

CASE REPORT

Esthetic Prosthodontics: Case Reports

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Abstract

In today's world, role of esthetics has increased drastically. Sometimes the patient reports with such clinical condition or expectation which leaves the dentist in a state of prosthodontic dilemma. In such cases, unconventional procedures or modification in the material or technique of fabrication can be carried out to get the desired results. In this article, esthetic rehabilitation of the patients has been described using three case reports.

Keywords: Esthetics, Loop connector, Resin bonded prosthesis, All ceramic crowns

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Introduction

In today's world, patients have become more esthetically conscious and demanding, role of a prosthodontist has also widened and now it is not just limited to mere replacement of missing teeth but has also included ways to incorporate esthetic dentistry termed as esthetic prosthodontics.

In the sequence of achieving this, various challenges need to be overcome. Firstly, the correct treatment plan which should be designed to restore the patient's dentition to good health with optimal function and esthetics.¹ Secondly, the patient's desire which sometimes is very high and unrealistic. Thirdly, perfect shade selection which is affected by the knowledge of colour and colour perception and require organized and proper methodical manner². Fourthly, the cost factor as we have to provide patient with the best possible treatment within his/her affordable range.

This article presents three case reports in which esthetics of the patient have been restored by three different methods by using either unconventional techniques or new esthetic materials.

Case Report- 1

A 45 year female patient reported to the Department of Prosthodontics with the chief complaint of unaesthetic appearance. Her extraoral examination revealed incompetent lips and a convex facial profile (Figure 1). On intraoral examination, it was found that her maxillary right and left central incisors were periodontally compromised with grade II mobility and recession (Figure 2). There was a generalized diastema present between the maxillary anterior teeth. The incompetency of lips was found to be due to protruded maxillary central incisors which also resulted in an overjet of 8mm (Figure 3).

The diagnostic impression was taken using irreversible hydrocolloid impression material and treatment plan was formulated which included extraction of both the maxillary central incisors due to their poor prognosis followed by one of the following:

- **Implant supported fixed prosthesis:** As the patient was not ready for any surgical and costly procedure, this option was discarded.
- **Conventional porcelain fused to metal (PFM) bridge:** But due to large mesio-distal space of the edentulous area, this option was

discarded as this would have resulted in too wide anterior teeth.

- **Fixed prosthesis using loop connector:** This treatment option was chosen as would have helped in maintaining diastema without any compromise in the esthetics of the patient.

Procedure

Both the maxillary central incisors were extracted followed by root canal treatment of both the maxillary lateral incisors. Tooth preparation was done on 12, 21 and 23 as per the requirements of PFM crown. After this, impression was made with putty and light body polyvinyl siloxane using two step technique. One more impression was taken in alginate for

mock up and fabrication of provisional restoration. Patient was shown the wax mock up with spacing. After her consent, provisional restoration was fabricated and cemented which apart from maintaining the aesthetics also helped in evaluation of the final outcome. Thereafter, wax pattern was fabricated on the cast retrieved with loops on the palatal side. Care was taken not to extend the loops on the rugae area as that would lead to difficulty in speech. The final prosthesis was fabricated (Figure 4) and after verifying the fit and esthetics, it was cemented using Glass Inomer luting cement (Figure 5 and 6).



Fig 1: Pre-rehabilitation extraoral view



Fig. 2: Pre-rehabilitation intraoral view



Fig. 3: Lateral view showing increased overjet



Fig. 4: Final prosthesis on cast



Fig. 5: Post rehabilitation intraoral view



Fig. 6: Post rehabilitation extraoral view

Case Report- 2

A 43 year old female patient reported to the Department of Prosthodontics with the chief complaint of missing upper front tooth. Intraoral examination showed missing right lateral incisor (Figure 7). We had three treatment options in this case.

Implant supported fixed prosthesis: But the patient was not ready for any surgical procedure, so this option was discarded.

Conventional PFM bridge: As this approach was invasive requiring unnecessary reduction of the adjacent teeth, this option was not chosen.

Resin bonded FPD: As only a single tooth was to be replaced and the adjacent teeth were caries free with sufficient enamel to etch for retention, this treatment option was selected.

