

Hybrid Functional Appliance - Evaa with Lip Bumper

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Abstract

EVAA is an experimental fixed appliance activator which was invented by Vander Schueren in 1994. It is a solid block of acrylic with protruding wire that's inserted into the tubes of upper molar bands, Original EVAA appliance is used for mandibular advancement and distalization of molars. Usually appliance is worn 16 hours per day. Modified EVAA with lip bumper when made in centric relation along with fixed appliance allows opening of bite and intrusion and retraction of anterior teeth with reducing the lower lip trap,

Appliance Design

Bite registration and steps in construction of appliance-

Modelling wax is heated in hot water bath



Now, the soft wax sheet is folded and mould into U shape



Patient is made to bite in centric relation by placing the wax on occlusal surfaces of lower teeth and vertical height of bite is maintained based on amount of vertical

clearance needed for intrusion and retraction of incisors



Bite is shifted onto the working model and mounted



Posterior section of bite is removed



20mil SS U loop hooks are fixed between upper premolars



Lip bumper extension is fixed between premolars, which is fabricated with 21mil SS



Posterior segment with wire components are acrylicized

The segmental EVAA has an effect on the opening of the mandible and allows the free tooth movement of the upper and lower anterior teeth such as intrusion and retraction by the help of fixed appliance.(Fig 1)Lip bumper reduces the lower lip trap and corrects the profile. (Fig 1,2)



EVAE with lip bumper



Pre treatment



EVAE with Lip bumper



Treatment In Progress

Fig 1 - Reduction of overjet and Lower lip trap



Fig 2: Soft tissue profile correction and elimination of Lower lip trap

Indications

1. Patient with large over jet
2. Patient with lower lip trap
3. Mild to moderate skeletal class II cases
4. Patients with acute nasiolabial angle and deep mentolabial sulcus
5. Borderline cases for extraction
6. Cases where it is requires to maintain class 1 molar relation and correct over jet and lip trap.

Advantages

- 1) Segmental EVAE helps in the opening of bite
- 2) Allows freedom for tooth movement such as intrusion and retraction of incisors with fixed appliance
- 3) Lip bumper reduces lower lip trap
- 4) Improves profile

Disadvantages

Cannot be used in cases like

1. Severe skeletal class II cases
2. Severe skeletal class III cases
3. Can't be used as distalization appliance

Conclusion

EVAA with lip bumper is a patient friendly appliance, as it is easy to use. Appliance can be used for bite opening and allows free movement of teeth i.e., intrusion and retraction and also to correct lower lip trap and improve profile.

References

1. Van der Schueren GL, De Smit AA. Combined fixed-functional Class II treatment. *J Clin Orthod.* 1994;28(1):15-20.