

Modified Ligature Bite Plane

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Abstract

Bite planes are removable or fixed and can be placed in the anterior or the posterior segments of the mouth depending on the individual treatment needs. As time passes on in order to meet the patient comfort and compliance, a modified bite plane has evolved to have more compact and convenience and which can be easily attached to teeth. This is a simple and effective chair side technique with less time consumption.

Keywords: Bite plane, Comfort and Compliance

Introduction

The management of transverse discrepancies has been universally recognized as one of the most challenging aspects of orthodontic therapy. Unfavourable sequel of this malocclusion predisposes a patient to periodontal involvement, functional problems and temporomandibular joint disturbances.

Bite plane "bite plate" or "bite block" are terms descriptive of a variety of devices that have been used for orthodontic treatment or to facilitate such treatment. As a general rule they are fabricated to fit the patient's palate, but they may be designed to slip over the coronal portions of the teeth.

- 1771: John Hunter, an inclined plane to be worn on lower anterior teeth made of wrought silver.
- 1803: Joseph Fox, bite block on posterior teeth.
- 1883: Clay Quinby, maxillary bite plate, to take pressure of the back teeth.
- 1889: W.G. Bonwill, Maxillary bite plate
- 1879: Kingsley, jumping the bite

Other names

Bite plates, bite planes, bite blocks, bite raisers, bite ramps, occlusal build ups, disarticulators and bite turbos.

Bite plates are removable or fixed and can be placed in the anterior or the posterior segment of the mouth and also depends on the individual treatment needs.

Bonded bite planes, fixed bite turbos and other bite turbos made up of glass ionomer cement or composite resins are also used to open the bite.

Requirements of a bite plane

- The height of the anterior bite plane should not interfere with the freeway space.
- There should be a clearance of 2-3 mm in space in the posteriors.
- If the clearance is more than 3 mm then the patient might place their tongue in the gap, which prevents the eruption of posteriors.
- High anterior bite planes may cause undue pain and trauma to the masticatory muscles, TMJ and lower incisors.
- Along with height inclination of the plane is also important, bite plane should be vertical to the long axis of lower incisors so as to generate forces parallel to long axis and therefore causing intrusion of the incisors.

In the original design the bite plates they are constructed to fit the patient’s palate. As time went by, to meet patient comfort and compliance, they evolved to have more compact and convenient form which were easily attached to the teeth. This careful consideration regarding height of bite planes is applied to its modification.

Appliance Design

A patient reported with a complaint of closed bite, in order to open the bite with the modified bite plane, upper and lower impressions were taken, modified bite plane has been constructed in the palatal area behind the upper anterior up to the canine region. At the end of the plates holes has been made with handpiece. Ligature wire has been used to hold the bite block. Bite plane is fabricated and pressed tightly to the palatal area (behind incisors) with the ring finger, ligature wire is now used to hold the bite plane by tying it to the canine and incisors. Check whether the ligature hurts the surrounding tissues. This is a simple and effective chair side technique with less time consumption.

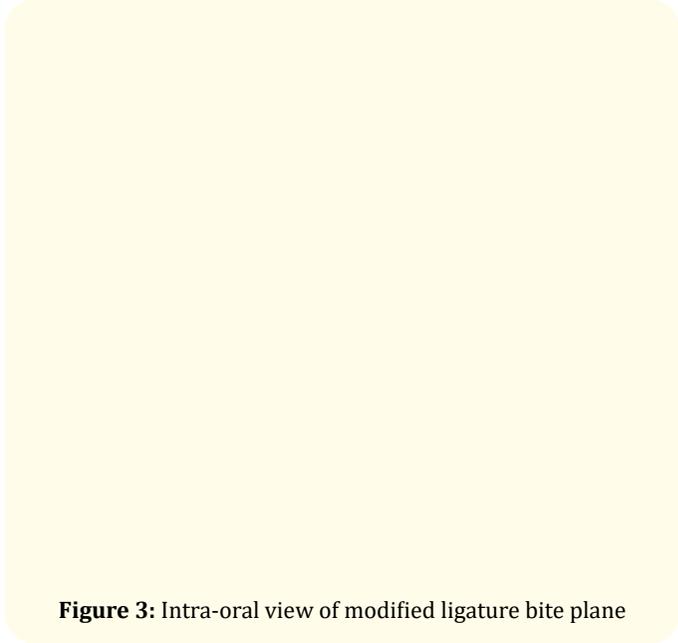


Figure 3: Intra-oral view of modified ligature bite plane

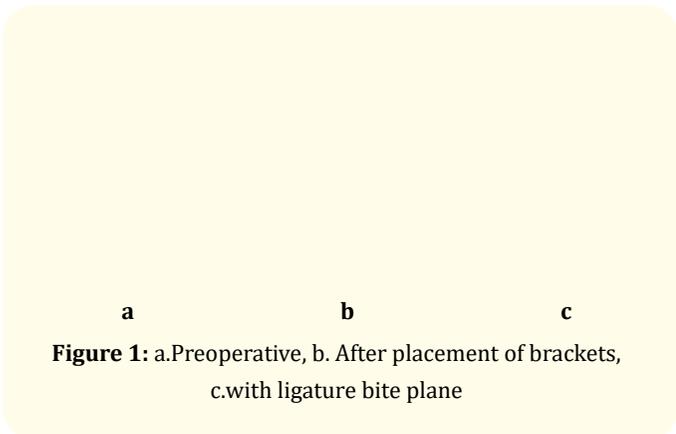


Figure 1: a. Preoperative, b. After placement of brackets, c. with ligature bite plane

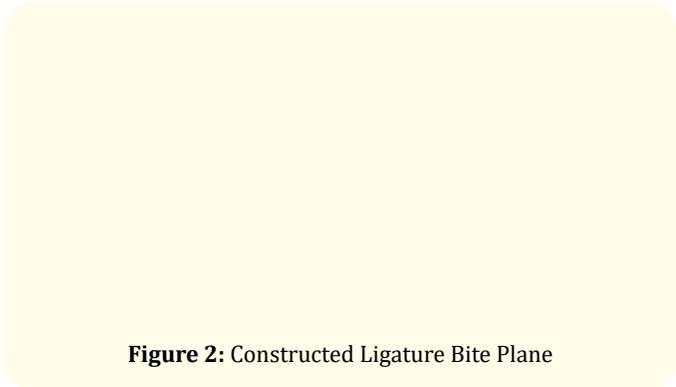


Figure 2: Constructed Ligature Bite Plane

Bibliography

1. Effects of maxillary bite plane therapy in orthodontics, Charles G. Sleichter D.D.S. [https://doi.org/10.1016/0002-9416\(54\)90080-9](https://doi.org/10.1016/0002-9416(54)90080-9), 1953.
2. The Use of Bite Raisers in Orthodontic Treatment -A Review of Literature, DOI:10.31080/ASDS.2021.05.1088, March 2021.