

## Clinical Pearl

# Innovative use of Kesling spring separators: A clinical pearl

### ABSTRACT

Separation is an essential requirement to ease the placement of bands which requires an extra appointment; the article highlights a clinical pearl in the form of innovative use of Kesling separators as molar tubes to overcome the disadvantages of dislodgment and potential complications.

**Keywords:** Banding, bonding, Kesling separator

### INTRODUCTION

Separator placement is an important step in fixed mechanotherapy as banding of maxillary and mandibular first molars is commonly carried out. The placement of bands in the posterior region is preferred over bonding as posterior teeth experience greater masticatory force than the anteriors.<sup>[1]</sup>

Kesling separator was originally invented as a tension spring appliance with an objective to provide a continuous gradual force when applied between adjacent molars and create space for banding.<sup>[2]</sup> It has several advantages,<sup>[3]</sup> over other separating techniques such as minimal discomfort to the patient, ease of placement and removal, and minimal food lodgment, but few also have disadvantages such as premature dislodgment of separator leading to injury of gingiva, risk of aspiration or swallowing, and unproductive visits.<sup>[4]</sup> Separation is an essential requirement to ease the placement of bands which requires an extra appointment; the article highlights a clinical pearl in the form of innovative use of Kesling separators to overcome the disadvantages of dislodgment and save an extra appointment for the patient.

### TECHNIQUE

In first step fabrication of Kesling separator is done with 0.020 premium plus round Australian wire. It comprises of

activating coil, locking arm, occlusal leg and gingival leg [Figure 1a]. For placement, the separator is held using the Weingart plier in such a way that activating coil is on buccal side and placed on the mesial and distal side of the molars. In the same appointment, the arches were bonded and 0.016" NiTi with heat-treated ends was ligated as initial wire which was passed through the activation coils (used here as a molar tube) of Kesling separator and terminal heat-treated ends of the wire were cinched as shown in Figure 1b in different views for stepwise understanding. As the distal end of the archwire is cinched, the inadvertent dislodgment and aspiration of the Kesling separator are prevented. Even if dislodgment happens, the separator will be attached to the archwire due to the closing of the distal end. The advantages of Kesling separator over other types of separators are utilized while negating the disadvantage of chances dislodgment and are easily tolerated by the patient.

### DISCUSSION

In literature search a modification to overcome the

**VIVEK KUMAR THAKUR, S. KANNAN, MOHIT SHARMA, PRASANNA KUMAR, ISHAN PRADHAN**

Department of Dental Surgery and Oral Health Sciences, AFMC, Pune, Maharashtra, India

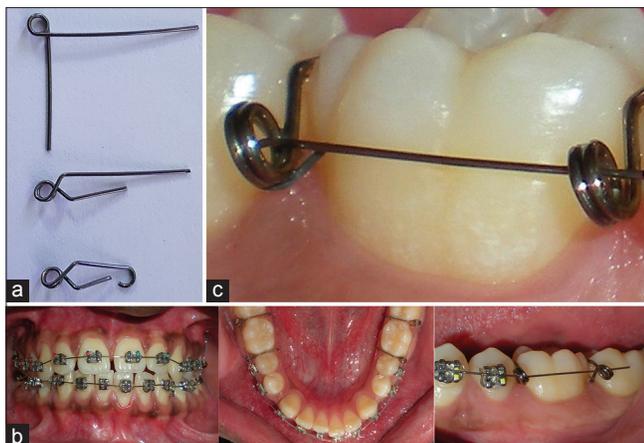
**Address for correspondence:** Dr. Vivek Kumar Thakur, Department of Dental Surgery and Oral Health Sciences, AFMC, Pune, Maharashtra, India.  
E-mail: [thakurvivek13@gmail.com](mailto:thakurvivek13@gmail.com)

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** [reprints@medknow.com](mailto:reprints@medknow.com)

**How to cite this article:** Thakur VK, Kannan S, Sharma M, Kumar P, Pradhan I. Innovative use of Kesling spring separators: A clinical pearl. *Int J Orthod Rehabil* 2018;9:90-1.

Access this article online	
<b>Website:</b> <a href="http://www.orthodrehab.org">www.orthodrehab.org</a>	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/ijor.ijor_1_18	



**Figure 1:** (a) fabrication of Kesling separator (b) Bonding of maxillary & mandibular arches with Kesling separators as molar tubes (c) cinch back arch wire tie with distal Kesling separator

disadvantage of dislodgment of conventional separators was given by Kansal *et al* in form of Kansal separator.<sup>[5]</sup> However, there is still a chance of dislodgment once adequate separation is achieved. Sahu *et al.* published another modification of Kesling separator by directly bonding on lingual fixed retainer.<sup>[6]</sup> The present innovation is a novel method saving one precious clinical appointment and clinical time, along with overcoming disadvantages of dislodgment of the Kesling separators. Dislodgment may lead to minimal harm of gingival injury or potentially disastrous complication if aspirated.<sup>[7,8]</sup> In addition, this fail-safe mechanism prevents dislodgment from the archwire in case premature dislodgment happened following separation.

This clinical pearl is also a way of making Kesling separator safe for our patients as the NiTi wire is not only passed through the loops but also ends are heat treated and cinched with the second loop as shown clearly in Figure 1c, as a novel technique, we are yet to publish further reports on its failure, though in clinical cases, no failures seen till date.

#### Financial support and sponsorship

Nil.

#### Conflicts of interest

There are no conflicts of interest.

#### REFERENCES

1. Flores-Mir C. Bonded molar tubes associated with higher failure rate than molar bands. *Evid Based Dent* 2011;12:84.
2. Kesling HD. United States Patent Office No. 2,897,598; 1959.
3. Gurinder PS, Anup K, Naik CR, Pupneja P, Sudan S. Separation effect and perception of pain and discomfort from three types of orthodontic separators. *J Indian Orthod Soc* 2013;47:6-9.
4. Kumar A, Kansal S, Thareja V, Singh G, Kumar P. The biomechanics of Kansal Separator: A '2 in 1' self-secured orthodontic spring separator. *J Orthod Sci* 2014;3:12-6.
5. Kansal S, Singh G, Kumar P, Kire K. A self secured orthodontic spring separator. *J Clin Orthod* 2012;46:747-8.
6. Sahu SK, Jayam BK, Barik AK. Retainer positioner. *J Indian Orthod Soc* 2012;46:53-4.
7. Umesan UK, Chua KL, Balakrishnan P. Prevention and management of accidental foreign body ingestion and aspiration in orthodontic practice. *Ther Clin Risk Manag* 2012;8:245-52.
8. Bilder L, Hazan-Molina H, Aizenbud D. Medical emergencies in a dental office: Inhalation and ingestion of orthodontic objects. *J Am Dent Assoc* 2011;142:45-52.