

# Treatment of Crowding and Proclination using ClearPath® Aligners

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## ABSTRACT

Adult orthodontic patients requiring orthodontic treatment have always been hesitant to opt for braces. And the reluctance to wear these braces due to their poor esthetic appeal has been a driving force for the development of alternative treatment options.

The ever-increasing demand for aesthetic & comfortable orthodontic treatment and rapidly expanding spectrum of feasible cases has seen ClearPath® Aligner therapy successfully completing thousands of cases in just the Indian subcontinent.

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## INTRODUCTION

The ClearPath invisible appliance involves a series of plastic aligners that are clear, thin and made by advanced 3D techniques involving use of software also. The transparency of these appliances enhances its esthetic appeal for the adult patients as well as aesthetically conscious patients.



Each aligner is around 0.7mm thick and is designed to move the teeth by upto 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

### Diagnosis:

A 25 yrs old female patient reported to our practice with the chief complaint of severe crowding in Upper and Lower anterior regions. Pretreatment records were made (Fig. 1). The patient was diagnosed of having a Class I malocclusion with crowding.



Fig. 1: Pre Treatment (Source: Smile Architect Dental Clinic, Bangalore)

### Treatment Objectives:

- 1) Decrowding and Alignment of both arches
- 2) Correction of incisor overlap
- 3) Reduction in proclination & overjet

After approval from ClearPath, we recorded the PVS impressions and PVS bite registration and sent them along with the case analysis form to ClearPath.

### Treatment Plan:

- 1) Extraction of blocked out 32 for decrowding along with mild IPR in both arches.
- 2) Using both maxillary and mandibular arch ClearPath aligners to align the teeth as well as close the spaces.

### The Virtual Setup:

The virtual setup of the patient was presented by ClearPath approx. 10 days after PVS Impressions & PVS bite were sent. The treatment plan was evaluated and the setup was approved without any modifications. The snapshots of the

virtual setup are presented (Fig 2,3,4,5,6).

The virtual setup is a very strong Diagnostic tool to visualize your treatment plan, as well as a strong motivation for the patient.



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



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

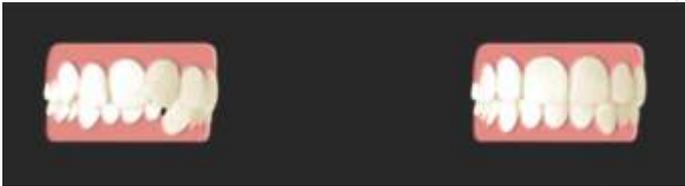


Fig 4: ClearPath Virtual Setup, Frontal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)

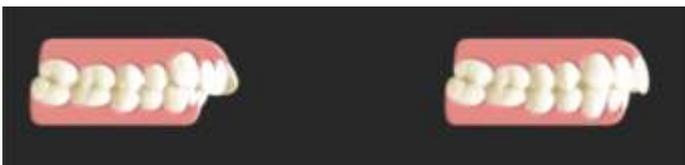


Fig 5: ClearPath Virtual Setup, Right Buccal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)

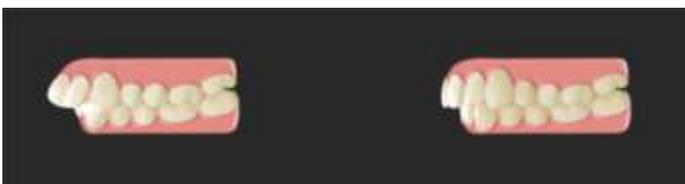


Fig 6: ClearPath Virtual Setup, Left Buccal View - Before & After (Source: ClearPath Orthodontics, New Delhi, India)

**The Movement Record Form (MRF):**

The Movement Record Form (MRF) shows all the movements each aligner is doing in each stage on every tooth (Fig. 7). Since in this case, no movements on molars were given, the form contains fields up to 2nd premolar only.

Stg. #	15	14	13	12	11	21	22	23	24	25
2					BTP	BTP				
3				BTP	BTR	BTP				
4				MRO	MRO	MRO	DTP			
5				BTR	MRO	MRO	BTR			
6					MRO	MRO	DTP			
7				DRO	BTR	MRO	BTR	BTP		
8				BTR	MRO	MRO	MRO			
9				MTO		MTO	MRO			
10				INT	MTO	LTR	MTO			
11				MTO	MTR	MTO				
12			DTO		MTO	LTR	BTO			
13				INT		MTO	DTR			
14				BTO			DTP	INT		
15				INT			INT			
16			INT				INT	BTP	BTP	
17			INT					INT	DTR	
18				INT			INT		BTP	
19								INT		
20					LTO	MTP	BTO	BTR		
21						MTP	BTO	MRO		
22					LTP		BTP	INT		

