ORIGINAL RESEARCH PAPER

A REVIEW ON MOLAR DISTALIZATION IN ORTHODONTICS

Dr. Milna Narayan*
Mds Post Graduate Student, Department Of Orthodontics, Kannur Dental College, Kerala, India. *Corresponding Author

Dr. Hashim Ali
Head Of The Department, Department Of Orthodontics, Kannur Dental College, Kerala, India

Dr. Muhammad Shafeeque.k.c
Mds Post Graduate Student, Department Of Orthodontics, Kannur Dental College

ABSTRACT

The distalization of molars is of significant value for treatment of cases with minimal arch discrepancy & mild class II molar relationship associated with a normal mandibular arch & acceptable profile. A variety of treatment modalities include those that are heavily dependent on patient compliance to noncompliance such as extraoral traction, removable appliances, fixed intra & intermaxillary. Advances in mechanotherapy and changes in treatment concepts have been made possible by better understanding of tooth movement, bone physiology, biomechanics and newer biomaterials. Refinement of appliances has concentrated mainly on achieving bodily movement of the molar rather than tipping. An increase in implant usage for distalization is appreciated and have ushered a better orthodontic treatment. The need of the hour is an appliance which embodies the advantages of the intraoral, extraoral methods and eliminates the disadvantages of both. Further researches are necessary before coming to a final stand on the issue.

INTRODUCTION

Over the past decade, non extraction treatment & non compliance therapies have become more popular in the correction of mild to moderate class II malocclusions. Conventional treatment of class II cases requires distal movement of maxillary molars to achieve a class I molar & canine relation. One of the non-compliance therapies and fairly recent concept is the molar distalization which has been effectively used in the correction of malocclusion. Advances in mechanotherapy and changes in treatment concepts have reduced or minimized the need for extraction in severe discrepancies. Various techniques are currently employed in non-extraction therapy in the treatment of a malocclusion. An appliance system independent of the patient cooperation was needed and then evolved the molar distalizers (other than headgears). The magnitudes of moments, forces, moment to force ratio and their constancy should be taken care of while designing the appliance (Burstone).

HISTORICAL PERSPECTIVE

Distal movement of maxillary first molars is a common goal in the treatment of class II molar relationship and in the resolution of tooth size/arch length discrepancy in the maxillary arch. After early cephalometric studies have showed that little or no distal movement of upper molars was produced by class II elastic treatment of that era, the head gear was reintroduced as a means of moving the upper molars back. Patient compliance plays a major role in success of head gear therapy. The extraoral traction (headgear) has been used to redirect the maxilla & distalize the movement of upper molars to achieve a class I molar & canine relation. One of the non-compliance therapies has been the molar distalizers which has been effectively used in the correction of malocclusion. Advances in mechanotherapy and changes in treatment concepts have reduced or minimized the need for extraction in severe discrepancies. Various techniques are currently employed in non-extraction therapy in the treatment of a malocclusion. An appliance system independent of the patient cooperation was needed and then evolved the molar distalizers (other than headgears). The magnitudes of moments, forces, moment to force ratio and their constancy should be taken care of while designing the appliance (Burstone).

CLASSIFICATION

The appliances for molar distalization into two categories are:

1. Extraoral or intraoral appliances
2. Removable appliances or fixed appliances.

EXTRAORAL APPLIANCES

- Removable appliances are:
  - Extra oral traction
  - Sagittal appliance
  - Tube plates
  - ACCO
  - Removable maxillary distalization splint.

INTRAORAL APPLIANCES

- Fixed appliances

A) FLEXIBLE PALATALLY POSITIONED DISTALIZATION SYSTEM

- Pendulum appliance & its modifications
- Distal jet & its Modifications
- Intraoral bodily molar distalizer
- Simplified molar Distalizer
- Keles slider
- Fast back appliance
- Nance appliance with NiTi coil springs

B) FLEXIBLE BUCCALLY POSITIONED DISTALIZATION SYSTEM

- Jones jig & its modifications
- NiTi coil springs
- Magnets
- NiTi wires
- Biometric distalizing arches
- Carriere distalizer

C) FLEXIBLE PALATALLY & BUCCALLY POSITIONED

- Green field molar distalizer
Intra & intermaxillary appliances. Compliance such as extraoral traction, removable appliances, fixed those that are heavily dependant on patient compliance to non-variety of treatment modalities have been suggested, including associated with a normal mandibular arch & acceptable profile. A minimal arch discrepancy & mild class II molar relationship maxillary molars is of significant value for treatment of cases with become more prominent than ever before. The distalization of In the early 90’s, non-compliance therapies in various forms have been more overcome by the non-compliance intraoral appliances. But in intraoral methods the major disadvantage is the undesirable movement of the anchorage unit, the rate of breakage and relatively high cost of the appliance. The need of the hour is an appliance which embodies the advantages of the intraoral, extraoral methods and eliminates the disadvantages of both. In this space-age were advancements are being made each and every day, one should expect that this lacuna will be filled in near future. The newer materials like Niti, Magnets, and composite plastics will no doubt revolutionize the procedure of molar distalization. Who knows one day the so called next generation force system by mini motors may be delivering effective distalizing forces on the molars intraorally. But as on today there is no all-in-one molar distalizing appliance.

REFERENCES
7. Seung-Min Lima; Ryoon-Ki Hong in 2008 in their article describes the use of the lever-arm and mini-implant system