

A Comparison of Facebow and Dento-Facial Analyzer Mountings

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INTRODUCTION

The use of the facebow to record and transfer the horizontal axis of an individual patient to an articulator increased during the era of transographics and gnathology (1–4). The works of Weinberg, Aull, and Granger supported the existence of one transverse horizontal axis that connects the rotational centers of both condyles (3,5,6). Gordon et al reported that the clinical correlation with incorrect location of the terminal hinge axis will result in an error in cusp height at the second molar ranged from 0.15 mm infra-occlusion to 0.4 mm supra-occlusion (7).

Locating the kinematic hinge axis for patients who require extensive restorative treatment saves time in intraoral adjustments; however, its



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ABSTRACT

Aim: This investigation compared the accuracy and reliability of one arbitrary facebow (4000 FB Pana-Mount) to the recently introduced “Dento-Facial Analyzer” (4300 FB Kois) for locating and transferring the hinge axis to articulator. A kinematically located transverse horizontal axis provided the reference.

Material and methods: Fourteen subjects, 9 female and 5 male, and 3 types of facebows were utilized in this study. One orientation record was made with each of 3 instruments to mount 1 pindex maxillary cast 3 times for each subject on the same articulator. In order to measure the distance from articulator’s hinge axis to first molar bilaterally; a small nail was inserted in the stone cast in the area of the first molar on both sides. A small indentation on the hinge axis of the articulator served as the second reference point. A 6-inch/150 mm digital caliper was used for measuring the distance between these points with an accuracy of 0.03 mm and resolution of 0.01 mm. Four repeat measurements were done on both sides of each mounted cast and averaged.

Results: The arbitrary earbow recorded the hinge axis closer to the kinematic axis (within 4.18 mm on right side and 3.57 mm on left side) with smaller standard deviation compared to the Dento-Facial Analyzer (5.58 mm on right side and 5.72 mm on left side).

Conclusion: The arbitrary facebow was found to be more accurate as compared to the Dento-Facial Analyzer for reliability and accuracy and may serve better when occlusal function is a primary concern.

Clinical implication: The simplicity of the use of Dento-Facial Analyzer did not improve the accuracy of mounting the maxillary cast onto the articulator. As a result it should be used in the clinic cautiously.

KEY WORDS:

Transverse hinge axis, facebow, earbow, dento-facial analyzer, mountings

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CASE REPORT

Using CAD/CAM Technology to Create a 10-unit Zirconia Fixed Partial Denture — A UTHSCSA Dental School Case Report

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INTRODUCTION

Digital technology and innovative materials like zirconia are altering the dental landscape in both the dental office and laboratory (1, 2). Traditionally zirconia required the addition of porcelain to increase the esthetic outcome with the same issues of porcelain debonding and/or fracturing that occurs with metal frameworks (4–7). With the introduction of translucent zirconia and coloring agents, the ability to create an esthetically acceptable full contour zirconia restoration has emerged; however, porcelain veneering is still recommended for the esthetically demanding patient (8–10). Zirconia's flexural strength of 1200 Mpa is significantly higher than lithium disilicate's 360 Mpa or traditional feldspathic porcelain's 111 Mpa, which is why some manufacturers recommend a minimum axial reduction of 0.2mm and an occlusal reduction of 0.5mm (11, 12). Initially there was some

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ABSTRACT

From diagnosis and treatment planning to the materials being used, technology is changing dentistry. New materials are providing dentists greater options for treatment, while technology is streamlining the workflow in the office and dental laboratory.

Traditionally the creation of a long-span fixed partial denture was a labor intense project — from waxing up the prosthesis to stacking of the porcelain. For larger frameworks, it was recommended for the dentist to bring in the patient in for a framework try-in. However, advances in both CAD/CAM technology and dental materials are revolutionizing the way dentistry is being done.

The following describes the fabrication of a 10-unit full contour zirconia fixed partial denture completed in the pre-doctorate program at UTHSCSA Dental School.

KEY WORDS:

CAD/CAM; technology; zirconia; fixed partial denture (fpd); pre-doctorate

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