

JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH

How to cite this article:

PRAKASH V, GUPTA R. Instant Orthodontics – A Modality to Correct Mal-aligned Teeth. Journal of Clinical and Diagnostic Research [serial online] 2010 August [cited: 2010 August 19]; 4:2967-2970.

Available from

http://www.jcdr.net/back_issues.asp?issn=0973-709x&year=2010 &month=August &volume=4&issue=4&page=2967-2970&id=842

CASE REPORT

Instant Orthodontics – A Modality to Correct Mal-aligned Teeth

PRAKASH V *, GUPTA R **

ABSTRACT

The aesthetic corrections of unaesthetic anterior teeth with all ceramic restorations have become more predictable and durable with time. Conventionally, orthodontic therapy was considered to be the most conservative approach for correcting mild to severe malocclusion. However, time and the potential of relapse of orthodontic treatment has inspired clinicians to opt for restorative means to correct malocclusion. Instant orthodontics using all ceramic restorations has become popular among clinicians in recent times. This case report highlights the use of instant orthodontics to correct malocclusion.

Key Words: instant orthodontics, porcelain laminate veneers, aesthetics

* Reader, Department of Prosthodontics, Reader Department of Conservative Dentistry, I.T.S. Centre for Dental Studies & Research, Delhi-Meerut Road, Muradnagar, Ghaziabad, Uttar Pradesh, (India).

Corresponding Author:

Dr. Vijay Prakash (MDS)

Department of Prosthodontics

I.T.S. Centre for Dental Studies & Research, Delhi-Meerut Road, Muradnagar, Ghaziabad, Uttar Pradesh (India) e-mail: drvjprakash22@yahoo.co.in, dentallifecare@yahoo.co.in, Fax: 0091 -0123225380, 0123225381

Tel: 009899932210, 009810167164

Introduction

The introduction of multi-step total etch adhesive systems which are capable of bonding both enamel and dentine has greatly influenced the practice of restorative dentistry. Traditionally, resin composite veneers were used to mask tooth discoloration and to correct unaesthetic tooth forms and positions. But they have limited longevity, as they are susceptible to discoloration, wear and marginal fractures. Glazed porcelain veneers have been considered to be a conservative alternative to traditional full coverage crowns or direct composite bonding for optimal aesthetics

[1],[2],[3],[4]. Conventionally, porcelain laminate veneers were indicated to correct unacceptable or peculiar tooth contour, interdental spacing, gingival recession, malpositioned teeth, mask tooth discoloration or to address minor tooth alignment issues [5],[6]. However, the latest trends advocate the correction of minor or severe tooth alignment concerns involving healthy teeth [7]. These restorative procedures are called as 'Instant Orthodontics' or 'Two appointment orthodontics'. This refers to the treatment option of correcting minor or even severe malocclusion using restorative procedures [8],[9]. Crispin reported that full veneers can be used to correct mild to severe tooth alignment problems [10]. Some clinicians justify the use of such methods by citing the reason of the patient's reluctance for orthodontic treatment and acceptance of restorative treatment instead of it [11]. The present case report highlights the use of instant orthodontics for correcting moderate to severe mal-alignment with the use of porcelain veneers and all ceramic crowns.

Clinical Report

A moderately built, 27 year old male patient complained of mal-aligned teeth. He wanted a smile makeover urgently, as he was getting married the next week. On examination, the patient was found to have a asymmetrical face and a concave profile. He had a short upper lip, with the maxillary anterior teeth resting on the lower lips under normal function. He had a deep bite, with his mandibular anterior teeth touching the palatal mucosa. The overjet was 6mm. He had bimaxillary protrusion with Angle's class 2 div 1 malocclusion [Table/Fig 1] , [Table/Fig 2]. He had a canine guided occlusion. There were multiple diastemas between all the anterior teeth.



(Table/Fig 1). Pre-operative photograph of the teeth-Frontal view



(Table/Fig 2). Pre-operative photograph of the teeth-Occlusal view

The preoperative photographs, intraoral radiographs and bite registration records were made. After careful study of the soft and the hard tissues, three treatment options were suggested to the patient in order of preference. The first option was orthodontic treatment along with extraction of the premolars. This was the most conservative treatment option. The second

was the extraction of the upper central incisors and the placement of immediate loading implants. The third was intentional root canal treatment of both the upper central incisors and left lateral incisor, followed by all ceramic crowns. Porcelain laminate veneer treatment was planned for the rest of the remaining anterior teeth. The patient wanted the treatment to be done urgently and preferred the third treatment option. An informed consent was procured from the patient before starting the case.

Smile design, including the midline, axial inclination, lip line, incisal edges and phonetics, interproximal contacts, gradation, gingival symmetry, gingival contour, and zenith were all taken into consideration. Diagnostic mock up was done for the upper arch and was shown to the patient. Single visit intentional root canal treatment of both the central incisors and the left lateral incisor were done. In the next appointment, crown preparation for all ceramic restoration was done on both the upper central incisors and the left lateral incisor. The remaining upper anterior teeth were prepared for porcelain laminate veneers. Minimal tooth preparation was done restricting only to the tooth enamel [Table/Fig 3]. The final impression was made with additional polysiloxane in single step with putty and light body viscosity (3M ESPE Dental products, St. Paul, MN). The provisional crowns and laminates were polished and luted with noneugenol based cement after adjusting the occlusion. Shade selection was done under natural light with Vita 3D master shade guide. The base shade was A3, with the cervical portion slightly darker.



