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Novel Technique

G–technique: An effective and precise method for rapid Derotation of teeth

B Goutham[1,*], Sunil Muddaiah[2], Sanju Somaiah[2], Muhammad Shafad[3], Justin Jolly[3]

[1] *Professor and HOD, Coorg institute of dental sciences, Virajpet, Karnataka*
[2] *Professor, Coorg Institute of Dental Sciences, Virajpet, Karnataka*
[3] *Private practitioner*

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* *Corresponding author.*
B Goutham
drgouthamreddy2000@gmail.com

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ABSTRACT

Rotations are mesiolingual or distobuccal intra-alveolar displacement of tooth around their long axis. Canine or premolars must often be derotated during fixed appliance therapy. Derotation of posterior teeth provides space which can be utilized for relieving crowding in the anterior region. By correction of these rotations one to three mm of arch length can be gained per side. Biomechanical principles involve application of single or couple of forces for correction of rotation. Rotated teeth can be corrected by removable, semifixed or fixed appliance depending upon the severity of rotation. Whatever the technique used, derotation especially of posterior teeth should be achieved quickly so that the gained space can be used for relieving crowding.

Keywords: Derotation; G – Technique; leveling; aligning

1 INTRODUCTION

It is better to derotate teeth at the initial leveling and aligning phase itself to reduce the overall treatment time with fixed appliance and also to gain space for relieving of crowding. Through this article we are presenting three case reports in which a newer and faster technique (G Technique) was used for derotation of teeth at the initial leveling and aligning phase. The G- Technique can be applied even on a 0.014 or 0.016 Niti arch wire, which are the most commonly used wires for decrowding. The G-Technique has the advantage of achieving simultaneous correction of rotation and crowding. As the teeth derotate, space is gained thereby increasing arch length which in turn makes relieving of crowding easier and faster as Niti wires are in place. In this technique bracket was bonded on the mesial most part on the labial surface of tooth to be derotated. An E-Chain will be placed over the arch wire in the slot from the distal wing of bracket to the molar hook for derotation of teeth. Mesial bracket wings are left free for free movement of teeth. (Figure 1) [1–4]

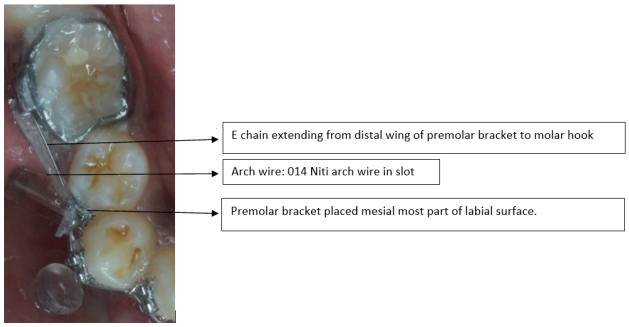

Fig. 1: G – Technique for Derotation

Case report 1

A 16 year old male patient reported to the department of orthodontics, Coorg Institute of Dental Sciences with chief complaint of irregularly placed teeth.

Diagnosis & treatment planning

Patient was diagnosed with mutilated malocclusion, crowded upper and lower anteriors, missing 16 and rotated

35,45. It was decided to start the treatment with 022 " MBT bracket. 0.014 Niti archwire was placed in upper and lower arch. Derotation of 35 and 45 was initiated at the first appointment itself by using G- Technique. Patient was recalled after three weeks for follow up. 2mm of derotation was achieved within the first three weeks. (Figure 4)

Fig. 2: Pretreatment mandibular occlusal view

Fig. 3: Mandibular occlusal view after initial strap up

Fig. 4: Three weeks after strap up

Case report 2

A 21 year old female patient reported to the department of orthodontics, Coorg Institute of Dental Sciences with chief complaint of irregularly placed teeth in upper and lower front region.

Diagnosis & treatment planning

Case was diagnosed as Angle's class I malocclusion with deep bite and severely rotated 35. It was decided to start the case with 022 slot MBT brackets. Derotation of 35 was initiated at the first appointment itself with the G-Technique on a 014 Niti arch wire. Patient was recalled after 3 weeks and the e-chain was changed for further derotation. Derotation of around 5 mm was achieved within 6 weeks, which helped in minor relieving of crowding in the lower anterior region. Figures 5 and 6

Fig. 5: Mandibular occlusal view after initial strap up

Fig. 6: Mandibular occlusal view after 6 weeks

Case report 3

A 14 year old male patient reported to the department of orthodontics, Coorg institute of dental sciences with a chief complaint of irregularly placed teeth.

Diagnosis & treatment planning

Case was diagnosed as Angle's class II malocclusion with crowded upper and lower anteriors and rotated 35. It was decided to start the treatment with extraction of 14 and 24

and non extraction in mandibular arch. Strap up was done using 022 slot MBT brackets. 0.014 Niti arch wires placed in upper and lower arches. Derotation of 35 was started at the initial appointment by using the G-Technique.

E-chain was changed after 3 weeks, and when patient reported for 2nd apppointment (6 weeks after initial strap up),almost 6mm of derotation was achieved.Figures 7 and 8

Fig. 7: Mandibular arch occlusal view after initial strap up

Fig. 8: Mandibular occlusal view after 6 weeks after initial strap up

2 DISCUSSION

The results showed that teeth can be rapidly derotated in 3 – 6 weeks. The method described here increases the arch length which can be simultaneously used for relieving crowding thereby decreasing overall treatment time. The G-Technique eliminates the difficulty of wire insertion in cases of severely rotated teeth, which may lead to bond failure. In addition to derotation this technique helps in relieving crowding. It is very seldom that a tooth movement can be carried out without adverse reactions. Some amount of mandibular molar mesial-in rotation was noticed in some of the cases but that can be prevented with the use of a TPA or Lingual arch.

3 CONCLUSION

Derotation can be achieved with fixed or removable appliances. The derotation of premolars and canines with a NiTi wire is very time-consuming and we may not be able to start Derotation from the day of strap up. Here we are presenting a new technique (G-Technique) to derotate teeth by using e-chain with light forces and minimal adverse reactions. This technique can be used for derotation of not only Premolars but also Canines and Incisors. The only drawback of this technique was the mesiolingual rotation of molars developed in some cases. This can be overcome by giving Trans palatal arch in maxilla and lingual arch in lower arch.

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