

W Spring for Management of Impacted Teeth

Abstract

Forced eruption of an impacted tooth necessitates a firm and versatile attachment for force application. The present article describes a simple modification of NiTi closed coil spring called W spring for predictable forced eruption of impacted teeth.

Keywords: *Impacted, teeth, W spring*

Introduction

Management of impacted teeth is challenging for any orthodontist. Over the years, various techniques in the form of elastics and springs have been proposed.^[1-7] Force application with elastics is short acting, hence requires frequent replacement. With elastics, hygiene is also an issue. Although springs can produce predictable, continuous forces its presence is more often than not uncomfortable to patients. Another problem with springs is its unidirectional force vector, which needs frequent modifications. To overcome these problems, Schubert^[8] had proposed Easy Way Coil system that used closed stainless steel spring attached to bondable buttons using steel ligature. This system is quite effective, but the use of stainless steel spring necessitates frequent removal and shortening of spring. Moreover, force is not continuous. To overcome this problem, we have developed a simple modification using a NiTi closed coil spring and mesh base, called W spring (named after initial of the second author).

Appliance Fabrication

1. Separate the mesh base of bondable Begg's molar tube with plier [Figure 1a and b]. Or alternatively readymade mesh base can also be used
2. Cut the base in desired shape
3. Select NiTi coil spring of required length depending on force required
4. In 20-gauge stainless steel wire prepare a loop and pass eyelet of NiTi closed coil spring in the loop [Figure 1c]

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

5. Weld both the end of loop to base [Figure 1d]. With this design force vector can be modified since the spring is freely movable in stainless steel loop
6. If only a single direction is required, then eyelet of closed coil spring can be directly welded to mesh base [Figure 1e].

Advantages

1. Continuous and predictable force can be applied
2. Hygienic and comfortable to patients
3. Can be used in variety of clinical situations, for example, impacted canines, incisors, and with some



Figure 1: (a) Begg bondable tube. (b) Mesh base. (c) NiTi closed coil spring with steel loop. (d) Spring with welded loop. (e) Spring with eyelet welding

How to cite this article: Minase RA, Bhad WA, Doshi UH. W spring for management of impacted teeth. APOS Trends Orthod 2017;7:248-9.

**Rohit A. Minase,
Wasundhara A.
Bhad,
Umal Hiralal Doshi¹**

*Department of Orthodontics,
Government Dental College and
Hospital, Nagpur, ¹Department
of Orthodontics and Dentofacial
Orthopedics, CSMSS Dental
College, Aurangabad,
Maharashtra, India*

Address for correspondence:
Dr. Umal Hiralal Doshi,
UPHAR, 68, Builders Society,
Aurangabad, Maharashtra,
India.
E-mail: umal_16@rediffmail.
com

Access this article online

Website:
www.apospublications.com

DOI: 10.4103/2321-1407.214569

Quick Response Code:



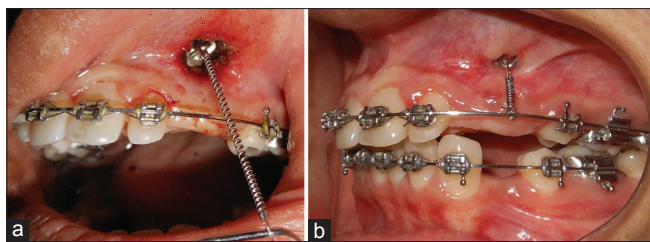


Figure 2: (a) Modified spring for vertical eruption of canine. (b) Progress

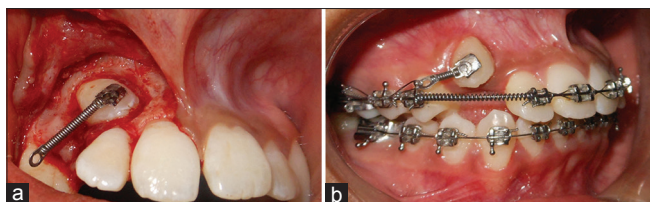


Figure 3: (a) Modified spring with eyelet soldered to mesh for distal uprighting of impacted canine. (b) After canine uprighting

modifications for forced eruption of posterior teeth [Figures 2a, b and 3a, b]

4. Force vector can be modified
5. Use of mesh instead of bondable button allows application of assembly to any tooth surface with close adaptation
6. No need of frequent reactivations. If required coil can be cut and shortened and secured to main wire with steel ligature

7. Implant-supported forced eruption is also possible since eyelets can be easily secured to implants.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Pearson MH, Robinson SN, Reed R, Birnie DJ, Zaki GA. Management of palatally impacted canines: The findings of a collaborative study. *Eur J Orthod* 1997;19:511-5.
2. Jacoby H. The 'ballista spring' system for impacted teeth. *Am J Orthod* 1979;75:143-51.
3. Kornhauser S, Abed Y, Harari D, Becker A. The resolution of palatally impacted canines using palatal-occlusal force from a buccal auxiliary. *Am J Orthod Dentofacial Orthop* 1996;110:528-34.
4. Kalra V. The K-9 spring for alignment of impacted canines. *J Clin Orthod* 2000;34:606-10.
5. Fischer TJ, Ziegler F, Lundberg C. Cantilever mechanics for treatment of impacted canines. *J Clin Orthod* 2000;34:647-50.
6. Sinha PK, Nanda RS. Management of impacted maxillary canines using mandibular anchorage. *Am J Orthod Dentofacial Orthop* 1999;115:254-7.
7. Park HS, Kwon OW, Sung JH. Micro-implant anchorage for forced eruption of impacted canines. *J Clin Orthod* 2004;38:297-302.
8. Schubert M. A new technique for forced eruption of impacted teeth. *J Clin Orthod* 2008;42:175-9.