

“Face driven Orthodontics”- Correction of blocked out incisors with non-extraction approach: a case report

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Abstract

Orthodontic tooth movement of total blocked-out incisor is usually difficult as it is related with the problems of severe crowding, midline deviation, gingival recession and involvement of root resorption. A case report was presented to illustrate the treatment principles. It demonstrated with careful planning in non-extraction sequence and orthodontic mechanics to deliver light, controlled force, condition of totally blocked out incisor could be corrected with good results.

Keywords: Face driven orthodontics, Blocked-out incisor, Non-extraction.

Introduction

In traditional times, the primary goal of orthodontist was to align the teeth and level them to attain a proper overjet and overbite. This can be easily achieved by orthodontic treatment but it fails to consider abnormalities of face and leaves a negative impact on patient's facial appearance. In orthodontics, sometimes proclined teeth are retracted, which hampers facial balance and aesthetic harmony. Therefore, Face-driven orthodontic treatment plan is unique since it addresses not only teeth anomalies but also face as a whole. Both tooth movement and face movement are projected to achieve the best possible result for the patient.^{1,2}

A non extraction treatment is considered for the patient who would be best served by face-driven approach. This is done to protect the face and lip and to maintain equilibrium with the teeth and supporting structures. Non-extraction method is employed with a simple mechanics which eliminates the need for extractions and use of distalizing components and expanders. It requires the careful attention on timing of treatment and sequence of simple but specific mechanics to correct the defect.

The following case shows non-extraction approach with a specific mechanics to correct upper and lower anterior teeth crowding.

Case Presentation

A 26 year old male presented with severe crowding, a class II malocclusion and maxillary permanent central incisor blocked out. First step was to do assessment of patient's facial features. The patient was mesocephalic with a slight flat midface and straight profile. This combination of flat midface, limited lip projection, and straight profile helped to identify that his facial profile were not conducive to extractions. Removal of teeth would have had a negative effect on his facial aesthetics on a long-term aspect and would have created a concave profile as he aged.



Fig. 1: Extra-oral condition



Fig. 2:



Fig. 3: Intra-oral condition

Treatment Plan

In addition to non-extraction plan, attention was focused to open the space for blocked-out upper central incisors while controlling the forward movement of anterior teeth. It would be a wrong decision to open the space by flaring the anterior teeth forwards. Therefore, fixed appliance therapy supported by coil springs used to create space and develop the arches for maximum transverse expansion.

As patient's had severe crowding in upper and lower arch, it was decided not to engage the co-axial wires in blocked-out incisor during bonding (Fig. 4).



Fig. 4:

Open coil spring was compressed to blocked-out the central incisor and correct bracket torque was made to ensure the uprighting of incisors (Fig. 5,6,7).



Fig. 5:



Fig. 6:



Fig. 7:

Lower arch was not bonded till the crowding resolved in the upper arch and transverse adaptation was made.

Treatment Progress

10 weeks after bonding, coil springs were reactivated half of a bracket width for the blocked-out central incisors.

After 9 months of Treatment

By progression of arch wires and activation of coil spring at each visit, transverse occlusion was made and arches were developed. This was done to keep the upper incisors upright and lips and oral musculature helped to prevent the incisors from flaring. By use of arch wires and coil-spring mechanics, changes were done on facial muscles and direction of force was changed and arch width was increased. Lower arch was bonded and levelling and aligning was done same as well.

After 14 months of Treatment

An OPG was taken for root position and evaluation of bracket position. Arch was developed with effective variable-torque brackets and light-coil spring mechanics prevent the incisors from flaring forwards.

In such cases, pace of treatment slows to create the space for alignment of incisors and elimination of crowding. In this case, lower arch was not bonded until upper arch decrowded and expanded transversely. As a result, case was finished in a beautiful manner with display of upright incisor display where sufficient space was made using simple, non-extraction mechanics. (Fig. 8, 9).



Fig. 8:



Fig. 9:

Conclusion

The problems of crowding and blocked-out teeth are common these days that majority of clinicians treat with either extractions or use of palatal expanders to open space. With simple and specific mechanics, patient's facial features can be addressed and space created in a more natural manner. This case report has demonstrated with non-extraction approach and orthodontic mechanics to deliver light, controlled force, condition of blocked out incisor can be corrected with good results.

References

1. Proffit WR: The Biological Basis of Orthodontic Therapy. In Contemporary Orthodontics. 4th edition. Edited by Proffit WR, Fields HW, Sarver DM. St. Louis: Elsevier; 2007:331-358.
2. Sarver DM, Ackerman JL: Orthodontics about face: the re-emergence of the esthetic paradigm. Am J Orthod Dentofacial Orthop. 2000 May;117(5):575-6.