Esthetic Rehabilitation – A Conservative Way  

Abstract
A smile is an inexpensive way to change your looks but when anterior teeth are missing, this pleasing smile becomes unesthetic. The fixed partial dentures have always been a choice in these cases but with the introduction of concept of prosthetic driven implant dentistry, a new dimension in rehabilitation of smile design has evolved in a conservative way. This case report describes the effective means to rehabilitate the smile design is by application of gingival porcelain to camouflage the gingival defect and reconstructing the lost smile in a 19 years old male patient.

Key Words: smile design; gingival porcelain; implant supported fixed partial denture

Introduction
The esthetic considerations for anterior segment is challenging to the prosthodontist because the patient’s desire for an esthetic smile. A captivating smile showing an even row of natural gleaming teeth is a major factor in achieving that elusive dominant characteristic known as personality.(1) In an effort to create natural aesthetics the clinician must give careful consideration to the patient in his or her entirety. Smile design is a relatively new discipline in the area of cosmetic dentistry and it involves several areas of evaluation and treatment planning.

With the development of advanced surgical techniques implants have been utilized in varied situations including replacement of a single tooth, partially edentulous patients and in complex combinations with higher success rate. The use of implants in the anterior segment is at many times compromising due to deformities in the edentulous crest usually resulting from trauma and infections, the proximity and angulation of the adjacent roots, and abnormal occlusal/incisal relationship.(2-5) This case report describes the effective means to rehabilitate the smile design is by application of gingival porcelain to camouflage the gingival defect and reconstructing the lost smile in a 19 years old male patient.

Case report:
A 19 years old male patient reported with the chief complaint of poor esthetics due to improper restoration (Fig 1a). On oral examination, there were three unit metal ceramic fixed restorations in the maxillary anterior region. Radiographic examination revealed the presence of two implants in relation with 11 and 21 which were satisfactorily osseointegrated. The implants were labially positioned, resulting in unaesthetic labially placed restorations from prosthodontic perspective. The right lateral incisor was congenitally absent and canine was transposed in its position. Also, the loss of over-retained deciduous canine lead to the presence of large space in relation to 13 and 14 which was not restored in the existing prosthesis. Hence the patient was unhappy with the existing prosthesis. Further evaluation revealed the following drawbacks. a) The cervico-incisal length of the crown was overextended resulting in long tooth appearance, b) the prosthesis midline was not coinciding with the patient’s midline (Fig 1a), c) presence of black triangles in the cervical regions which lead to unesthetic appearance, plaque accumulation and production of hissing sound due to passage of air through the spaces.(Fig 1a)

In this case prior to restoration criteria such as position of the implant, pre-existing tooth form and position, its relation with the opposing arch, soft tissue anatomy, bone dimension, facial midline and lip line were considered to achieve optimal esthetics. After thorough oral and radiographic examination it was decided to remake the anterior bridge under the esthetic domain. As the bony defect was large, the dark circles were camouflaged using gingival porcelain. The total space of 18 mm was available from the mesial surface of transposed right canine to the mesial surface of left lateral incisor which could accommodate only two central incisors.

The treatment was phased out in the following order: At first, the existing three unit bridge was removed. Since the space was present between 13 and 14, cantilever with canine was planned. For this, the root canal treatment was done for right canine, followed by tooth

Figure 1a. Pre-operative, 1b. Abutment preparations, 1c. temporization, 1d & 1e. Final restorations, 1f. Post-operative
preparation to give the shape of lateral incisor and also it was used as abutment to provide a cantilever canine with an occlusal rest on right first premolar (Fig 1b). Secondly, the implants were placed labially, the abutments were custom fabricated with a lingual inclination to satisfy the esthetics with due consideration to patient’s facial form and profile. Final impression was made with the putty polysiloxane impression material, relined with light body and the master cast was poured in die stone. The prepared tooth and anterior implants were restored with temporary crowns to analyse the final outcome (Fig 1c). They were restored with individual metal ceramic crowns with gingival porcelain to camouflage the ridge defect (Fig 1d, 1e). The black triangles were taken care of by placing the gingival porcelain interdentally and some of the areas above the cervical margin. The provision for gingival porcelain was made during the fabrication of wax pattern where the extensions in the metal framework were provided in the areas where the gingival porcelain is to be added. Patient was instructed about the maintenance of oral hygiene by means of dental floss, interdental brush and mouth wash. Also, the patient was called upon for recall visits after 1 week, 1 month and 3 months.

Discussion

Aesthetics is an inherently subjective discipline and smile design is a relatively new discipline in the area of cosmetic dentistry, and it involves several areas of evaluation and treatment planning. By understanding and applying simple aesthetic rules, tools and strategies, dentists have a basis for evaluating natural dentitions and the results of cosmetic restorative procedures.(1)

In such compromised cases of esthetics, it is important to go into the details of the basic components of esthetics and the components of smile design. The facial midline is a critical reference position for determining multiple design criteria. The amount and position of tooth reveal in various views and lip configurations also provide valuable guidelines in determining aesthetic tooth positions and relationships. Gingival porcelain again is an important factor for improving the aesthetics and phonetics.(3-5)

Conclusion

In this case the main considerations were given to the facial midline, elimination of black triangles and also the compensation of the space between the canine and the pre-molar with the help of providing the cantilever.

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Source of Support: Nil, Conflict of Interest: None Declared