Stg. #	45	44	43	42	41	31	32	33	34	35
2						BTP	X	BTP		
3						BTP	X	BTR	MTP	
4						MRO	X	DRO	BTR	DRO
5						LTR	X	DRO	MRO	BTR
6			BTP	BTP	MRO	LTP	X	BTR		
7			BTP	BTR	LTP	LTR	X			
8	DRO	MTP	MRO	MTP			X			
9		BTR	BTP	LTR	LTP	LTP	X			
10		BTP	MRO	LTP		INT	X			
11			DRO	BTO			X	DTP	MTO	DTP
12		DTO		DTR	BTO	LTP	X			BTR
13	MTO		LTP	MRO	MRO	BTO	X			BTP
14				DTO		DRO	X	BTO	BTP	
15			DTP	INT		INT	X	LTP		BTP
16				MRO	INT		X	DTR	BTP	
17			DRO	INT	LTR	INT	X			
18			INT		INT	LTR	X	INT	BTP	
19			DTR	INT		INT	X			
20				DTR	INT		X	LTP	DTP	BTP
21				INT		INT	X		INT	
22				LTP	INT		X	DTO	BTP	

**LEGEND**

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
				MRO	Mesial Rotation

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

**IPR Form & Extraction Choice:**

IPR (Interproximal Reduction) was required to relieve the crowding in upper arch, and lower arch was decrowded by extraction of lingually blocked out 32. ClearPath was asked to plan entire IPR before the first aligner only, patient being of travelling nature.

16		15		14		13		12		11	
D	M	D	M	D	M	D	M	D	M	D	M
	0.25	0.25	0.25	0.25	0.25		0.25	0.25			

21		22		23		24		25		26	
M	D	M	D	M	D	M	D	M	D	M	D
		0.25	0.25	0.25	0.25	0.25			0.25	0.25	

Fig 8: ClearPath Interproximal Reduction and Extraction Form (Source: ClearPath Orthodontics, New Delhi, India)

**Aligner Delivery to Patient:**

The patient required a total of 22 UPPER and 22 LOWER aligners. The patient was very satisfied with the invisibility of ClearPath Aligners.

**Treatment Results:**

The treatment progressed smoothly, and got completed in around 11 months. The patient visited us only 1-2 times during entire treatment for follow ups.

The crowding was completely relieved and the patient was very happy as there was remarkable improvement in patient's smile (Fig. 9 and 10)

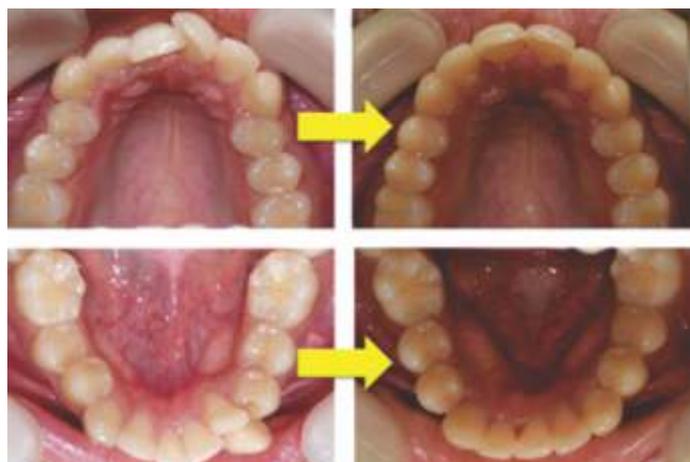


Fig 9: Occlusal Comparison (Source: Smile Architect Dental Clinic, Bangalore)



Fig 10: Smile Comparison (Source: Smile Architect Dental Clinic, Bangalore)

The overall hygiene maintenance and the level of clinical finish were of acceptable quality. The acceptance of this treatment modality is far more than conventional braces. The detailed views of post treatment results were also

recorded and presented in Fig 11.



Fig 11: Post-treatment (Source: Smile Architect Dental Clinic, Bangalore)

**CONCLUSION**

This case report demonstrates how Clear Dental Aligners have become an esthetic alternative option for correction of malocclusion. They provide a hygienic, convenient and a clear solution as an alternative to fixed appliances for the correction of the malocclusion. **Severe crowding cases can also be managed well with ClearPath® aligners system,** and have been found to be efficient as well as effective in achieving good finish & results.

**ABOUT THE AUTHOR**

Dr. Girish P.V. completed his Bachelor's in Dental Surgery from V.S Dental College, Bangalore in the year 2003. Immediately he pursued his Masters in Orthodontics from Maruti Dental College and Hospital, Bangalore.

Currently attached to the Himachal Dental College, Sundernagar as an Assistant Professor.

He started his dental practice named SMILE ARCHITECT in the year 2008 in Bangalore and is successfully practicing since then providing quality orthodontic treatments with focus on Clear Aligners since then till date.