



Short Communication

The W spring 3 dimensional force control for eruption of impacted maxillary canine

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ABSTRACT

Impacted canine traction is a significant challenge for orthodontics. It is a relatively common clinical problem, and managing it almost always calls for a multidisciplinary approach. In addition to the lengthy recovery period and high patient expenditures associated with therapy, surgical exposure of the impacted canine and the intricate orthodontic mechanics used to realign the teeth back into the arch frequently result in problems involving supporting tissues. This present paper proposes a new method for eruption of impacted canine that is W spring.

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1. Introduction

Management of impacted teeth is challenging for any orthodontist. Canines are the second most frequent cases of teeth displacement and impaction among all teeth, following third molar impactions.¹ Elastics and springs have been suggested as numerous techniques over the years.² Elastics apply force in a short-lived manner, necessitating frequent replacement. The issue of hygiene also exists with elastics. Although springs are capable of producing steady, predictable stresses, but the main disadvantage of springs are the unidirectional force vector of springs, which requires frequent adjustments. To solve these issues, one such device i.e. W Spring was recently introduced as a method of applying lateral, vertical and distal eruptive forces for the forced eruption of impacted maxillary canine. The W Spring is a new option that produces 3-Dimensional forces without the need for special patient compliance. The W Spring can be used to direct the lateral, vertical and distal eruption of an impacted maxillary canine.

1.1. Armamentarium

1. 0.019" x .025" TMA straight wire
2. Marker
3. Pliers
4. Glass slab

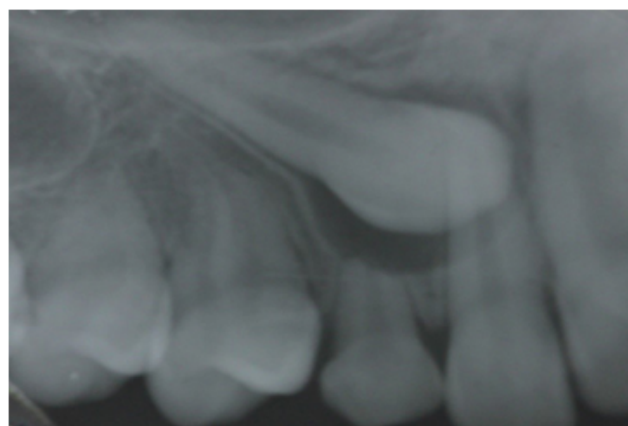


Figure 1:

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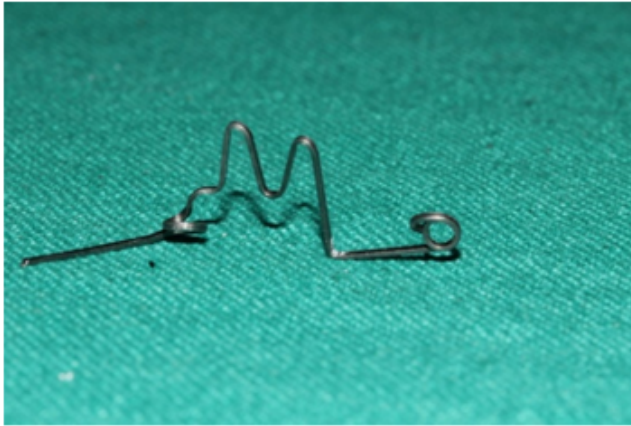


Figure 2:



Figure 3:



Figure 4:

1.2. Fabrication

Fabricated from 0.019" x.025" TMA wire, it is shaped into three segments as follows:

1. Anterior segment of 4mm that will fit into the bracket slot. And bent downwards exerting downward force on the canine when it is tied to the attachment on the canine.
2. Middle segment containing inverted W, the length of which is in accordance with the depth of vestibule increasing the range of the spring and loops forming W spring was compressed for the distal movement as well.
3. Posterior segment engaged into the auxillary molar tube.

The W Spring is a constant force module that is slid onto a rectangular archwire over the site of an impacted tooth. To activate the spring, a stainless steel ligature is guided through the helix of the anterior segment, and the loop is directed toward the impacted tooth. The ligature is then tied to an attachment that has been direct-bonded to the surgically exposed tooth (Figure 2).

The W Spring may need to be periodically retied to maintain a constant force as the tooth erupts. The spring is removed once the tooth is sufficiently erupted.

1.3. Advantage

1. Very cost effective
2. Control of 3 dimensional force
3. Is easy to fabricate

2. Source of Funding

None.

3. Conflict of Interest

None.

References

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