(Table/Fig 3) Tooth preparation

In the final appointment, all ceramic crowns made of Inceram and porcelain laminate veneers made of pressable ceramics (pressed ceramic veneers IPS Empress 2; Ivoclar vivadent, Schaan, Liechtenstein) were tried in the patient's mouth for fit, marginal adaptation, contour and colour. After a satisfactory fit, the teeth surfaces were first cleaned with pumice slurry, rinsed with a water spray and were lightly air-dried so that the surface had a slightly glossy appearance. Rely X U 100 (3M ESPE, Germany), a dual cure self-adhesive resin cement was used to bond the veneers and crowns into place. The excess cement was removed after curing briefly for 2 seconds. Once the cement was removed, the restorations were light cured by following the manufacturer's instructions. The occlusion was checked and a final polish was achieved to finish the case [Table/Fig 4]. Post operative and oral hygiene maintenance instructions were given to the patient. He was put under subsequent recall appointments after every six months.



(Table/Fig 4) Post-operative photograph of the teeth

Discussion

The increasing demand for aesthetic anterior teeth has always posed a challenge to the clinicians to try newly developed materials for more conservative treatment options. Orthodontics is the most conservative treatment method for remodeling dental appearance and smile. Nevertheless, orthodontic therapy may be rejected by the patient due to occupational time constraints, the appearance during treatment or the aesthetics, cost and psychological concerns. The potential for relapse after orthodontic

treatment has inspired the use of restorative dentistry to recreate tooth dimensions and proportions which are comparable with post-orthodontic results in terms of both an aesthetic and functional clinical outcome[12]. The most common method of rehabilitating the problem of mal-alignment without orthodontic therapy is utilizing ceramic laminate veneers and all ceramic crowns. Such a treatment is known as instant orthodontics, where malocclusion is corrected in two – three appointments. The goals of both orthodontics and restorative dentistry are much similar, but the manner in which they are achieved, are different. With the development of modern bleaching techniques, advanced enamel and dental adhesive systems and ceramic materials give clinicians a chance to mimic the natural tooth structure. Ceramic veneers are one of the most conservative and aesthetic techniques that can be applied when restoring the arch for improved aesthetics[13].

Some authors however, have reflected concerns regarding the current concept of instant orthodontics [8],[9],[10],[11],[14],[15]. They have recommended a more conservative procedure to correct malocclusion, by preserving more of tooth enamel. The use of ceramic restorations to correct malocclusion also presents with significant clinical and ethical issues. But the patients' aesthetic goals are important in the treatment planning process; therefore, clinicians should procure informed consent from the patient, which discloses the negative and positive aspects of the treatment.

In the present case, orthodontic treatment was offered to the patient, he rejected the suggestion due to limitation of time, cost and the duration of the treatment. Since the upper central incisors and the left lateral incisor had moderate to severe labial inclination, they were endodontically treated. The remaining upper anteriors were prepared for porcelain laminate veneers. This case has replicated the treatment

outcomes of orthodontic therapy through the use of aesthetic and restorative techniques. The advantages of this include the correction of tooth shapes and dimensions that result in improved tooth preparations with an aesthetically pleasing appearance.

Conclusion

The aesthetic and restorative applications of porcelain laminate veneers have increased and will continue to evolve with time. Clinicians should be judicious in responding to the ever inflating aesthetic demands of the patients. It is extremely important to procure an informed consent from the patients before treating such cases. It is also important to discuss the functional and biological implications of his or her choice.

References

- [1] Peumans M, De Munck J, Fieuws S, Lambrechts P, Vanherle G, Van Meerbeek B. A prospective ten-year clinical trial of porcelain veneers. *J Adhes Dent* 2004; 6(1):65-76.
- [2] Fradeani M, Redemangi M, Corrado M. Porcelain laminate veneers: 6- to 12 -year clinical evaluation - a retrospective study. *Int J Periodontics Restorative Dent* 2005; 25(1):9-17.
- [3] Smales RJ, Etemadi S. Long- term survival of porcelain laminate veneers using two preparation designs: a retrospective study. *Int J Prosthodont* 2004;17(3):323-26.
- [4] Peumans M, Van Meerbeek B, Lambrechts P, Vanherle G. Porcelain veneers: a review of the literature. *J Dent* 2000; 28:163-77.
- [5] Christensen GJ. What is a veneer? Resolving the confusion. *J Am Dent Assoc* 2004; 137:323-26.
- [6] Christensen GJ. Veneer mania. *J Am Dent Assoc* 2006; 137:1574-76.
- [7] Freidman MJ. Porcelain veneer restorations: a clinician's opinion about a disturbing trend. *J Esthet Restor Dent* 2001; 13: 318-27.
- [8] Heymann HO, Kokich VG. Instant orthodontics: viable treatment option or "quick fix" copout? *J Esthet Restor Dent* 2002; 14:263-64.
- [9] Spear FM. The esthetic correction of anterior mal-alignment conventional vs. instant (restorative) orthodontics. *J Calif Dent Assoc* 2004; 32:133-41.
- [10] Crispin BJ. The full veneer as an alternative to the full crown. *Curr Opin Cosmet Dent* 1997; 4:6-10.
- [11] Turkaslan S, Ulusoy UK. Esthetic rehabilitation of crowded maxillary anterior teeth utilizing ceramic veneers: a case report. *Cases Journal* 2009; 2: 8329.
- [12] Kim J, Chu S, Gurel G, Cisneros G. Restorative space management: treatment planning and clinical considerations for insufficient space. *Prac Proced Aesthet Dent* 2005; 17: 19-25.
- [13] Sadowski SJ. An overview of treatment considerations for esthetic restorations: a review of literature. *J Prosthet Dent* 2006; 96:433-42.
- [14] Jacobson N, Frank CA. The myth of instant orthodontics: An ethical quandary. *J Am Dent Assoc* 2008; 139:424-34.
- [15] Christensen GJ. Thick or Thin veneers. *J Am Dent Assoc* 2008; 139:1541-3.