

Customized Cheek Retractor for Second Molar Bonding

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Abstract: During the course of orthodontic treatment, the permanent second molar needs to be included and aligned at the end of treatment. Bonding of second molar has been a challenge for an orthodontist because of poor accessibility, moisture control and difficulty in cheek retraction. All these leads to bond failure. Thus cheek retractor is customized for simultaneous retraction using copper malleable retractor and maintaining dry field using suction tip.

Key Word: Cheek retractor, second molar bonding

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I. Introduction

Treatment planning involving second molar has been a challenge for a dental specialist. As per American board of Orthodontics¹, the permanent second molar needs to be included and aligned at the end of treatment. Failure to do so can result in unfavorable result in all three planes of space. Second molar is also included for various other reasons like to augment the anchorage², bite opening in deep bite cases, maximize incisor retraction, etc. Bonding of second molar has been a challenge for an orthodontist because of poor accessibility, moisture control and difficulty in retracting cheek. These problem demands a chair side assistant which may not be always available and also leads to bond failure. To solve these difficulties, the cheek retractor has been customized by using copper malleable retractor and suction tip for simultaneous retraction and maintaining dry field.

Earlier also cheek retractor has been modified for cheek retractor has been earlier modified for:

1. For high volume suction³
2. Cheek retractor + tongue guard⁴

The above modification did decrease:

1. Chairside time
2. Need for assistant

The Cheek retractor has been now customized for second molar bonding.

II. Material And Methods

Design: Cheek retractor is customized by affixing two helices made up of stainless steel on each side of the cheek retractor for the passage of copper malleable retractor and suction tip.

Fabrication:

1: 4 segments of 19 gauge stainless steel is bent to form two helix of 10-12mm and other two of 12-14mm with retentive tags (Fig A).

2: Use chemical cured bis-GMA resin to affix wire segments i.e. one of each helix dimension on each side of the retractor (Fig B).

3: Bend copper malleable and pass it through helix of 12-14 mm and pass suction tip through helix of 10-12mm (Fig C).



Fig A



Fig B



Fig C

III. Clinical Application

It helps to perform moisture sensitive procedure with ease and reduces the need for chair-side assistant as it does simultaneous retraction of soft tissue and maintains dry field (Figure D and E). Thus, reducing bond failure. This cheek retractor can also be used for second molar restoration and minor surgical procedures. The copper malleable used in can be easily molded according to patient peri oral musculature, auto clave and economical.



Fig D



Fig E

IV. Conclusion

Any treatment plan which involves inclusion of second molar becomes difficult because of poor accessibility and moisture control. Thus, cheek retractor is modified for the purpose of making second molar bonding comfortable and successful.

Use of copper malleable retractor has following advantages:

1. Can be easily molded acc. to patients perioral musculature.
2. Can be sterilized
3. Cost effective
4. Easily available

All the materials used in the fabrication of the appliance is easily available and cost effective.

This customized cheek retractor can also be used for second molar restoration and extraction.

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