

CLEAR ALIGNERS IN ORTHODONTICS

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ABSTRACT:

Influence of appearance in personal and professional lives have led to a considerable interest among the adult population seeking orthodontic treatment in the last few years. Invisalign or clear aligners are the new age aesthetic orthodontic treatment methods developed especially for adults who are very self conscious of how they appear. This article aims to discuss the indications, contraindications, advantages and disadvantages of this device .

KEY WORDS : Clear Aligners; Aesthetics; Invisalign; Removable appliances

INTRODUCTION :

Clear aligners also known as Invisalign ,is an orthodontic device that uses incremental transparent aligners to adjust teeth .It is used as an alternative to dental braces.The frequency of malocclusions in adults is equal to or greater than that observed in children and adolescents.Crowding and spacing are among the most common problems in adults, with crowding affecting about 24% of women and 14% of men, and spacing found in 8% of women and 13% of men.(1)

Despite their need for orthodontic treatment, however, adults are often averse to wearing traditional fixed appliances with wires, bands, and brackets. The Invisalign System now makes it possible for orthodontists to offer adult patients requiring full-mouth orthodontic treatment as an aesthetically agreeable solution, using a computer-assisted technology that produces a series of clear plastic overlays.

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PROPERTIES OF CLEAR ALIGNERS:

It is esthetic, comfortable, has simple mechanics, requires less chair time, treatment time and is economical.(2)

INDICATIONS FOR CLEAR ALIGNERS :

- 1.Mild crowded and malaligned problems (1-5 mm) .
- 2.Spacing problems (1-5 mm) .
- 3.Deep overbite (Class II div 2 cases) .
- 4.Narrow arches that can be expanded without tipping the teeth too much.
- 5.Absolute intrusion (1 or 2 teeth) .
- 6.Lower incisor extraction for severe crowding cases.
- 7.Tip molar distally.(3)

CONTRA INDICATIONS FOR CLEAR ALIGNERS :

- 1.Crowding and spacing over 5 mm.
- 2.Skeletal anterior-posterior discrepancies of more than 2 mm (as measured by discrepancies in cuspid relationships).
- 3.Centric-relation and centric-occlusion discrepancies.
- 4.Severely rotated teeth (more than 20 degrees).
- 5.Open bites (anterior and posterior) that need to be closed.
- 6.Extrusion of teeth.
- 7.Severely tipped teeth (more than 45 degrees).
- 8.Teeth with short clinical crowns.
- 9.Arches with multiple missing teeth. (4)

ADVANTAGES OF CLEAR ALIGNERS :

- 1.The trays are clear, aesthetic and comfortable.No metal brackets or wires to cause mouth irritation or lacerations.
- 2.Clear aligners are often not visible, allowing patients to smile with greater confidence
- 3.Better oral hygiene than fixed.

4. Unlike traditional orthodontic brackets, the trays can be removed for brushing, flossing, and eating.
5. Retention facilitated.
6. Decreased occlusal abrasion from parafunctional habits during treatment.
7. Disarticulation of the teeth may be advantageous for patients with TMJ problems.
8. Technically much easier than lingual appliances.
9. Approximating the treatment duration a little more precisely than braces .
10. Avoiding extractions of premolars by creating interdental space via interproximal reduction .
11. Healthier periodontal tissue and less risk of enamel decalcification by avoiding brackets .(5),(6)

DISADVANTAGES OF CLEAR ALIGNERS :

Since clear aligners are removable, they require more patient motivation to achieve the desired results. These devices must be worn 22 hours a day.

Clear aligners must be removed during meals, when drinking hot drinks that could spot or cause deformation, sugary drinks and during the oral hygiene .(7) Treatment time may exceed due to patient compliance to dentist's instructions, not wearing aligners the required number of hours per day, missed appointments, excessive bone growth, poor oral hygiene and broken appliances can lengthen treatment time, increase the cost, and thus can affect the quality of the end results.(8)

CONCLUSION :

The Invisalign System has opened up a new area of adult orthodontics, serving patients who may not want conventional fixed appliances or for whom traditional removable appliances may be unsuccessful. Educating patients on the advantages and disadvantages of clear aligner therapy or clear braces significantly depends on patient's expectations and compliance. They need to consistently wear the aligners 22 to 23 hours per day and only remove them to eat. One of the benefits of the aligner systems is the opportunity to see the end result of straight teeth and the progression of tooth movement during the multitude of stages.(9) It is essential to continuously motivate each patient during treatment to properly wear aligners to avail benefits of the treatment, ensure patient compliance as well as patient self discipline.

REFERENCE :

1. Buttke, T.M. and Proffit, W.R.: Referring adult patients for orthodontic treatment, J. Am. Dent. Assoc. 1999 130:73-79.
2. Turatti, G.; Womack, R.; and Bracco, P.; Incisor intrusion with invisalign treatment J. Clin. Orthod. 40:171-174, 2006.
3. Murthy VS, Vijay. Orthodontics Without Braces and Wires!! A New Paradigm. Indian Journal of Dental Advancements 2011;3(2):508-11.
4. Joffe L. Invisalign: early experiences. J Orthod 2003; 30(4):348-52.
5. Mehta F, Mehta S. Aligners: the rapidly growing trend in orthodontics around the world. Indian J Basic Applied Med Res 2014;3(4): 402-9.
6. Sadri I. An argument for clear aligners and clear braces. Dentistry IQ. Available at: <http://www.dentistryiq.com/articles/2013/10/an-argument-for-clear-aligners-and-clear-braces.html>
7. Manual O Lagravere, and Carlos Flores-mir. The treatment effect of invisalign orthodontic aligner: A systemic review. Journal of the American dental association 2005, 136 : 1724-1729.
8. Muggiano F, Quaranta A. The Aesthetic Alternative in Orthodontics With Sequential Aligners: The Invisalign System. WebmedCentral Orthodontics 2013;4(10):1-6.
9. About Clear Aligner Therapy. Available at: <https://www.tahsda.org.tw>.