



Clinical Pearl

Interarch traction for impacted canines

Adith Venugopal

Department of Orthodontics, Faculty of Dental Sciences, University of Puthisastra, Phnom Penh, Cambodia.



***Corresponding author:**

Adith Venugopal,
Department of Orthodontics,
Faculty of Dental Sciences,
University of Puthisastra,
Phnom Penh, Cambodia.

avgorthodontics@gmail.com

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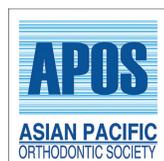
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ABSTRACT

The impaction of the maxillary canines leads to many esthetic and functional problems. Calculated approach to the proper planning and execution of orthodontic traction of the canines is essential. A good biomechanical control to avoid possible side effects is often considered one of the most important strategies in traction of impacted canines. The aim of this paper is to present a technique in which a superior canine impacted labially was pulled into the arch with the aid of a modified power arm on the exposed canine and a miniscrew on the lower arch.

Keywords: Impacted canine, Miniscrew, Power arm

INTRODUCTION

Orthodontic eruption of impacted canines requires proper biomechanics to avoid altering the occlusal plane and stressing the adjacent teeth.^[1] Relying solely on the brackets and archwire as anchorage, for example, could create a lateral open bite and bone loss distal to the lateral incisor. This pearl reviews the use of skeletal anchorage in the opposing arch, referred to as interarch traction, as a method to safely erupt stubborn canines.

TECHNIQUE

The impacted canine was extruded with elastics to a miniscrew in the opposing arch. Since the canine was too high for the patient to connect the elastics, an attachment with a long crimpable hook extending from the canine bracket was fabricated.

First, a 0.016" × 0.022" stainless steel wire was bent into a small square, approximately 5 mm × 5 mm. The ends of the wire were held together with composite but alternatively could have been soldered. A long crimpable hook to receive the elastics was connected at the bottom of square. The canine bracket was connected at the top [Figure 1a]. The attachment was connected to the bracket before the surgery and the unit was placed by the oral surgeon.

A miniscrew (1.6 mm diameter × 8.0 mm length) was placed adjacent the mandibular first premolar on the affected side. The orthodontist may choose a location either mesial or distal to the tooth depending on the position of the impacted canine and the skeletal relationship. The angulation of the miniscrew should be kept at 60–90° to the occlusal plane, as a steeper angulation might cause the elastic to slip off the miniscrew head.

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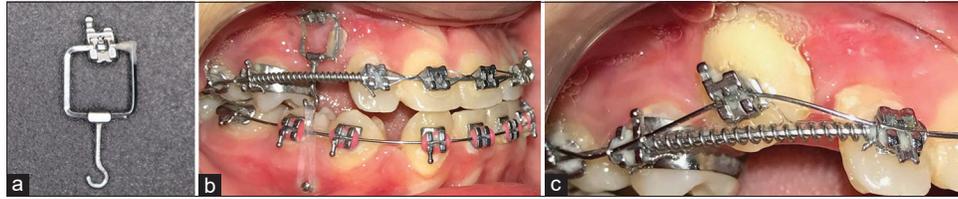


Figure 1: (a) Fabricated attachment with power arm was locked on a canine bracket, (b) fabricated attachments were fixed on the exposed upper canine and interarch traction using intermaxillary elastics onto the lower miniscrew was applied, (c) an overlay wire applied onto the canine bracket once sufficient extrusion was achieved.

A small diameter, medium force elastic (1/8", 4.5 ounce) connected the attachment to the miniscrew. The elastic generated a force of about 150 g when connected to the miniscrew. The patient was instructed to thread the elastic behind the open coil spring to avoid placing unwanted pressure on the archwire [Figure 1b]. Step out bends could have been placed in the canine space to make this step easier for the patient. Elastics were worn continuously throughout the day and replaced every 8–12 h. Interarch traction was discontinued once the canine had approximated the archwire [Figure 1c]. The patient had maintained good oral hygiene as it was reinforced that during the traction it would be easy for food or other debris to get stuck within the attachment resulting in malodor, inflammation, or infections.

Ankylosis is the etiologic factor for approximately one-third of all impacted canines that fail to respond to orthodontic traction.^[2] If ankylosis is suspected following the development of an open bite, consider transitioning to interarch traction with skeletal anchorage and elastics. It is noteworthy to mention that surgical luxation of the canine is still required. A variation of this pearl would be to utilize a holding arch with buccal hooks in place of a miniscrew.

Declaration of patient consent

Patient's consent not required as patient's identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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