Short Communication

An Indigenous Intra Oral Molar Distaliser

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Appliances that are not dependent on patient compliance are increasingly gaining popularity in treating maxillary dento-alveolar protrusion by distalization of molars.¹ Most distalization appliances incorporate loops or coil springs to effect distalization. NiTi coil springs are considered favourable as they deliver a light and constant force and have a continuous range of action.²,³ Proprietary distalization appliances are expensive, not readily available and cannot be afforded by patients belonging to the lower section of the economic strata. This article presents an indigenous and cost effective intra oral Niti coil spring distalizer using locally available armamentarium. This clinical innovation was neither designed to replace the currently available class II molar correctors nor to claim superior treatment results in comparison to them, but they do offer cheaper and more readily available alternatives for those who prefer class II correction with molar distalisation.⁴

Fabrication

Fig 1: Components used

Active unit

Main arm: A 2” length of 0.9mm hard stainless steel wire (Dentaurum) was cut and a
bayonet bend was given at approx. 10mm from one end of the wire.

Stabilizing arm: A 2” length of 0.6mm hard stainless steel wire (Dentaurum) was then bent into an L-shape and approximated with the first wire and soldered together. The superior portion of the L shaped wire was cut and bent into a hook facing mesially.¹

NiTi coil spring: An approximate length of NiTi open coil spring (3M) was cut and slid over the main arm.

Sliding eyelet tube: An 18 gauge surgical needle was procured and the end was rounded off using a bur, and then a lingual cleat welded and then soldered on either side to the length of the needle and a 6mm section of the needle incorporating the cleat was sectioned and slid on the main wire.⁵ Then the main wire was bent occlusally and ended in a hook.

Fig. 2: a, b, c: Main arm and stabilizing arm

Main arm and stabilizing arm

Fig. 3 a, b: Fabrication of sliding eyelet tube

Anchorage unit: A Nance palatal button was fabricated and soldered on to the bands of the first
premolar using 0.9mm wires (Dentaurum) and inserted to reinforce anchorage\textsuperscript{1,3,5}.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure4.png}
\caption{Anchorage control using Nance palatal button}
\end{figure}

**Insertion and Activation**

The custom made distalizing appliance was inserted with the main arm sliding into the headgear tube and stabilizing arm into the arch wire tube of the right maxillary first molar band\textsuperscript{3,5}. An elastic chain was engaged from the molar hook to the hook on the distalizer to increase appliance stability. The appliance was activated by tying back the sliding hook on to an eyelet welded on the band of the anterior tooth i.e. maxillary right first premolar using 0.010” stainless steel wire (Dentaurum). The coil was thus compressed about 3-5 mm and delivered approx. 70-75 gm of distalizing force\textsuperscript{1,3,5,6}. The process was monitored at 4 weeks interval and within 4 months a super class I molar relation was established. The appliance was removed and the molar was stabilized using a new Nance button soldered onto the bands of the first molars\textsuperscript{7}. The treatment was completed using 0.022” MBT mechanics and the patient is currently in the fixed retention phase with excellent post treatment stability.

\begin{figure}[h]
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\includegraphics[width=0.5\textwidth]{figure5.png}
\caption{Fabricated intra oral distalizer}
\end{figure}

\begin{figure}[h]
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\includegraphics[width=0.5\textwidth]{figure6.png}
\caption{Pre treatment extra oral photographs}
\end{figure}
Fig. 7a: Pre treatment study model – frontal view

Fig. 7b: Pre treatment study model – right buccal view

Fig. 8: Pre treatment lateral cephalogram

Fig. 9: Right buccal view of fabricated Jig in place

Fig. 10: Post treatment intra oral photographs

Fig. 11: Post treatment lateral cephalogram

Fig. 12: Superimposition of pre and post treatment cephalograms

**Conclusion**

Non compliance defeats the purpose and is the biggest challenge faced by the orthodontist today. An appliance that eliminates the need for patient compliance, which is indeed a boon during fixed
mechanotherapy, has been designed here which offers the following advantages:
1. Ease and speed of fabrication
2. Does not require any special bands or crowns etc...
3. No impressions for wax registrations, hence no laboratory assistance required
4. Easily inserted, adjusted and removed
5. Can be fabricated and installed in 30 minutes.

REFERENCES
Molar Distaliser

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