

MYSTERY OF MIDLINE IN FACEBOW TRANSFER : A PILOT STUDY

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ABSTRACT

Location of the transverse hing axis is an important step in mounting the casts on an articulator. The axis of the articulator shaft should coincide with the mandibular transverse hinge axis of the patient. In our routine practice the midline of the wax rim coincides with the midpoint of the face bow fork. A pilot study was carried out to observe the effect of deviation of midline of occlusal rim on the face bow fork in the saggittal plane.

KEYWORDS: Transverse hing axis, face bow fork, saggittal plane.

INTRODUCTION

Complete denture prosthesis is the specialty which places the greatest number of important factors in the control of the operator. The operator is concerned with the determination of the incisal guidance, plane of orientation, condylar guidance. All these factors are interrelated.

Location of the transverse hing axis is an important step in mounting the casts on an articulator. The axis of the articulator shaft should coincide with the mandibular transverse hinge axis of the patient.

Mccollum was the first person to identify the existence of the transverse hinge axis.

The need for the accurate location of hinge axis is emphasized to reproduce the accurate occlusal relationship on the articulator.

Face bow is used to record the hinge axis in mid saggittal plane. It records the opening & closing path of movement. Face bow transfer is an integral part in analyzing & studying the occlusion.

Review of literature

Mccollum¹ stated the Frankfurt horizontal plane should be used as a reference plane. Champion² suggested that the axis of the articulator shaft should coincide with the condylar axis. Kurth and Feinstain³ stated that the axis of the hinge movement carried out on the articulators could not be recorded without error. Lauritzen and Bodner⁴ found that 33% of the arbitrary axis points were within 5 mm of the true hinge axis. Tetruck and Lundeen⁵ found the same results. Weinberg⁵ found that there was an error of 5mm in locating the axis.

In our routine practice the midline of the wax rim coincides with the midpoint of the face Bow fork.

Aim of the study:

A pilot study was carried out to observe the effect of deviation of midline of occlusal rim on the face bow fork in the saggittal plane.

Materials and Methods:

- Hanau spring bow.
- Hanau wide view articulator.

Procedure:

The upper occlusal wax rim was attached to the fork by wax wafer method. The midline of the wax rim was coincided with the midpoint of the face low fork. This is group "A" The centre of the arch was kept parallel to the arm of the face bow fork in the sagittal plane . The face bow record was made and transferred to the articulator. This is the control group.(Fig. 1)

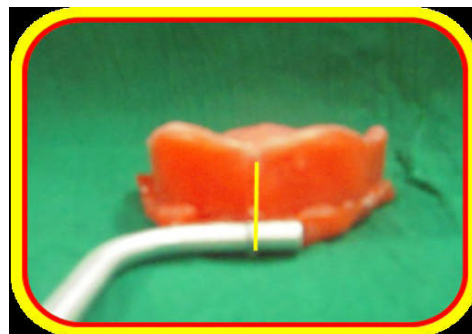


Fig.1.Control group

In second group, the midline was shifted to the left side by 2mm. The sagittal plane was parallel to the arm of the fork & face bow transfer was done. This is group "A1" (Fig.2)

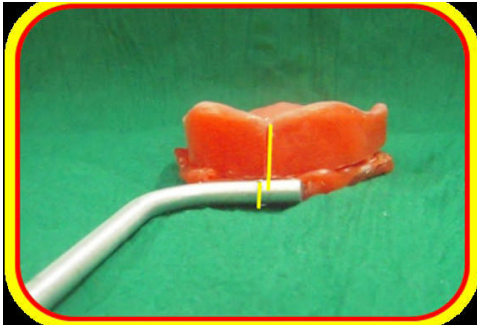


Fig.2. Group A1- midline was shifted to the left side by 2mm.

In the Third group the midline of the wax rim was shifted to left side by 4 mm on the fork. The sagittal plane was parallel to the fork. This is group A2.

For group A3 the midline was shifted to the right side by 2mm for group A4, the midline was shifted to the right side by 4mm.

For further groups the midline coincided with the midpoint of the fork but the wax rim was deviated on right side. This was group B1. (Fig. 3) . In group 'B2' the wax rim was deviated to the left side.

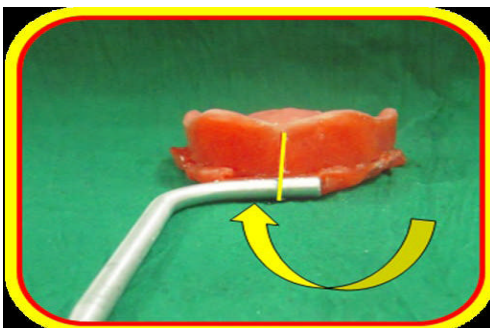


Fig.3. Group B1- midline was shifted to the right side by 2mm.

Results

In Group A1, A2, A3, A4, there was no change in the orientation of the cast. It was same as that of control group group B1, & B2. The orientation did not change.

Discussion

The face bow is an instrument used to record the relationship of the maxilla to the hinge axis in three dimensions in sagittal plane. This position is unchanged inspite of change in the position of midline of the wax rim on the face fork.

CONCLUSION:

Positioning of occlusal rim in relation to face bow does not have any effect on the face bow transfer . However extreme deviation of occlusal rim will make the orientation relation difficult. But the midline of the wax rim should coincide with the midpoint of the face bow fork for the convenience of the operator.

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