Procedure

Preliminary maxillary and mandibular impressions were made. Tooth preparation was done on 13 and 11 as per the requirements of the

partial veneer crown. Final impression was made using putty and light body impression material (two stage technique). Another impression was made in alginate for fabrication of the provisional restoration. Wax pattern was

fabricated and casted. After trial (Figure 8), final prosthesis was made. Cementation was done using self adhesive resin bonded luting cement (Figure 9).



Fig. 7: Pre-rehabilitation intraoral view

Fig. 8: Metal trial

Fig. 9: Post rehabilitation intraoral view

Case Report- 2

An 18 year old male patient reported to the Department of Prosthodontics with the chief complaint of fractured upper front teeth due to trauma. Intraoral examination revealed Ellis class III fracture in maxillary central incisors which were also tender on percussion (Figure 10). The patient was given two treatment options.

Conventional PFM crowns: The patient was told about the final aesthetic outcome of PFM crowns which as compared to all ceramic crowns would be less due to metal substructure.

All ceramic crowns: As the patient was highly conscious of his looks and wished for a prosthesis which would perfectly blend with his

existing dentition, this treatment option was chosen.

Procedure

After taking the diagnostic impressions, shade selection was done using Vita Classic shade guide. Root canal treatment was performed on both 11 and 21 after which tooth preparation was done in accordance to the requirement of an all ceramic crown (Figure 11). Final impression was made using putty and light body impression material and provisional restoration was given to the patient. IPS Emax all ceramic crowns were fabricated and after verifying the fit and shade, cementation procedure was carried out using Variolink II cementation kit (Figure 12).



Fig. 10: Pre-rehabilitation introral view with fractured maxillary central incisors

Fig. 11: Tooth preparation

Fig. 12: Post rehabilitation intraoral view

Discussion

Restoring esthetics of the patient maintaining the natural anatomic tooth forms and by using conservative and affordable procedures is a challenging task. The first case report describes fixed prosthesis with a loop connector on the palatal side. Loop connector is a non rigid type

of connector required to maintain the existing diastema in a planned fixed prosthesis^{3,4} and in cases of excessive mesio-distal width of pontic space⁵ as conventional PFM crowns in such cases will cause too wide teeth resulting in poor esthetics. The final outcome left the patient completely satisfied with significant change in

her appearance, complete closure of her lips and reduction in the overjet to 4mm.

The second case report described use of resin bonded FPD which is a conservative approach to restore esthetics as it cause less biological damage, is esthetically pleasing and is less expensive⁶. The third case report utilizes metal free crowns which provided high esthetic solution due to their colour matching along with psychological and functional benefit to the patient.⁷

Conclusion

Esthetics plays a crucial role in adding confidence and improving self esteem of the patient. It can be affected by any missing, fractured, discoloured or chipped off anterior teeth. A dentist must therefore, utilize all his knowledge, expertise and tools available to visualize the treatment outcome and formulate the treatment plan best suited for the patient.

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References

1. Singh S, Singh N. Treatment planning for fixed partial dentures. *Int J Oral Health Med Scie.* 2015; 2 (2): 99-101.
2. Bashir U, Lakshmanarao B. Color matching instruments and systems in prosthodontics. *Ind J Res* 2016; 5 (3): 145-147.
3. Singh V, Singh S, Gupta V, Sinha AK. Loop connector: A treatment option to achieve optimal esthetics for maintaining the diastema – A case report. *J Adv Med Dent Sci Res* 2016;4(2):75-77.
4. Nayar S, Jayesh R, Venkateshwaran, Dinakarsamy V. Loop connectors in dentogenic diastema. *J Pharm Bioallied Sci* 2015;7(1):279-81.
5. Rami DS, Bavaria S, Sethuraman R, Shah N, Agrawal N, Detroja K. An aesthetic management of missing maxillary central incisor with loop connector: An endodontic- prosthodontic approach. *J Applied Dent Med Scie* 2016;2(1):77-83.
6. Joshi M, Chinna N, Mittal S, Jain M. Resin-bonded bridge: Conservative treatment option for single tooth replacement. *J Adv Med Dent Scie* 2013; 1 (2): 162-166.
7. Sharma AK, Bhanot R, BANSAL P, Kapoor D. Aesthetic management of proclined maxillary central incisors with all ceramic crowns: A case report. *J Clin Diag Res* 2010; (4): 3643-3647.