

INNOVATIVE TEMPORARY BITE RAISING APPLIANCES USED IN ORTHODONTICS**Vinit Swami MDS^{1*}, Dr. Vasanthi Swami MDS², Dr. Anand Sabane MDS³, Amol Patil MDS, PhD⁴**¹Professor, Department of Orthodontics, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune, Maharashtra, India.²Assistant Professor, Department of Prosthodontics, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune, Maharashtra, India.³Associate Professor, Department of Orthodontics, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune, Maharashtra, India.⁴Professor, Department of Orthodontics, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune, Maharashtra, India.**Corresponding Author: Dr. Vinit Swami MDS**

Professor, Department of Orthodontics, Bharati Vidyapeeth Deemed University Dental College & hospital, Pune, Maharashtra, India.

Article Received on 25/06/2016

Article Revised on 16/07/2016

Article Accepted on 07/08/2016

A 21 years old male patient reported for correction of palatally blocked out canine. The treatment plan consisted of fixed appliance treatment with 022 MBT pre-adjusted edgewise appliance.

Correction of palatally blocked out canines (as seen in Figure 1) in adults can pose a problem in aspects of patient tolerance to various appliances like bite plates and /or bite blocks, given to provide occlusal clearance for the tooth to be moved buccally.

Several appliances both fixed and removable have been utilized for this purpose, including anterior or posterior bite splints, bonded lingual bite planes and bonded occlusal composite resin build-ups.^[1,2,3] These appliances have some limitations. Bite splints require impressions, laboratory procedures, and extra appointments for insertion and monitoring. Removable plates require patient compliance^[4]. Bonded lingual bite planes can't be adjusted and are difficult to remove. Composite resin bite-blocks require additional clinical time and may cause occlusal enamel wear of opposite teeth if filled composite resins are used.^[5] Also in cases of bruxism, composite may wear down making it ineffective, requiring extra clinical time to restore it to the appropriate height.¹ As proposed by Fine, bonding lingual brackets to the maxillary central incisors causes opening of bite but its use should be limited to Class I or Class II division 2 cases with minimal overjet.^[6] Further, these lingual brackets can be fragile similar to the mandibular labial brackets they are supposed to protect. Güray (1999) introduced a new type of bite-opening appliance, the temporary bite raiser.^[7] Its main disadvantage is that it does not allow headgear or auxiliary wires to be placed simultaneously.^[1]

In this case, the patient compliance for bite plate and bite block was minimal as the patient was a stage artist and didn't want any palatal coverage which would hamper speech. Thus, bilateral temporary acrylic bridges were used to provide anterior bite clearance, so that the palatally blocked out canine could be moved buccally into proper alignment. (Figure 2).

PROCEDURE

Upper and lower alginate impressions were made. The casts were then sent to the laboratory for fabrication of bilateral lower temporary acrylic bridges extending from the 1st premolar to the second molars on either side without altering the natural contours of the teeth. Bite was taken for uniform occlusal contact.

Space was created for blocked out canine after initial alignment and levelling before cementation of the bridges. The bridges were cemented using zinc oxide eugenol cement and could be easily removed after the desired tooth movement. (Figure 2 and 3). The bridges provided enough occlusal clearance for the upper left canine to be moved buccally into alignment (Figure 4).

Figure legends

Figure 1: Occlusal view of palatally blocked canine

Figure 2: Acrylic bridge cemented bilaterally

Figure 3: Acrylic bridge aids in temporary occlusal clearance for correction of canine crossbite.

Figure 4. Canines in its ideal alignment after removal of temporary acrylic bridge.



Figure 1



Figure 2



Figure 3



Figure 4

CONCLUSION

This procedure to provide occlusal clearance in order to correct a palatally blocked out tooth had some distinct advantages (i) It provided uniform occlusal posterior contact between opposing teeth which allowed for better patient comfort during mastication, (ii) Aesthetic concerns of the patient were addressed, (iii) No palatal coverage by acrylic plates, hence there was no interference in speech and (iv) better compliance by the patient and (iv) Less chances of breakage as uniform posterior contact was achieved.

REFERENCE

1. R. F. Ceen.: Bite Opening with the Güray Bite Raiser. *J. Clin. Orthod*, 2002; 36: 639-640.
2. Vanarsdall, R.L. and Musich, D.R.: Adult orthodontics: Diagnosis and treatment, in *Orthodontics: Current Principles and Techniques*, ed. T.M. Graber and R.L. Vanarsdall Jr., C.V. Mosby Co., St. Louis, 2000; 870.
3. Brobakken, B.O. and Zachrisson, B.U.: Abrasive wear of bonding adhesives: Studies during treatment and after bracket removal, *Am. J. Orthod*, 1981; 79: 134.
4. Jackson, S. and Sandler, P.J.: Fixed biteplates for treatment of deep bite, *J. Clin. Orthod*, 1996- 30: 283-287.
5. Thompson, R.E. and Way, D.C.: Enamel loss due to prophylaxis and multiple bonding/debonding of orthodontic attachments, *Am. J. Orthod*, 1982; 79: 282.
6. Fine, H.A.: A fixed labial/lingual technique for rapid bite opening, *J. Clin. Orthod*, 1991; 25: 606-607.
7. Güray, E.: Temporary Bite Raiser, *J. Clin. Orthod*, 1999; 33: 206-208.