip and palate
Project Year	2007
Institution	University of California San Francisco
Summary/Abstract (250 word maximum)	<p>Aim: To evaluate the eruption status of the permanent canine into the cleft site.</p> <p>Methods: The DICOM files of 17 UCLP and 4 BCLP individuals were imported into Dolphin 3D Imaging 10.5 and reoriented for consistency. After reorienting, the canine cusp tip and a point along the long axis of the developing root were digitized on both the cleft and non-cleft sides in the volumetric view. These points were verified in the sagittal, coronal and axial views. The X, Y, Z coordinates of each digitized point were pasted onto an excel spreadsheet and the amount and direction of movement of the canine in one year was calculated. The reliability of this method was first test between two operators and within the same operator.</p> <p>Results: The method was found to be very reliable. We used histograms to illustrate and quantify the 3D movement. Most canines on both the cleft and non cleft side moved incisally, facially, and mesially. 12% of the canines on the cleft side needed surgical exposure, while the rest 88% erupted spontaneously. 80% of the canines had less than half root development at the time of secondary alveolar bone grafting. The amount of root development did not affect the outcome in terms of percent bone fill.</p> <p>Conclusions: 3D imaging using Dolphin 10.5 provides precise information on the eruption path of the canine through the grafted alveolar cleft, thereby facilitating orthodontic treatment planning.</p>

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?	The manuscript has been submitted for publication.
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?	The results have been presented at: American Cleft Palate-Craniofacial Association 65 th Annual Meeting, Philadelphia, 2008 American Association of Orthodontists 108th Annual Session, Denver, 2008 (Rising star presentation)