CASE REPORT

AESTHETIC REHABILITATION OF SPACING IN MAXILLARY ANTERIORS WITH INDIRECT CERAMIC VENEER- A CASE REPORT

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ABSTRACT

The introduction of esthetic dentistry has drastically changed the field of smile designs. Advancements in restorative techniques favors the implementation of functional and esthetical smiles. Various treatment options include esthetic space closure using composite resins, orthodontic space closure, or both. This case report discusses the management of spacing of maxillary anterior teeth using ceramic veneers.

Keywords: Aesthetic rehabilitation, Spacing, Veneer.

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INTRODUCTION

Dental aesthetics plays a dynamic role in defining oral health related quality of life of an individual.[1] Over the years, demand for esthetic dentistry has amplified among patients enthusiastic to have a visually appealing smile. Advanced restorative materials and techniques and advocacy of concept of conservation of remaining teeth favors the implementation of functional and esthetical smiles.[2]

According Steigman and Weissberg (1985), among the general population, altogether 21.4% exhibited spacing in both arches.[3] General causes of spacing could be hereditary, acquired or functional. Hereditary causes include tooth size-arch size discrepancies, congenitally missing teeth, macroglossia, supernumerary teeth, small teeth and hypertrophic upper lip frenum constitute the hereditary etiology whereas oral deleterious habits and pathologic conditions such as macroglossia, missing teeth, delayed teeth eruption constitute functional etiological components. Treatment depend upon the extent of spacing and peculiarities of dentition. Various treatment options include esthetic space closure using composite resins, orthodontic space closure, or both.[4] This case report discusses the management of spacing of maxillary anterior teeth using ceramic veneers.

As per Manuele Mancini, ceramic veneer is considered as the treatment modality in cases of abrasion, crown fracture, diastema cases, teeth defects, discolouration, cases that cannot be corrected by orthodontic treatment and to adjust occlusion.[5] The contraindications of this technique include bruxism and other habits, edge to edge bite and deep bite.[5] This case report discusses the management of spacing of maxillary anterior teeth using ceramic veneers.

Case report

A 30-year-old female patient reported to the clinic with the chief complaint of spacing between teeth in the upper front teeth region. The medical history of the patient was non-contributory. The patient gave a dental history of incomplete orthodontic treatment. The patient underwent orthodontic treatment for space closure few years back. Due to personal reasons, the treatment was discontinued which resulted in relapse of spacing.

Clinical examination revealed spacing in the upper anterior region with congenital missing of both maxillary lateral incisors. On examination around 2mm space was appreciated between 11 and 13. Equal amount of spacing was noted between 11, 21 and 13, 14. The dental midline was shifted to the right side of the patient with relation to the mandibular anteriors.

The patient demanded an immediate solution for the spacing in the maxillary anterior region. The patient was informed about all the treatment options. Because of the relapse, patient was not interested to take up orthodontic treatment again. Hence considering the clinical scenario and patients, choice, it was decided to close the spacing indirect veneers from canine to canine region. Although the patient had a history of discontinued orthodontic treatment, her posterior teeth were in occlusion with no deep bite of anteriors. Since the patient was only concerned about the spacing maxillary anteriors were only planned for ceramic veneering. Informed consent was obtained from the patient prior to the start of treatment.

A comprehensive intra and extraoral examination including the evaluation of both hard and soft tissues, temporomandibular joint assessment, evaluation of periodontal health and patient's occlusion. Frontal and lateral profile photographs were taken for record purpose and post treatment evaluation. (Figure 1 and figure 2) The hard tissue components like midline position, crown length and other tooth dimensions, inclinations, interdental contact area and point were assessed and recorded.

Shade selection was done using Vitapan Classical shade guide (Vita Zahnfabrik, Germany) before teeth preparation. Both the canines 13, 23 were prepared into the shape of lateral incisors whereas 14 and 24 were prepared to the shape of canine for better good esthetic appeal. (Figure 3 and figure 4)

The proximal margins were stretched out into the area of the contact point and throughout the teeth preparation, chamfer finish line of 0.5-mm-depth

was prepared using round end tapered bur.

Retraction cord (No.000) embedded in 2% lignocaine and adrenaline was inserted in the gingival sulcus and kept for few minutes. Gingival retraction cord was removed just before the impression making. Upper full arch impression was made with poly vinyl siloxane material using putty technique, followed by taking lower arch putty impression and were sent to the laboratory for fabrication of IPS- emax porcelain veneers. (Figure 5) In this case, provisional restoration was not required as the tooth preparation was minimal and confined to enamel. Later, diagnostic wax up was made and was explained to the patient.

The fit, shade, marginal adaptation and of the veneer was assessed by individual and collective try-in. the approval of the patient was ensured during the appointment of try-in. oval was obtained at the time of try-in.

The light-cured resin cement (Metacem resin cement / META) was used for cementation. It was mixed properly and was placed on to veneers. After applying it on the teeth, it was light cured from a 5 cm-distance for 5 seconds. Afterwards, each laminate was cured for around 40 seconds. Final finishing was done with composite finishing burs. The overall results were appreciable, and the patient was very well satisfied with the final esthetic output.

Figure 1: Pre-operative frontal view

Figure 2: Pre-operative lateral view

Figure 3: During teeth preparation

Figure 4: Finished teeth preparations

Figure 5: Indirect laminate veneers

Patient was given post-operative and oral hygiene instructions. (Figure 6)

Discussion

Along with the remarkable compressive strength, colour stability and abrasion resistance, the exceptional capacity of ceramic veneers to reproduce the optical properties tooth tissues like fluorescence, opalescence, and translucency resulted in its unique position as the main stay of managing esthetic issues. (pini)

The patient was well explained about all possible treatment options, focusing on the merits and demerits of each. The patient chose indirect ceramic veneers as the comfortable option. In the present case, even though the patient had a history of discontinued orthodontic treatment, her posterior occlusion was in favour of veneer treatment in the anteriors. The molars were well occluded, supporting the choice of veneer as the treatment modality. All possible efforts were taken to evaluate the distinct features and occlusion and to visualize the patient the esthetic result using casts and try-in.

The placement of overall chamfer preparation reduced the risk for fracture and facilitates colour build up with veneer cementation.[5]

In the current situation, lithium disilicate based ceramic was chosen as the material for veneer fabrication because of its reported properties like improved translucency and outstanding esthetics mimicking natural dentistion.[6]

The clinical success of anterior space closure depends upon case selection and treatment selection. If ceramic veneers are selected in indicated cases with implementation of appropriate techniques, remarkable rehabilitation of aesthetics can be achieved. The extent of bonding between veneer and tooth surface is vital in treatment success. In subsequent follow ups, there was neither degradation of the restoration quality nor marginal gaps or surface alterations.

Figure 6: Post treatment view

Conclusion

In the present case, management of spacing of maxillary anterior teeth using ceramic veneers is depicted. The benefits of ceramic veneer like minimal tooth preparation and better bonding of ceramic to tooth structure adds to the treatment quality.

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