

Bite Registration Made Simpler-A Case Report

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Abstract

Class II malocclusion is a major reason that patients seek orthodontic treatment. In growing patients with retrognathic mandible, myofunctional appliances are the treatment of choice. Use of removable functional appliances requires bite registration which demands a lot of precision on the part of orthodontist. However, during bite registration, vertical bite opening is a little difficult to record in comparison with sagittal advancement. The following article demonstrates a method to precisely record the bite for functional appliances, simultaneously making it comfortable to the patient.

Keywords: Bite registration, Class II, Functional appliances.

Introduction

Bite registration is a crucial factor in design and construction of functional appliances and demands a lot of precision and care on the part of clinician. Taken correctly, it is the most important factor in the success of functional appliance therapy.¹

Patient is generally trained before registering bite to bring the mandible in correct sagittal relationship with maxilla. However vertical bite opening is a little difficult for the patient to remember.

In an ideal Class II skeletal case where overjet is around 7-8 mm, advancing the mandible in an edge to edge bite provides the required vertical opening as well as anterior vertical stop. Also, for such cases stops like exactobites² have been prepared which provide the necessary 2mm interincisal opening anteriorly. However in a case with pronounced overjet where stepwise advancement of mandible has to be done, such anterior vertical stop is not there.

If a stop is prepared for the lower incisors to rest on during mandibular closure from postural rest position (when the bite is being registered), it can become a lot easier to register a correct construction bite.

Clinical Technique

In this particular clinical technique, we have described a simpler methodology to prepare a vertical stop during construction bite registration

1. After training the patient for correct sagittal positioning of mandible, place a small piece of wax, 3-4 layered thick, which should lie on the anterior palatal area & cingulum area of upper teeth and ask the patient to bite on it for initial recording of vertical opening and horizontal advancement (*Fig 1*). The accuracy of horizontal advancement and vertical opening can be easily viewed in the posterior segment as there is no wax obstructing the vision posteriorly.

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Fig 1 – Small wax piece for bite registration

2. Take out the wax bite and cut it into two vertical halves exactly in the middle of the region of lower incisor indentations on the bite. Measure the vertical distance which extends from the superior surface of lower incisal edge to the superior surface of the bite which contacts the anterior palatal region. This distance determines the vertical bite opening of functional appliance anteriorly. Measure this distance accurately (*Fig2*).

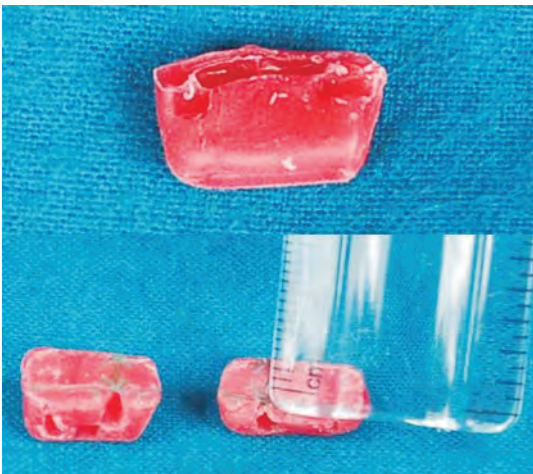


Fig 2 – Measuring vertical bite opening

3. In this technique a plastic syringe cap., which is very widely available, has been used to prepare a vertical stop. Cut out a small cylinder with the help of a diamond disc out of the syringe cap of the same

length as measured in the previous step (*Fig, 3*). Make two grooves in the middle of this vertical stop for horizontal guidance.

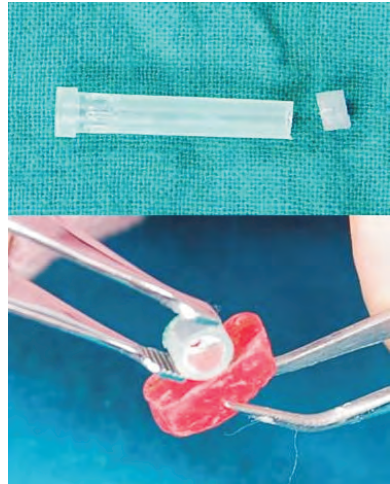


Fig 3- Measured cut out from plastic syringe cap to form vertical stop

4. Now fabricate a W shaped wax occlusal rim on the upper arch which extends to the anterior palatal region where lower incisal edges will contact. Soften the wax in the anterior region where the lower incisors will contact during bite registration and embed the obtained vertical stop in that region (*Fig 4*).

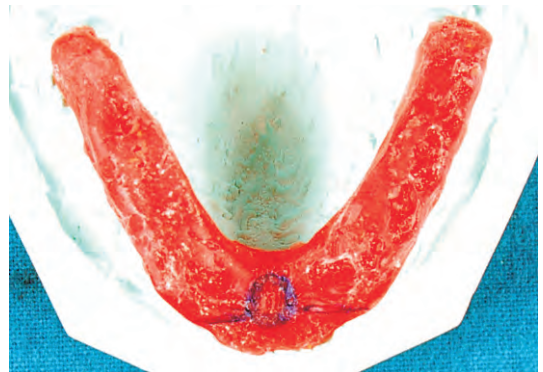


Fig 4- Vertical stop embedded in wax bite

The vertical stop should be completely cleared off the wax from the occlusal surface so that it is visible and the grooves

made on the stop should be extended to the wax rim on both sides with the help of an indelible marker. These markings will serve as horizontal guidance to position mandible anteriorly.

5. Soften the rim by heating it and place it in the patient's mouth.
6. Ask the patient to move the mandible anteriorly (as trained) to the mark made on the occlusal rim for horizontal guidance and to bite slowly on the occlusal rim till a resistance is felt (*Fig 5*). This resistance is provided by the vertical stop and it automatically provides the desired vertical opening.



Fig 5- wax bite with desired sagittal advancement and vertical opening

7. The bite now obtained will have the anterior vertical bite opening of the same length as the vertical stop prepared.

Conclusion

Thus, with the correct sagittal advancement of mandible and correct placement of the stop in the occlusal rim, an accurate construction bite can be attained easily.

References

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