



“Lig-Tied” Semi-Fixed Posterior Bite Block

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Received: September 19, 2024

Published: October 17, 2024

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Abstract

In patients with deepbite and crossbite, sometimes bracket placement is difficult due to hindrance from the opposing arch. Thus, the bite needs to be opened temporarily. Various fixed, semi-fixed and removable devices including composite resin build-ups, bonded lingual bite planes, semi-fixed bite raiser have been developed. But these appliances have their own limitations. This article describes a new simple, temporary, semi-fixed, efficient and cost-effective appliance to overcome the common problems encountered with conventional posterior bite block (Copyright diary No. 28953/2021-CO/L).

Keywords: Bite Block; Semi-Fixed; Posterior Bite-Block; Temporary Bite-Block; Lig-tied

Introduction

Fixed orthodontic treatment requires bonded attachments on tooth for effecting tooth movement [1]. But in patients with deep bites or crossbites bracket placement becomes difficult due to hindrance from teeth of the opposing arch [2]. Also, in patients with crossbite, mandibular teeth prevent the movement of maxillary teeth. Hence, the bite needs to be temporarily raised, to prevent debonding of mandibular brackets and provide unobstructed tooth movement [2].

A bite plane is an artificial surface especially fabricated either anteriorly or posteriorly to provide a plane against which the teeth of the opposing arch can contact when brought together for occlusion such that full closure of the jaws is prevented [3].

Many devices such as occlusal composite resin build-ups, bonded lingual bite planes or anterior or posterior bite splints, have been used as the conventional method for relieving the bite. Some limitations always exist with these devices. Bonded lingual bite planes cannot be adjusted and are difficult to remove. Composite

resin build-ups require additional occlusal enamel etching and may wear off under masticatory forces. Hence, may require additional chairside time for its built-up to appropriate height [4].

Recent devices, including the semi-fixed bite raiser [5], temporary bite-raising appliance [1] or semi-fixed posterior bite blocks [6] have been developed. But these devices involve complex wire bending and their fabrication is time consuming. Thus, to overcome these problems we have constructed a simple, temporary, semi-fixed, posterior bite block that can either be tied or ligated through hooks and lingual button on the molar band.

Materials and Methods

Materials

- 21- gauge Stainless steel wire
- Mandibular molars bands
- Lingual buttons
- Self-cure acrylic resin
- Ligature ties
- Alginate
- Dental stone

Method

- The required length of 21-gauge stainless steel wire is taken, and two hooks are made on both ends of the wire, as seen in Figure -1.
- Mandibular molar bands are fitted with lingual buttons.
- These molar bands are adapted on permanent mandibular first molars.
- Band impression and study model is made.
- On the study model, the stainless-steel hook made in step -1 is stabilized on occlusal surface of first molar (Figure- 2) and acrylized to form bite blocks.
- The hook should be completely embedded within the acrylic with the thickness of block being approximately 3-4 mm.
- The molar bands are then cemented in the patient’s mouth.
- The bite block is then inserted in the oral cavity of the patient and tied on the cemented molar bands on both, the buccal and the lingual, sides using either ligature wire or elastomeric modules as shown in figure- 4 through figure- 6.



Figure 1: Stainless steel wire with hooks on both ends.



Figure 2: Stainless steel wire with hooks in place before acrylization



Figure 3: Posterior bite block as seen from occlusal view.

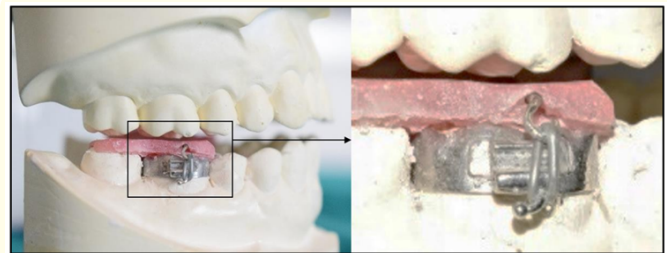


Figure 4: Posterior bite block tied using elastomeric module as seen from buccal side.



Figure 5: Posterior bite block tied using elastomeric module as seen from lingual side.

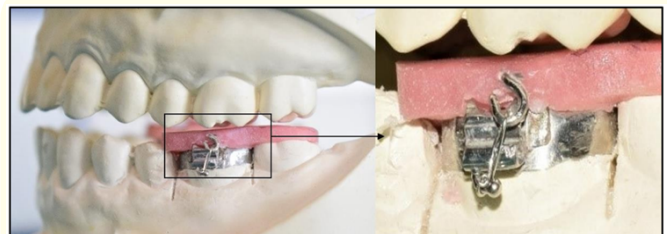


Figure 6: Posterior bite block ligated using stainless steel ligature wire as seen from buccal side.



Figure 7: Clinical photograph of posterior bite block tied using elastomeric module as seen from left buccal side.



Figure 8: Clinical photograph of posterior bite block ligated using stainless steel ligature wire as seen from right buccal side.

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Conflict of Interest

Declare if any financial interest or any conflict of interest exists.

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