CASE REPORT

Modified Transpalatal Arch to Correct Second Molar Buccal Crossbite - A Clinical Technique

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ABSTRACT

Correction of posterior crossbite due to buccal eruption of the tooth is really challenging situation. Here, we are presenting a very simple approach to correct it without having vertical force vector by modifying a transpalatal arch.

Keywords: Buccal cross bite, Lingual button, Single tooth crossbite, Transpalatal arch.

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INTRODUCTION

One of the most challenging situations in orthodontics is a correction of posterior crossbite, especially caused by a buccally erupted second permanent molar.[1]

The conventional approach, to treat the single tooth posterior crossbite includes intra- or inter-arch latex cross elastics.[2,3] Since all these mechanics involve a vertical force vector, they can produce an unwanted extrusion of the second molars. Therefore, cross elastics should be avoided in cases where the second molar has already over erupted, have hanging palatal cusp, or in patients with high mandibular plane angles.

Here, we have used a simple and effective method by modifying the TPA creating an intrusive force along with lingual traction to treat these buccal crossbites without having extrusion of the tooth which is an unwanted side effect of inter arch cross elastics.

CASE REPORT

We report a case having a buccal crossbite with a left second molar [Figure 1].

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Transpalatal arch and lingual arch are used in both the upper and lower arch as an anchorage unit. After the alignment phase, 0.019″ × 0.025″ stainless steel (SS) wires were engaged in both upper and lower arches.

End of TPA is extended posteriorly toward the second molar and bent palatally to have a hook-like extension at the end. Elastic is attached to the upper left 2nd molar tube on the buccal side to the hook of TPA extension palatally [Figure 2a]. In lower arch straight length 0.021″ × 0.025″ SS auxiliary wire is bent in S shape as shown in Figure 2b; placed in auxiliary tube of a lower left 1st molar. Its mesial end is secured with the bend back, and the distal end is bent for elastic attachment. Elastic is engaged from this wire to the lingual

Figure 1: Left second molar in buccal crossbite

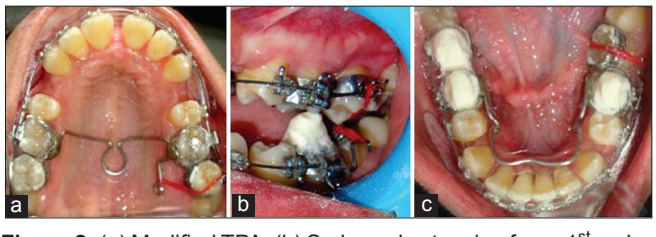

Figure 2: (a) Modified TPA, (b) S-shaped extension from, 1st molar, (c) elastic from the lingual button to extension

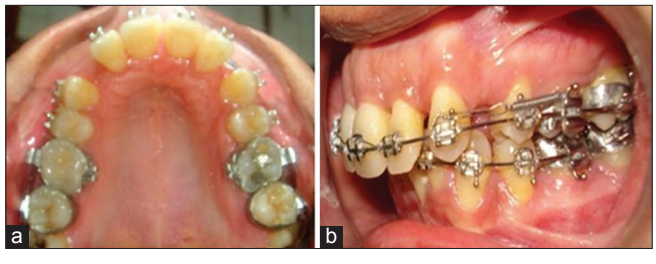

Figure 3: (a and b) Corrected single tooth cross bite

button on the lingual side of a lower left second molar [Figure 2c].

An anterior bite plane or posterior bite block on 1st molars may be needed to remove occlusal interference. The single-tooth crossbite can usually be corrected within 6 weeks [Figure 3a and b].

This Approach Offers Several Advantages

- Simple design.
- Correction of crossbite without extrusion of molars: Thus, this technique can be used in vertical grower patients also.
- Direction of force along the long axis of the second molar's palatal root.
- Simultaneous intrusion of the molar's palatal cusp and retraction into alignment.
- Reduced chairside time.

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