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Short Communication

Custom-made acrylic beads for Forsus reactivation

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ABSTRACT

The usage of the fixed functional appliances has increased over the years, mainly on the account of minimal demand for patient cooperation with these appliances. Though Forsus appliance provides sufficient activation for skeletal and mandibular correction with crimpable hooks, additional activation may be required in few cases. This clinical tip presents with a efficient and cost effective way for Forsus activation using customized acrylic beads.

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1. Introduction

Devices commonly used for the correction of Class II malocclusions can be classified as extraoral, intra-arch, or interarch. The intra-arch devices are either removable or fixed. Usage of fixed functional appliances has increased considerably over the past few years, largely due to their minimal demand for patient cooperation.¹ The Forsus Fatigue Resistant DeviceTM (FRD) is one of the most widely used fixed functional appliance. Growing class II patients with a positive VTO can be effectively managed with the appliance. It can be used concurrently with fixed multibracketed appliances making it a single-phase treatment. It restricts the sagittal maxillary growth together with a significant correction in overjet, overbite, and molar relationship.² To keep the force level around 200 gms, the device can easily be reactivated by adding crimpable stops distal to the built-in stop on the push rod.¹ In cases where the overjet is too large to be corrected by crimpable stops alone, additional activation may be required. Hence, a simple technique to re-activate the ForsusTM appliance has

been described in this article.

2. Method of Fabrication

A thin coat of petroleum jelly is applied over the push rod to prevent sticking of freshly mixed cold cure acrylic. Cold cure acrylic is mixed in dough consistency and the bead is fabricated by piercing the push rod into the acrylic dough. (Figure 1) The acrylic bead is fabricated by placing the mixed acrylic in a circumferential manner around the ForsusTM pushrod (which is used as reference guide). Depending on amount of activation required, cylindrical beads of length 2-5 mm and the inner diameter 0.5 mm greater than the push rod can be fabricated by appropriately trimming the acrylic with 8 mm TC acrylic trimming bur (Figure 2) Later, the length of the bead is measured using a vernier caliper and excess is trimmed off and the acrylic surface is smoothed and polished. On the push rod of each side, a single bead can be placed. The significant change in the overjet can be appreciated before and after placement of custom-made acrylic beads. (Figures 3, 4, 5, 6, 7 and 8) If further activation is required, additional beads can be placed later.

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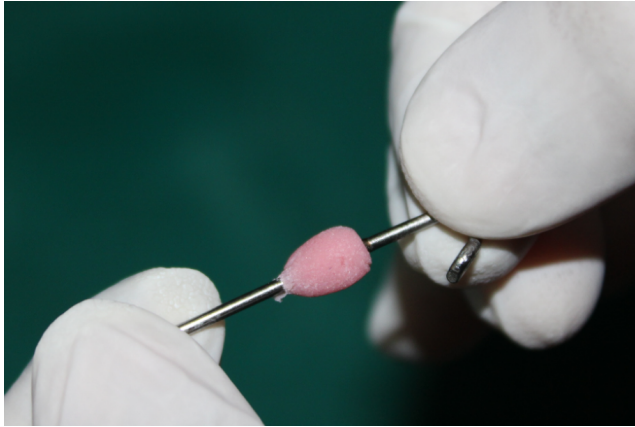


Fig. 1: Preparation of cylindrical acrylic beads



Fig. 4: ForsusTM before placement of custom-made acrylic beads frontal view

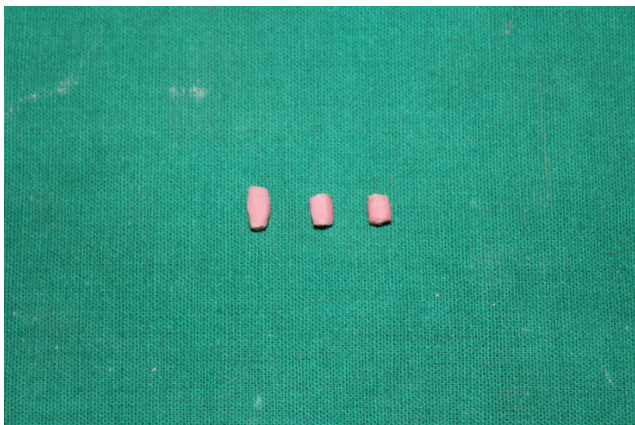


Fig. 2: Acrylic Beads of varying lengths



Fig. 5: ForsusTM before placement of custom-made acrylic beads left lateral view



Fig. 3: ForsusTM before placement of custom-made acrylic beads right lateral view



Fig. 6: ForsusTM after placement of custom-made acrylic beads right lateral view



Fig. 7: Forsus™ after placement of custom-made acrylic beads frontal view



Fig. 8: Forsus™ after placement of custom-made acrylic beads left lateral view

3. Discussion

Management of class II malocclusion in adolescents by growth modulation is one of the most difficult and commonly encountered scenario in clinical orthodontics. Non-compliance has been a major concern for orthodontists. The traditional techniques for correcting class II malocclusion involving the use of functional appliances, class II elastics and other modes which rely on patient compliance are taxing to the patient as well as the Orthodontist. Fixed functional appliances are useful tools for bringing about the orthopaedic changes in growing patients.³

In patients who are not compliant, fixed functional appliances are used efficiently. Forsus appliance is an innovative telescopic hybrid fixed functional appliance with a Nickel Titanium open coil spring in its exterior part, the compression of which postures the mandible forward. This appliance can lead to mandibular growth and favorable

dentoalveolar changes in growing patients.

Forsus has an interarch push spring that produces about 200 gms of force when fully compressed. The force levels of compressed NiTi springs are comparable to heavy Class II elastics. The distal end of the FRD's push rod inserts into the telescoping cylinder and its hook on the mesial end is crimped directly to the archwire distal to canine bracket or outrigger loops. The telescoping cylinder consists of inner and outer sliding tubes surrounded by an open-coil spring. An eyelet at the distal end of the cylinder is connected to the maxillary molar headgear tube with an L-pin. The push rod has a built-in stop that compresses the spring when the patient's mouth closes. The spring force is then transferred to the maxillary molars, using the mandibular arch as the anchorage unit.

The appliance can be reactivated by adding the metal crimps (provided by the manufacturer) on the pushrod.¹ In cases with large overjets, more reactivation may be required. At times, the crimps provided with the Forsus kit may not suffice and reactivation of Forsus may require an alternative mode of further activation.

Thus, we have devised a simple and efficient method for chairside reactivation of Forsus™ spring using acrylic beads.

3.1. Advantages

1. The threat of crimpable stop loosening, dislodging and ingesting can be avoided.
2. It is cost-effective.
3. Easier to fabricate and place.
4. Reduced chairside time.
5. It is comfortable to the patient with good results.

4. Conclusion

This clinical tip is not only efficient but cost-effective mode of reactivation of Forsus appliance.

5. Source of Funding

None.


6. Conflict of Interest

None.

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