



CASE REPORT

CONSERVATIVE ESTHETIC APPROACH WITH ALL CERAMIC CROWN AND PINK PORCELAIN- A CASE REPORT

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ABSTRACT

Dental traumatic injuries are uncertain and consequences following unesthetic appearance of teeth is of major concern. Esthetics, a subjective factor is necessary to formulate a treatment plan according to the patient's needs. The condition requires minor modification of clinical protocols and achieve optimal esthetics and adhering to principles of minimal intervention. Here in this case report, we will discuss the esthetic management of a malpositioned tooth with gingival recession post trauma with an esthetic all ceramic crown with gingival porcelain.

KEYWORDS: Esthetics, cosmetic recontouring, ceramic crown, pink porcelain

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INTRODUCTION

Esthetics in dentistry is solely not based on white component of the restoration but also on the pink component¹. The pink component, gingival tissue is lost due to trauma, ridge resorption, and traumatic extraction. Though surgical regenerative periodontal procedures can reconstruct the soft-tissue defect but it can be an invasive procedure leaving the patients with an esthetic problem. In such situations, the defects can be treated by a conservative prosthetic approach². A predictable esthetically pleasing and functional outcome without invasive surgical intervention is a choice of treatment today.

CASE REPORT:

A 40-year-old female patient reported to the Department of Conservative dentistry and Endodontics with the complaint of unaesthetic appearance of her upper front right-side tooth and visibility of tooth on closure of lips. Patient gave history of trauma due to self-fall before one year which resulted in mobility and displacement of her tooth which was stabilized by a dentist in a private clinic. Dental history revealed that fiber splinting was done for stabilization from 13 to 23 before eight months.

CLINICAL FINDINGS

On extra oral examination, lip was incompetent with visibility of 12, on closure with no evidence of swelling or facial asymmetry. On intraoral examination, 12 was extruded by 1mm and labially placed and proclined out of the existing arch form with normal anatomic contours, color and consistency. Pulp vitality status assessed using electric pulp tester elicited a positive response. Periodontal status revealed recession in 12 about 1 mm and a probing pocket depth of 3mm with no mobility and no tenderness to percussion. The case was diagnosed as subluxation in 12. The treatment plan was to manage it esthetically with intentional RCT followed by all ceramic with gingival ceramic in 12.

TREATMENT PLAN

During the first visit, preoperative photographs were recorded Fig 1 (a) (b). Composite remnants of previous splinting were removed using a finishing bur Fig 2. Preliminary impression was taken and diagnostic study model was made using die stone. Mock guide preparation was done in the model to estimate the amount of tooth reduction Fig 3. During the second visit, intentional single visit root canal treatment was done in 12 and with the aid of

this guide, crown preparation was done with labial reduction to bring the tooth within the contours of the arch with minimal lingual and incisal reduction for the adequate clearance Fig 4. Gingival retraction was done (000 cord, ultrapak and cord packer no.2, GDC). Final impression was recorded with silicone base putty and light body (DPI Photosil) Fig 5. Mock up waxing was done with hard ivory wax (MAARC mock-up wax) and wax trial was done Fig 6. Shade selection was done A2 shade (VITA classical shade tab) and G2 gingival shade (Gingival solution,Ivoclar vivadent) Fig 7. Monolith all ceramic crown (3M ESPE Lava) was fabricated with addition of gingival ceramic for recession coverage Fig 8. Ceramic try in was done after verification of fit, final adjustments made and the crown was finally glazed. Crown was luted using self-adhesive resin cement (Speed CEM, Ivoclar vivadent) Fig9. Post-operative photographs showing the tooth within the arch with esthetically pleasing smile Fig 10(a) (b). Pre-operative and post-operative smile and profile view. Fig 11(a) (b).



Fig 1a: Pre-operative lateral profile view



Fig 1b: Pre-operative frontal profile view

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Fig 2: Intraoral view after composite remnants removal



Fig 7: Shade selection was done A2 for ceramic crown and G2 gingival ceramic



Fig 3: Mock guide preparation in the study model



Fig 8: Monolith all ceramic crown fabricated with addition of gingival ceramic



Fig4: Tooth preparation in 12



Fig 9: Crown luted using self-adhesive resin cement



Fig 5: Final impression using silicone putty



Fig 6: Wax trial with ivory mockup wax



Fig 10a: Post-operative smile lateral profile view



Fig 10b: Post-operative smile frontal profile view



Fig11a: Preoperative and postoperative smile view



Fig11b : Preoperative and postoperative profile view

DISCUSSION

Smile plays a significant role in perception of one's own personality and gives a confidence enhancing the overall appearance¹. A challenge related to esthetic smile here was the malposition, lip incompetency and recession considering all these factors gingival contour modification was incorporated in the restoration⁹.

Here since esthetics was of major concern, the prime objective was to bring the tooth within the arch contour by labially preparing the tooth for better appearance as there is risk of pulpal exposure during tooth preparation and in addition the tooth was extruded and periodontal compromised with class 1 gingival recession we decided on intentional root canal therapy^{3,4}.

Ceramic was chosen as the post endodontic restoration due to its excellent physical, mechanical and biocompatible properties which allow the zirconia ceramics to be versatile, achieving marginal accuracies with superior gingival response. its outstanding translucency, color match and individualization improved to reach a ultimate esthetic level in the monolithic crown⁵.

The pink materials currently available for the reproduction and reconstruction of artificial gingiva are ceramics, acrylics and composite¹⁰. Each one has its own advantages, disadvantages and specific indications. For fixed partial restorations, ceramics were usually the material of choice to reproduce not only the white esthetics but also the pink esthetics, hence pink porcelain was added cervically to replace the recession of about 1mm⁶. Wider understanding and proper technical utilization of gingival-colored porcelain in esthetic zone deformity can be involved as a prosthetic paradigm in practicing contemporary esthetic dentistry.

Wax try in was done to ensure reestablishment of tooth position, alignment, inclination, proportion, morphology, gingival contour and lip competence, also to show the patient a predictable outcome of the restoration⁷.

Cementation of crown was done using a translucent Self-adhesive resin cement which is dual-cured and adhere to tooth structure without the requirement of a separate etching step and application of an adhesive or bonding agent^{8,10}.

CONCLUSION

Restoring the anterior dentition with ceramics is an excellent approach if the correct treatment plan is developed. Prompt considerations of all aspects of the case was addressed with restoration that met the patients demand with a predictable outcome like ideal fit, function and esthetics.

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Nil

CONFLICTS OF INTEREST

There are no conflicts of interest.

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