

TREATMENT OF MIDLINE DIASTEMA & ROTATIONS CASE WITH CLEARPATH CLEAR ALIGNER SYSTEM (USFDA APPROVED)

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INTRODUCTION

The practice of orthodontics is faced with new trends. Adults are increasingly aware of the influence of appearance in their personal and professional lives. The aim of adult orthodontic treatment has been described as a balance among tooth alignment, occlusal contact, dentofacial esthetics, function, and relative stability¹. There are three main groups of adult patients: those who have had orthodontic treatment in their teens but experienced relapse, those who have never been treated, and older patients who may need orthodontics in conjunction with multidisciplinary treatment involving restorations. A recent survey estimated that 45% of adults were dissatisfied with their dental appearance, with 20% considering some form of orthodontic treatment to improve the alignment of their teeth. Recent advances in orthodontic materials have made adult orthodontics far more appealing in a wider range of cases.² Clearpath® Aligner system has been introduced in 2008 as a new orthodontic tool to treat orthodontic cases. This article demonstrates the use of the system for the correction of Angle's Class I malocclusion with midline diastema, spacing & rotations.



Each aligner is around 0.7mm thick and is designed to move the teeth by up to maximum of 0.25- 0.3 mm over a 2 week period. All aligners in ClearPath® system are delivered altogether and worn through a pre-defined sequence all throughout the day.

CASE REPORT

A 23-year-old male reported to with the chief complaint of irregularly placed upper back teeth & spacing in front teeth. Intraoral & Extra-oral pictures

DIAGNOSIS

The patient was diagnosed with Angle's class I malocclusion, midline diastema, generalized spacing with high frenal attachment, severe rotation of teeth 14, 41,42 & increased Overjet and Deep Overbite Frenum Blanch test

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Fig. 1: Pre Treatment (Source : Smileovations clinic, Mumbai)

was also visible and positive could be seen at papilla

Treatment Goals for ClearPath treatment:

Closure of all the spaces was planned alongside reducing the Proclination of upper and lower incisors while retracting.

De-Rotation Correction of 14 by the use of Elastic Button technique on 26 and 24.

Frenectomy was planned due to Thick Labial Frenum, which would have caused an hindrance in

space closure, Also to prevent the relapse possibility of re-opening of diastema.

CASE DISCUSSION

Patient compliance is a critical factor for success with clear aligner treatment. Treatment success depends almost completely on how compliant the patient is with wearing aligners for approximately twenty hours a day, seven days a week. Treatment time and ability to complete treatment vary considerably according to the degree of patient

compliance. The patient in this report was selected because he was highly compliant with wearing aligners

The Virtual Setup:

The virtual setup of the patient was presented by ClearPath approx. 15 days after PVS impressions & PVS bite registration were sent. The treatment plan was evaluated and the setup was approved.

TREATMENT RESULTS:

The patient was very satisfied with fit and the invisibility of ClearPath Aligners. The treatment progressed smoothly, and got completed in around 17 months. Treatment objectives achieved satisfactorily as shown in the virtual set up. The patient was very happy as there was remarkable improvement in patient's smile.



Fig. 2 : Clear Path Virtual Setup, Upper Occlusal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)

Fig. 3: Clear Path Virtual Setup, Lower Occlusal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)



Fig. 4: ClearPath Virtual Setup, Frontal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)

Fig.5: ClearPath Virtual Setup, Right Buccal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)



Fig. 6: ClearPath Virtual Setup, Left Buccal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)

The Movement Record Form (MRF): The Movement Record Form (MRF) shows all the movements each aligner is doing in each stage on every tooth.

Upper Arch:

Stg. #	UPPER RIGHT					UPPER LEFT				
	15	14	13	12	11	21	22	23	24	25
1										
2					MTP	MTP				
3					MTP	MTR	MRO			
4					MTP	MTP	MRO	MTP		
5					MTP	MTP	MRO	MTP		
6					LTP	LTP	LTP		MRO	
7					LTR	LTR	LTR		MRO	
8					LTP	LTP	LTP		MRO	
9					LTR	LTR	LTP		MRO	
10					LTP	LTP	LTR		MRO	
11					LTR	LTP	LTP		MRO	
12					LTP	MTO	LTP	DTO	MRO	
13				LTP	MTO	LTP	MTO		MRO	
14				LTR	LTP	LTR	LTP		MRO	
15				LTP	LTR	LTP	LTP		MRO	
16				LTR	LTP	LTR	LTR	LTP	MRO	
17				LTP	MTO	LTP	MTO	LTP	MRO	
18					LTP	MTO	LTP	LTR	MRO	
19				LTR	LTP	LTP	LTR	LTP	MRO	
20				LTP	LTR	LTR	LTP	LTR	MRO	

Lower Arch:

Stg. #	LOWER RIGHT					LOWER LEFT				
	45	44	43	42	41	31	32	33	34	35
1										
2		MTP							MTP	
3		MTP							MTP	DRO
4	MTP	MTP							DRO	DRO
5	DRO	LTP							DRO	DRO
6	DRO	LTR							LTP	DRO
7	DRO	LTP							LTR	DRO
8	DRO							DTP	LTP	DRO
9	DRO							DTP	LTR	DRO
10						DTP	DTP	DRO	LTP	
11					MTP	DTR	DTP	DRO	LTR	
12					MTP	DTP	DRO	DTO	LTP	
13					LTP	LTP	LTP	LTP	LTR	
14					LTR	LTR	LTR	LTP		
15					LTP	LTP	LTP	LTP	LTP	
16					LTR	LTP	DRO	DRO	LTR	
17			DTO	LTP	LTP			DTO		
18				LTR	LTR	LTP	LTP			
19			DTO	LTP	LTP			DTO		
20				LTR	LTR	LTR	LTR			

Code	Movement Detail	Code	Movement Detail	Code	Movement Detail
MTR	Mesial Translation	MTP	Mesial Tipping	DTO	Distal Torque
DTR	Distal Translation	DTP	Distal Tipping	MTO	Mesial Torque
LTR	Lingual Translation	BTP	Buccal Tipping	INT	Intrusion
BTR	Buccal Translation	BTO	Buccal Torque	EXT	Extrusion
LTP	Lingual Tipping	LTO	Lingual Torque	DRO	Distal Rotation

Fig. 7: ClearPath Movement Record Form (Source: ClearPath Orthodontics, New Delhi, India)



Pre- Treatment



Post- Treatment



Fig. 9: Pre & Post Comparison (Source : Smileovations clinic, Mumbai)



Fig. 10: Post Treatment (Source : Smileovations clinic, Mumbai)

CONCLUSION

This article discusses a spacing case treated with ClearPath® Aligners, a hygienic, removable, and comfortable appliance³. Aligners present a unique mode of treatment for adult orthodontic patients. It satisfies their aesthetic, hygienic, and metal-allergy concerns. It also allows treatment to finish in about the same or less amount of time as fixed appliances. The virtual setup is not only a diagnostic aid, but it can also be used as an educational and motivational tool for the patient. In addition, patient cooperation is imperative for the success of the treatment. For this patient, cooperation was not an issue because she was enthusiastic about the treatment. The treatment finished with good results, and the patient was pleased with the outcome.

REFERENCES

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2. Richard Needham, David T. Waring, Ovais H. Malik, Invisalign Treatment
3. The Hot Seat: Clear aligners, JCO 2015 -02-126 to129.